March/April 2018

AIRFINANCE JOURNAL

YOUR ESSENTIAL INTELLIGENCE RESOURCE FOR AVIATION FINANCE

SLB terms ‘are being eroded’

Jackson Square’s Toby Bright on airline pricing power, widebody transitions and OEM orders

INVESTOR’S VIEW | JOL/JOLCO SURVEY 2018

REGIONAL AIRCRAFT SUPPLEMENT

Adjusting for **interest rate rises**

With interest rate rises on the way, lessors need to examine their rental contracts, writes **Jack Dutton**.

On 27 February, the new chair of the Federal Reserve, Jerome Powell, gave his first speech in the post. Unlike many of President Trump's choices for cabinet secretaries, Powell is not a controversial one. He is expected to follow Janet Yellen's footsteps and adopt a cautious interest rate policy – the former Fed chief even describes Powell as "part of the consensus".

Even so, interest rates will probably rise several times over the next two years. Policymakers' median forecast is for three quarter-point interest rate rises this year and two more in 2019.

Although 2018 has not yet seen its first rise, many lessors are already realising the impacts of higher rates in their aircraft rental contracts. Steven Udvar-Házy, executive chairman of Air Lease (ALC), said on a recent fourth-quarter earnings call that he sees increased costs across all forms of financing for airlines.

"Whether it's EETC [enhanced equipment trust certificates] or whatever financing structure, those costs are going to go up," he said. "Most of our customers are non-investment-grade credits, and so we believe their interest rate cost will probably go up at a faster clip than ours will as an investment-grade company."

John Plueger, ALC's chief executive officer and president, said on the same call: "We are delivering airplanes that have interest rate adjusters, so we're seeing the impact of a rising rate environment show up today. We're looking at higher interest rates, but fortunately we have the adjusters in our lease contracts for forward deliveries, which increase our lease rates as interest rates rise."

Understanding the impact of rising interest on the aviation industry is not straightforward. Rate increases are likely to result in more interest rate adjusters, which alter lease rentals according to changes in interest. Once common in leases, especially before the financial crash of 2008 when rates were more volatile, such adjusters all but disappeared after interest flat-lined at a record low. However, if leasing companies continue to provide fixed-rate leases rather than ones with adjusters, airlines will likely find these attractive compared with bank financing.

Will increases in interest rates impact aircraft values? Many financiers think rises could bring values down. Higher interest rates are likely to lead to higher discount factors on aircraft, and discounting cash flows by a higher amount can decrease the value of an aircraft.

Higher rates will disadvantage most businesses in this segment except banks and noteholders. However, debt margins are low for airlines right now and many of them should be able to absorb the impact of a few slight rate rises.

One of the biggest questions is how rate rises will impact the new capital that has flowed into this sector over the past few years. Some of the industry's sale-and-leaseback money may not survive. New entrants will have capital expenditure targets and if better returns materialise in other markets, they may deploy their capital elsewhere.

Financiers I speak to disagree slightly on the subject. Some believe most of the new money will leave aircraft finance, while others caution that the exodus will be smaller than expected.

If the new money is from economic investors hunting for value, they would likely leave the sector if interest rates go up significantly. However, some financiers tell me that many of the new investors are deepening their understanding of the sector, and are in it for the long haul.

That said, there is still a huge supply-demand imbalance in the sale-and-leaseback market and interest rate rises may necessitate a correction in lease rates. But that may be cancelled out by higher returns attracting more players to the market.

There are many factors that could impact interest rates. One prominent example is President Trump's recent tax reforms. US-based lessors and airlines have been vocal about how Trump's tax cuts have helped their businesses. ALC enjoyed a $354 million benefit from the December 2017 US tax reform legislation, increasing the Los Angeles-based lessor's net profit to $756 million for 2017. Spirit Airlines expects a $200 million income tax expense reduction in the fourth quarter of 2017. Southwest Airlines said the reforms will lead to further investment in the airline.

These reforms could also impact the financing strategies of US carriers. From 2018, up to 30% of a company's Ebitda (earnings before interest, taxes, depreciation and amortisation) can be deducted as interest expenses. There is no cap on interest expense deductions for lease rentals, so this makes leasing more attractive than financing for US airlines. However, there is also another US tax law change that provides for up to 100% bonus depreciation, which encourages investment and makes purchasing aircraft attractive to airlines. US carriers will need to weigh both of these tax law changes to determine whether to lease or finance.

Although Trump's tax cuts, along with $1.5 trillion in infrastructure spending, are expected to boost the US economy in the short term, they will also escalate the budget deficit. Such policies will make matters more complicated for Powell and the Fed when reviewing interest rates.

JACK DUTTON
Editor,
Airfinance Journal
jack.dutton@euromoneyplc.com

Editor
Jack Dutton
+44 (0)207 779 8734
jack.dutton@euromoneyplc.com

Asia finance editor
Michael Allen
+852 2842 6941
michael.allen@euromoneyplc.com

Consulting editor
Geoff Hearn

Managing director
Laura Mueller
+44 (0)207 779 8278
laura.mueller@euromoneyplc.com

Managing director
Olivier Bonnassies
+44 (0)207 779 8062
olivier.bonnassies@euromoneyplc.com

Group sub editor
Peter Styles Wilson

Advertisement manager
Chris Gardner
+44 (0)207 779 8231
chris.gardner@euromoneyplc.com

Head of subscription sales
Chris Welding
T: +44 (0)207 779 8015
chris.welding@euromoneyplc.com

Account manager
Oliver Goodwin
T: +44 (0)207 779 8868
E: oliver.goodwin@euromoneyplc.com

Marketing manager
Sam Fairburn
+44 (0)207 779 8257
samuel.fairburn@euromoneyplc.com

Managing director, The Airline Analyst
Mike Duff
+44 (0)207 779 8058
mduff@theairlineanalyst.com

Divisional director
Danny Williams

Production editor
Tim Huxford

Subscriptions / Conferences Hotline
+44 (0)207 779 8999 / +1 212 224 3570
hotline@euromoneyplc.com

Customer Services
+44 (0)207 779 8610. 8 Bouverie Street, London, EC4Y 8AX

Directors: John Botts (Chairman), Andrew Rashbass (CEO), Sir Patrick Sergeant, The Viscount Rothermere, Colin Jones, Paul Zwillenberg, David Pritchard, Andrew Ballingal, Tristan Hillgarth

Printed in the UK by Buxton Press, Buxton, Derbyshire.

K&L Gates Singapore adds counsel

K&L Gates Singapore has hired Kamil Gerard Ahmed as a counsel in its banking and asset finance practice.

Ahmed joins K&L Gates from Clifford Chance, where he was a senior associate in the asset finance practice of its Bangkok and Singapore offices.

Ahmed will work closely with Robert Melson, a partner of the firm's aircraft finance practice and one of the coordinators of K&L Gates' firm-wide banking and asset finance practice group.

Ahmed's arrival comes after the Singapore office's addition of James Bradley as a partner in the transportation finance practice in December.

In 2017, K&L Gates Singapore lost an associate, Jesse Clark, who went in-house at Financial Products Group AIM.

Melson says Ahmed's appointment "represents K&L Gates' sixth major hire in the aircraft finance field in the past 12 months" and the firm has "seen a significant build-out at the partner and counsel level".

Kamil Gerard Ahmed, counsel K&L Gates Singapore

He adds: "We had Philip Perrotta and Sidanth Rajagopal join us as partners in London in February, Robert Snodgrass rejoin us as counsel in Tokyo in March, Misha Kovacevic join us as counsel in Seattle in November and James Bradley join us as partner in Singapore in December."

Faury succeeds Bregier at **Airbus**

Guillaume Faury, who headed the Airbus helicopter business for nearly five years, replaced Fabrice Bregier on 19 February as chairman of the group's commercial aviation division.

The European aerospace company said in mid-December that it was reshuffling its management to avoid a crisis of governance while the group is under investigation.

This reshuffle foresaw the departure of Bregier, Airbus's number two, and his replacement by Faury. It also indicates that Airbus Group chief executive officer, Tom Enders, will not renew his mandate in 2019.

Bregier, who was one of the potential successors to Enders, was the group's deputy chief executive officer and president of the commercial aviation division. In December, *Reuters* reported he would be leaving the company after the board intervened to resolve tensions over the future successor to Enders.

Faury has only replaced Bregier as head of the civil aviation branch and no new group deputy chief executive officer has been appointed.

Airbus is under investigation by the National Financial Office in France and the UK's Serious Fraud Office for irregularities in transactions involving export credit agencies. Bregier and Enders are also the target of an investigation in Austria related to the sale of Eurofighters to the country.

In Germany, an investigation related to this same sale has just been closed. It resulted in a fine of €81.25 million ($100 million). According to the prosecution, "no proof of payment of bribes" has been offered.

Faury, who had been in charge of the Airbus helicopter business since 2013, is replaced by Safran executive Bruno Even.

DAE Joramco names COO

Dubai Aerospace Enterprise's engineering division, Joramco, has appointed Abdelmalek Murad as its chief operating officer.

Murad has had 27 years' aviation experience since graduating from the University of Southampton in 1991.

He has occupied various positions in aircraft maintenance, quality assurance, development engineering and airworthiness positions, most notably with Royal Jordanian Air Force, Parker Hannifin Corporation, Royal Jordanian, Etihad Airways and Gulf Air.

Murad has experience in leading major organisational operational changes. In recent years, he has led the successful establishment of the first in-house engineering department at Gulf Air after more than two decades of outsourcing to third-party maintenance, repair and overhaul (MRO) companies.

During his long tenure with Gulf Air, Murad has been heavily involved with internationally renowned MROs such as SR Technics, SIA Engineering and Joramco, which has exposed him to various MRO best practices.

Skyco hires ABC Leasing executive

Skyco International Financial Leasing has hired Cheng Gan from ABC Leasing as its new general manager of capital department, according to a source. Cheng joined the Guangzhou-based lessor in January. *Airfinance Journal* reported on 30 November that Skyco had bought two Airbus A320s from AviaAM.

Rolls-Royce's Goodson moves to SVP sales and lessors

Simon Goodson, senior vice-president, sales and lessors, civil aerospace, Rolls-Royce

Simon Goodson has been appointed to the newly created joint role of senior vice-president, sales and lessors, civil aerospace, at Rolls-Royce, filling a role resulting from the retirement of Phil Harris last year. Goodson was previously senior vice-president, lessors, at the UK engine manufacturer.

Previously an officer in the British Royal Navy, he spent eight years in the structured asset finance markets with Barclays Bank and ING Group, before joining Rolls-Royce in 2003.

Between 2003 and 2010, Goodson worked in various roles at Rolls-Royce Capital, the group's customer financing arm, within treasury, focusing on engine leasing, aircraft sales finance and structured finance.

Between 2010 and 2014, he joined investor relations to head up the group's activities with institutional shareholders.

In 2014, Goodson joined civil aerospace as senior vice-president, lessors customer team, responsible for all sales, commercial and customer services activities with lessors.

Oman Air appoints CFO

Oman Air has appointed Suleiman Al Ghannami as its new chief financial officer (CFO), effective 1 February.

He joins the airline at a transitional time of network and fleet expansion, Oman Air says in a statement.

Suleiman brings 13 years' experience to the role of CFO. He worked for PricewaterhouseCoopers (PwC) for seven years, four of these at PwC's international offices. More recently, he was employed for six years, until October 2017, at the Oman Drydock Company, where he was finance director and acting deputy chief executive officer (CEO), administration.

Abdulaziz Al Raisi, acting CEO of Oman Air, says: "I am very glad that through our extensive search, Oman Air has successfully finalised an Omani financial expert to fill in the post of chief financial officer. Suleiman comes with high calibre, significant financial expertise and extensive international experience in this sector and has a strong track record of proven success in leading teams to deliver financial success."

DAE's Griffin quits COO post

Karl Griffin, chief operations officer (COO) of DAE Capital, resigned in February. Before joining DAE Capital, Griffin was the former COO of AWAS.

Sources say Griffin has been instrumental in the integration of the Irish lessor into the DAE platform. He will stay with DAE throughout his notice period and will leave after the AWAS integration is fully complete.

DAE closed the purchase of AWAS in August 2017, with the Dubai-based lessor taking on aircraft assets of about $7.5 billion.

Veling co-founder launches new lessor Kayan

Uday Nayak, who co-founded Mauritian leasing company Veling Aviation in 2002, has established a new aircraft lessor, after handing in his resignation from Veling on 24 January.

The new operating lessor is called Kayan Aircraft Leasing and will be based in Hammersmith, London and in Dublin.

In an exclusive interview with *Airfinance Journal*, Nayak says: "Kayan will be handling aircraft leasing, asset management, Japanese operating leases… the same things I've done before, but we will be concentrating more on new aircraft assets rather than the older assets. We will be looking at new Boeing 777s, Airbus A380s and A350s sale-and-leasebacks as well as narrowbodies. However, I want to concentrate more on the widebody part of it for the moment."

Nayak tells *Airfinance Journal* that he is looking to acquire two widebody aircraft by the end of this month.

"We are hoping to close our first deal by the end of March. I can't disclose the name of the type of the aircraft but they are widebodies. Our lawyers K&L Gates are in the process of finalising the documentation on that transaction."

He adds: "We're really hitting the ground running and starting fundraising projects along with closing on our March transaction. We're looking for more assets to buy and we're looking to acquire a portfolio, which is probably our best option at the moment to increase our size."

Anuj Kathuria, Veling's chief commercial officer, will be joining Kayan as its new chief executive officer later this month.

Sebastian Moonjelly, senior vice-president at Veling, will also be joining the leasing company as chief operating officer, also later this month.

Moonjelly and Kathuria will be based in the London Hammersmith office, as well as Nayak.

The leasing company has made several more hires, including V.P. Nagarajan, who will join as director of finance on 1 March. He was previously executive director, banking and treasury, with ETA Group in Dubai, a company that works with ships and property. Nagarajan is experienced in fund raising, structuring investments, tax planning and treasury functions. He has been closely involved in large-scale divestments and in re-structuring of companies.

Nayak says that two other former bankers are also joining Kayan, including one specialist in Jolcos and one asset-backed securities and private placement specialist.

By 1 May, Nayak expects to have a full team. He will be the chairman of Kayan Aircraft Leasing. He still has a 50% share in Veling, despite resigning as chairman.

AerCap COO to leave in May

Erwin den Dikken, the chief commercial officer of AerCap, will leave the leasing company at the end of May.

Den Dikken has been chief operating officer since 2010, and has also served as chief legal officer since 2005. He joined the company in 1998.

AerCap also announced that Vincent Drouillard will assume the position of general counsel, effective 1 June.

Drouillard is head of legal leasing at AerCap, a position he has held since 2015. He joined ILFC in 2004 and last served as head of legal EMEA, before the acquisition of ILFC by AerCap. He practiced law at Gibson, Dunn & Crutcher before joining ILFC.

Hirodo joins FPG

Paul Hirodo has been hired to join Financial Products Group (FPG) in Tokyo. He formerly worked in Osaka for Chishima Real Estate as executive officer and general manager, aircraft leasing department.

FPG Amentum recently lost senior vice-president Simon Clements to Novus Aviation Capital.

FPG was active in the Chinese market last year, arranging Jolcos for both CCB Leasing and CMB Leasing.

Aerotask appoints new adviser

Aerotask has appointed Demetris Pantazis as an adviser to the aviation consultancy's board of directors.

He will advise the directors on the company's long-term growth strategy and current business opportunities.

Pantazis has previously held positions as chairman, chief executive officer (CEO) and adviser across a range of aviation-related businesses, including group CEO of Cyprus Airways Group.

"We are excited to welcome Demetris Pantazis to our team. His wealth of experience in launching, restructuring and managing businesses across the aviation spectrum will add tremendous value to our organisation," says Rob Watts, Aerotask CEO and vice-president financial solutions.

Aerotask is a Dubai-based global aviation consultancy providing asset management and financial solutions to airlines, lessors, financiers and aviation investors worldwide.

Marian Pistik, the former CEO of Aerotask, stepped down from his position on 31 January after selling his majority stake in the company.

Boost for A380 but for how long?

The Airbus superjumbo managed to secure its first order since 2015 from Emirates in February, but will it be enough to ensure the long-term future of the programme?

January was an interesting month for the Airbus A380. It appeared the model was at risk, with the manufacturer indicating plans that would allow it to scale back A380 production to just six units a year by 2019.

The European manufacturer delivered 15 aircraft of the type in 2017, including two to Etihad Airways, two to Qatar Airways, two to Singapore Airlines and nine to Emirates Airline.

Its plans include 12 deliveries this year. Airbus previously stated that it would cut output to eight units in 2019. However, failure to secure orders could force Airbus to abandon the A380 as the current orderbook runs down.

John Leahy, Airbus's chief salesman, said in a press conference in January: "Emirates is the only airline which can take A380s at a minimum rate of six a year for eight to 10 years." He added: "If we can't work out a deal with Emirates, we will have no choice but to shut down."

But a few days later Airbus announced it had signed a memorandum of understanding with Emirates Airline for a further 36 A380s, throwing a lifeline to the troubled programme that has not received an order since 2015. The deal was firmed up later in February, restoring some confidence in the programme.

The agreement is for 20 A380s and an option for 16 more with deliveries to start in 2020.

Sheikh Ahmed bin Saeed Al Maktoum, chairman and chief executive, Emirates Airline and Group, says the order will provide stability to the A380 production line.

The Emirates deal gives 10 years of visibility for the A380 programme, according to Tom Enders, Airbus's chief executive officer. It also gives more time for Airbus to push campaigns, especially in China.

In response to a question from *Airfinance Journal* at the annual financial results press conference in Toulouse in February, Enders said: "The very positive development for the A380 is that we have now secured orders for a minimum production rate from 2020 onwards to six a year. Six a year is very low and we can do it with a reasonable level of efficiency, but it doesn't mean we're still making money on that."

He adds that the losses accrued by the company producing the aircraft at six a year from 2020 would be "digestible".

"That's the minimum; that's the rock bottom. That's the way you need to think about it," he adds. "On that, I'm pretty sure we'll get additional orders, be it repeat orders from existing customers, where we have a couple of campaigns going, or from new customers from big markets.

"There's one big market the A380 is clearly under-represented in and that's in China. The Emirates order gives us time to work particularly with Chinese airlines, and this aircraft is ideally suited for transporting increasing numbers of middle-class passengers in China to international markets."

He adds that he is "pretty confident" about the future of the aircraft well into the 2020s and beyond 2025.

"This is what we have in firm orders right now at a minimum. We will build on that and our teams, in the meantime, will come up with additional proposals about how to increase the attractiveness and the efficiency of the A380. So don't count it out yet. The A380 risk going forward is really minimal, but I see some significant upsides as we have now secured minimum production rates."

Although the latest move from Emirates adds vitality to the programme, after making the order, the carrier's president, Tim Clark, hinted that the first A380 in the carrier's fleet could retire as the new A380s join the fleet.

"Some of the new A380s we've just ordered will be used as fleet replacements," he says.

According to *Airfinance Journal*'s Fleet Tracker, Emirates operates 101 of the type. Its eldest A380 order is from July 2008, barely 9.5 years of age. By 2020, this aircraft will be 12 years old.

In 2008, Emirates took delivery of three new A380s. The following year, only two aircraft joined the fleet. In 2010, 10 aircraft were delivered. By 2020, those aircraft will be 10 years of age.

Fleet Tracker's A380 chart above provides the fleet's age profile of the Emirates aircraft. (Note they are built years, not years of delivery to the UAE carrier).

Including the recent order, the carrier has 162 A380s on order, the largest orderbook for the aircraft type of any carrier.

Leahy adds: "This new order underscores Airbus's commitment to produce the A380 at least for another 10 years. I'm personally convinced more orders will follow Emirates' example and that this great aircraft will be built well into the 2030s."

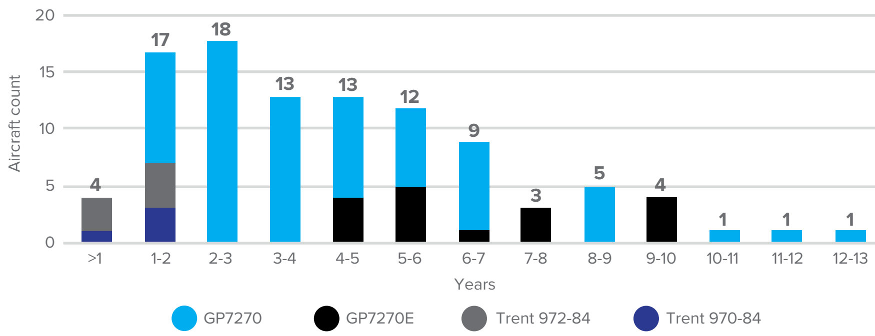
At the 20th Global Airfinance Conference in Dublin in January, Scott Hamilton, *Leeham News and Comment*'s managing director, said he still had doubts about the long-term future of the programme.

"Airbus continues to say that someday airport capacity will demand the A380 aircraft," he told delegates. "Someday that probably will be true but my view is that, by 2025, the basic design of the A380 will be more than 25 years old and the engine technology will be 25 years old. If there is a future for the A380, they have got to put on new engines."

For Hamilton, the Boeing 777-9 economics on a trip cost and per-seat basis are "better" than the A380.

He says: "The smaller 777-9 model is less risk to airlines. But if you want to jam-seat on the 777-9, you can easily put 500 seats and that puts off the need for the A380 at the so-called congestion airports."

Age profile of Emirates A380 fleet



Source: *Airfinance Journal's Fleet Tracker, 2018*

Labour issues 'will not impact' Ryanair's business model

The Irish low-cost carrier has had a lot to answer to since it cancelled thousands of flights in September. Analysts tell **Jack Dutton** about the effect of ongoing labour issues on the airline's business plan.

Ryanair's ongoing pilot strikes and labour issues will not change the fundamentals of its low-fare business model, although they could make the economics of the airline less attractive for investors, airline industry analysts have said.

"This concept that there is a structural shift in the industry between Ryanair and the competition is just a misleading view," says Goodbody Stockbrokers analyst Mark Simpson in a phone interview.

"If you look at where the cost differentials stand – let's say between itself and Easyjet – the difference given the view of an increased cost on labour would narrow that from a €4 [$4.90] differential in labour costs to, let's say, a just under €3 differential, but the total unit cost differential is €24."

He adds that Ryanair's labour cost is only a small component of the cost advantage it has over other low-cost carriers.

"So yes, you'll see a difference in that because, obviously, there is an inflation event occurring on their labour costs. On the other hand, it's far more significant what they will do to drive change benefits themselves. So the new aircraft, new airport deals – these are all things that will continue to keep that gap at a significant level," says Simpson.

On 15 September 2017, thousands of Ryanair flights were cancelled in Europe because of a mistake dealing with pilot holidays. The airline's pilot WhatsApp and Facebook groups erupted with discontent. On 15 December, chief executive officer Michael O'Leary recognised the unions for the first time, after refusing to acknowledge their presence in a general meeting in Dublin earlier that year.

> *"This concept that there is a structural shift in the industry between Ryanair and the competition is just a misleading view."*
>
> **Mark Simpson**, analyst, Goodbody Stockbrokers

On 18 January, Ryanair confirmed that all 15 of its UK pilot bases – including London Stansted's, which had previously rejected an improved pay deal – had voted in secret ballot to accept pay increases of up to 20% and these increases would be paid in the January payroll. These increases bring Ryanair's pilot pay in the UK to 20% more than competitor Boeing 737 operators, such as Norwegian and Jet2.

Ryanair will receive its first 737 Max 200 in April 2019 (at the start of its fiscal year 2020) from an order of up to 210 aircraft which deliver over a five-year period to fiscal year 2024.

Simpson does not see there being any structural change to low-cost carriers because of the unionisation issues.

Daniel Roeska, analyst at Bernstein, says: "They're doing a lot to get their pilots happy again. Yes, it will have an impact on cost. Of course, the 20% pay rise has an impact, but I would argue that more local labour law stipulations crawl into their contracts, be it on the pilot or the cabin side. We'll see a little bit higher cost inflation on the labour side.

"However, in terms of the business model, it really doesn't change that much, because we are talking about five, or six-seven euros per seat of a difference, which still doesn't get them anywhere close to Easyjet or Norwegian."

He says that, although the airline's profitability will likely decrease, the labour issues will not impact the carrier's business fundamentals.

Neil Sorahan, Ryanair's chief financial officer, told *Bloomberg* on 5 February that he expects recognising the unions to cost the airline €100 million a year from 2019. Simpson believes this figure may end up being higher than €100 million.

He says: "That number captures pay review, which would also encompass cabin crew, as well as the pilots, but over the next couple of years there will be other terms and conditions and discussions which may add additional cost."

Simpson adds: "Over the next three years, we could see €50 million to €70 million of additional costs being incurred. That's thinking about levels of productivity between themselves and some of the other airlines.

"If you benchmarked Easyjet's number of sectors flown by pilots and cabin crew, to bring its numbers and Ryanair's into equilibrium, Ryanair would have to have an additional 330 pilots over their growth and an additional 850 cabin crew over their growth. So that would equate in a full year to something in the order of €73 million."

Bocomm Leasing places ex-Air Berlin aircraft

Li Ling, the Chinese company's managing director, aviation, tells **Michael Allen** about its exposure to HNA-linked carriers and the influx of leasing newcomers entering the market.

Bocomm Leasing has placed some of its former Air Berlin and ex-Niki aircraft, according to the company's managing director, aviation.

In an interview with *Airfinance Journal* on the sidelines of the 20th Annual Global Airfinance Conference in Dublin, Li Ling said Bocomm Leasing's exposure to collapsed Air Berlin and Niki has been "well handled" and the company has placed "some" aircraft with new lessees. She declines to name the lessees or state how many aircraft have been placed.

Li says that in Bocomm Leasing's 10 years of operation and accumulation of more than $9 billion-worth of aircraft assets, the company has never had a lessee default before Air Berlin and Niki.

"We think this shows our risk control is very good," she says, adding: "We can't keep going on without anything happening. The industry definitely will have some problem lessees."

HNA exposure

Bocomm Leasing has exposure to several carriers linked with HNA, the indebted Chinese conglomerate, including Fuzhou Airlines, Hainan Airlines, Kunming Airlines and Urumqi Airlines. Some HNA-linked airlines have been delaying lease rental payments to their lessors. At the time of writing, at least a dozen lessors have confirmed to *Airfinance Journal* on an anonymous basis that this issue has affected them.

Li declined to comment on whether or not Bocomm Leasing has also been affected, saying that previous media reports about the issue had negatively affected Hainan Airlines and she does not want to "add burden to them".

She said only that Hainan Airlines' operation is "very well actually", adding: "The group may expand a little bit too fast, but not Hainan Airlines."

> *"Aircraft leasing may not meet their requirement, so some newcomers already quit the market. Maybe not formally announced, but they ceased to do new business."*
>
> **Li Ling**, managing director, aviation, Bocomm Leasing

Chinese lessors

Asked about the influx of new Chinese aircraft lessors into the market, Li acknowledged that there are "many newcomers", but noted that for "many of them the money comes from private companies and has "requirement for high yield".

She says: "Aircraft leasing may not meet their requirements, so some newcomers already quit the market. Maybe not formally announced, but they ceased to do new business."

Li adds that consolidation is difficult between bank-owned leasing companies because they do not only have aircraft business but also lease other equipment.

"If you don't want to do aircraft business, you can sell the aircraft out, so it's easy for them if the shareholder doesn't want to add new business or dispose of old business, they can do that," she says.

Li adds: "I think things will be getting better. Of course, maybe in the past one or two years some newcomers desperately need deals. To some extent, it makes the market quite disordered, but no one can tolerate very low profit for a long time, so it should be back to a rational state."

Fleet growth

Although Bocomm Leasing has a target of having 300 aircraft by 2020, growing at an average of 50 aircraft a year, Li places importance on disciplined growth over growth for growth's sake.

"We are not emphasising on the quantity as the sole index," she says. "Every year we will keep a certain pace."

To finance new aircraft, Li says that "cheapest is definitely the most important", but meanwhile she wants to try some new methods, if the cost of funds is right.

As for buying aircraft, Li says that in 2017 there were no portfolios that met Bocomm Leasing's requirements. However, it will continue to sell aircraft, following on from the sale of one aircraft in 2016 and two in 2017.

How will AFIC impact the market?

Jack Dutton explores the implications of the new insurance product and whether it is likely to have a material impact on the market.

Bob Morin, the managing director and transaction and business development leader of Aircraft Finance Insurance Consortium (AFIC), indicated at the 20th Annual Global Airfinance Conference in Dublin in January that he expected the consortium to have a significant impact on the aviation finance market in years to come.

Responding to a question from *Airfinance Journal* about how many aircraft he expects AFIC to finance this year, he said: "I'll defer to Boeing's aircraft finance outlook that was issued in December, which says that they thought the insurance industry could provide as much as 5% financing in 2018 – about the same level as the export credit industry.

"If you put that in Boeing terms, they've delivered roughly 750 aircraft… do the math… and that's roughly 35 to 40 aircraft," he adds.

The project has been an ambitious one, and Morin expects its momentum significantly to gather pace. AFIC has financed 16 aircraft since its launch in June 2017, amounting to more than $1.5 billion in assets. Nine of the aircraft were funded by commercial banks and the other seven – which include six Boeing 737 Max aircraft and a 747-8 Freighter – were financed through private placements arranged by Greensill Capital.

In a similar way to Morin's former employer, the now dormant Ex-Im Bank, AFIC looks to bring new avenues of capital into aircraft finance and attract investors that have not typically invested in aircraft before.

"When I'm talking about incremental funding for the industry, those investors probably would have never been involved in aircraft financing yet they funded six 737 Max plus one 747-8F aircraft and that really was incremental funding for the industry," he adds.

One of the biggest investors in Ex-Im-guaranteed bonds was Federal Home Loan Bank of Omaha, which before the arrival of the product, had never invested in aircraft. Morin sees new investors such as Federal Home Loan Bank of Omaha investing into aircraft through AFIC.

"These aren't the John Hancocks or the Met Lifes who have been buying EETCs [enhanced equipment trust certificates] for the last 30 years; these are other buckets of funds within these very large institutions who will now look at an aircraft deal because of the highly rated panel of insurers," he says.

However, some market observers are less convinced by the potential of the new structure.

"I don't really see AFIC taking off so much," Ron Scheinberg, senior transport attorney and shareholder at Vedder Price, tells *Airfinance Journal*. "In an Ex-Im deal, where you have one credit from the US government, with AFIC you have several liability body insurers. You have to do separate credit analysis on each, so it's not anywhere near as clean a structure from an analytical perspective."

Although he believes there will be a limited role for AFIC, saying that it will continue to close "a handful of deals every year", Scheinberg does not see it having a significant impact in the market.

"I see it more as some slight option in financing. Because of the robustness of the bank market and hunger for yield, I don't see a huge need for this product to begin with," he says.

"Going forward, even if the export credit agencies [ECAs] were full and open for business, their utilisation would be way down as well – if you put them in the same bucket I just don't see it being hugely active. It will be active, but I don't see it as a game changer or a big piece of the market."

He expects Airbus to produce a competing insurance product for Boeing.

Duncan Batchelor, Norton Rose Fulbright's global head of aviation, believes AFIC will be in the market long term, deeming it "a positive development" for aviation finance that widens the availability of credit support for aircraft deliveries.

He believes that the arrival of AFIC shows that the market has become more sophisticated and innovative when financing aircraft.

"The AFIC insurers have stated their intention to continue to grow their portfolio of aircraft and airline customers, and this is occurring against a backdrop of increased interest from the insurance market in aircraft finance more generally. Even if (or when) ECA finance increases, the insurers have stated that they intend to continue with AFIC. This makes sense when viewed from a risk diversification perspective, as insurers will want to build up a diverse portfolio of airlines and credits."

Despite this, Batchelor says that much of AFIC's activity will depend on the availability of commercial debt and ECA financing, as well as insurers' views of different airline credits, which may not align with banks' views.

"These factors will affect pricing in the market which will, in turn, determine whether the pricing of the AFIC insurance product (a combination of the debt margin plus the insurance premium) is seen as competitive by airline or lessor borrowers."

The status of the US and European ECAs may be the determining factor of AFIC's long-term success. Although it is generally not seen as a direct replacement for ECA funding, some market sources believe if the ECAs do re-open, it may be harder to market the product.

"Going forward, even if the export credit agencies [ECAs] were full and open for business, their utilisation would be way down as well – if you put them in the same bucket I just don't see it being hugely active. It will be active, but I don't see it as a game changer or a big piece of the market."

Ron Scheinberg, senior transport attorney and shareholder, Vedder Price

Comsys arranges A380 refinancing for Veling's 'east meets west' deal

With large order backlogs, carriers such as Emirates are constantly looking for new and innovative ways to finance aircraft. **Michael Allen** examines a recent deal the airline closed with Veling and Chinese lessor Comsys.

Mauritius-based lessor Veling has opened the door to additional future financings with one of China's biggest banks after an Airbus A380 refinancing transaction.

Anuj Kathuria, chief commercial officer, tells *Airfinance Journal* at Veling's offices in London that, while pricing was an attractive factor on the deal, it was not so much about pricing as generating appetite.

"It's opening that new source of financing," he says, adding: "Emriates has so many aircraft coming in and many of the banks we talk to have a lot of Emirates risk on their balance sheet. Obviously, pricing is always a factor but the reason for us to put in so much effort was the new financing opportunities from CDB."

To complete the transaction, Veling teamed up with Chinese lessor Comsys (Tianjin) Leasing, which acted as finance lessor and put security in the structure. Lune Wang, deputy general manager, Comsys, facilitated the relationship between Veling and CDB, using her bilingual abilities to expedite the deal between English-speaking Veling and Chinese-speaking CDB.

Wang tells *Airfinance Journal* that this is the first deal in which a Chinese privately owned leasing company closed an A380 transaction with Emirates. She says the most difficult aspect of the deal was meeting CDB's internal approval procedures.

"The more we worked together we found we had to do more communication. A lot of the misunderstanding is about the lack of communication, not only between Comsys and Veling but also between the lawyers. A good arranger needs to figure out what people are thinking and try to match them up – it's even more important than the deal itself," says Wang. "It feels like two train tracks merging together and going to the same direction at the end."

She adds: "I do hope this deal can broaden Chinese lessors to start working with other investors and lessors in Europe."

Commenting on the fact that the deal was for an A380, an aircraft type that has suffered a lot of negative press recently despite Emirates making a lifeline order for the aircraft in January, Kathuria admits the A380 is "not the best asset purely from reading the press", but adds that the aircraft is "at this point in time exactly where we would want it to be in terms of market perception".

We were able to propose a transaction to CDB with a large asset and a strong credit that has taken major commitments to operate a large number of A380 for many years to come" he says.

He adds: "From our perspective, the A380 works well and like any other asset-based transaction, the key for us was to structure such a transaction and mitigate the inherent risk. We think that we have done a good job at that.

"For us, there are a number of positives which we expect to see from the A380 program and market development over the years. We have a view of the various exit routes that we are likely to have during and at the end of the lease and we are comfortable with those. That's our thesis for taking on this risk and we will be looking forward to other potential business opportunities on the A380."

He says that "ultimately from CDB's perspective it was a credit play".

"It was not so much the asset but the credit…you get the credit on your books and you get the yield pick up over 777s which is what these guys went in for."

Asked if future cooperation with CDB would be for aircraft on lease to Emirates, Kathuria says this may be the case, but that other airlines would be possible, as long as they are "tier one" names.

"Business relationships take time to build and we are happy to put this one behind us. We should not be limited to Emirates transactions and it should be possible to discuss with other 'tier one' names," he says.

Matthew Leigh, a partner at Hogan Lovells, which acted for CDB, says it was "quite a substantial refinancing" for the policy bank.

"It is a good one for CDB to experience. They do a lot of aviation debt funding but I think this is one of the more unusual ones they have involved themselves with," he says.

He adds that CDB, as with all of their deals, were "very procedural" about how they do things.

"They have always got these huge long tick lists of information and detail that they require. I would not say that's particular to aircraft finance. Because they are a policy bank, that's probably what drives a lot of that."

Siddanth Rajagopal, a partner at K&L Gates in London who acted for Veling, agrees, saying that since CDB funded out of its Tianjin branch there were "a lot of hoops that that branch had to run through" to ensure the deal was aligned with the requirements of CDB's Beijing head office.

Tejaswi Nimmagadda, head of asset finance at King & Wood Mallesons Hong Kong, which acted for Comsys and documented both the finance lease transaction as well as the CDB secured loan transaction, says what made this deal special was that "usually a deal of this kind has three boxes (financier, operating lessor and airline), but this one has four – CDB providing the secured financing to Comsys."

He agrees with Leigh that CDB had a lot of internal requirements for the transaction.

"Eighty percent of the deal was trying to understand and get on top of CDB's policy settings – like what were the requirements in respect of a mortgage? Would there be any Comsys guarantee, for example?

"It seems to me they have done a lot of transactions onshore PRC [People's Republic of China], but because it was cross-border and new parties were involved, there was a whole process to establish what the parameters needed to be with their policy settings in mind but adapting them to this transaction.

"Developing the thinking and finding novel ways of meeting CDB's policy parameters without disturbing industry norms was key, all while ensuring that the downstream parties bought into it."

Summarising the benefits of the deal, Nimmagadda says: "It enabled CDB to access the offshore market using Comsys as a vehicle and enabled Veling to access Chinese funding."

Rajagopal adds that Veling is "right now open for business with China".

PAL taps local and international financing

Philippine Airlines' senior management tells **Michael Allen** its financing plans for the 15 aircraft the carrier will take delivery of this year.

Philippine Airlines (PAL) will tap the local and international banking markets to finance its incoming aircraft, according to the carrier's senior management.

In an interview in Singapore during the air show week, Joseph Brian Tan, vice-president corporate finance and aircraft asset management, said that local Philippine banks were getting more interested in aviation finance, providing commercial loan facilities and finance leases. In 2013, PAL financed eight aircraft using local banks.

In the international financing market, PAL is getting "very good deals" from commercial banks, says Tan. Although the carrier tapped the Japanese operating lease with call option (Jolco) market for two aircraft in 2016, Tan says that commercial bank financing is now more attractive because it is simpler.

"So if there are very good deals from commercial banks, we'd rather go for that than Jolcos, because Jolcos are quite inflexible, though it does give 100% financing," he adds.

The capital markets are less attractive to PAL, the carrier's president and chief operating officer Jaime J Bautista says. He adds that "bonds are quite complicated".

This year, PAL is taking delivery of 15 aircraft: four Airbus A350s, six A321neos and five Bombardier Q400s. In 2019, it is scheduled to take delivery of two more A350s and new-generation Bombardier aircraft. Between 2019 and 2024, it has orders for 15 more A321neos.

"So if there are very good deals from commercial banks, we'd rather go for that than Jolcos, because Jolcos are quite inflexible, though it does give 100% financing."

Joseph Brian Tan, vice-president corporate finance and aircraft asset management, Philippine Airlines

Foreign investor

Airfinance Journal reported in August 2017 that PAL had confirmed in a regulatory filing that it was in strategic talks with a foreign investor.

PAL has been in talks with a foreign investor for almost one year now, says Bautista. He declines to name the investor or give any details about it, citing a confidentiality agreement. He says only that the discussions are "ongoing and still active given the favourable nature of the Philippine economy and attractiveness to foreign investors".

He adds he is "reluctant to put a timeframe" on the investment.

The filing came after media reports that the carrier is seeking a strategic partner to take up to 40% of the airline.

Routes

Traditionally a point-to-point carrier, PAL is putting increasing focus on connecting traffic to increase profitability. "Before, we focused on point-to-point, but now we wanted to be a network carrier, so we can carry passengers to other cities, to Manila to other destinations," says Bautista.

He adds that PAL will continue to have point-to-point traffic, but that this connecting traffic will "improve our load factor and that would mean more revenue for us". Some of PAL's narrowbodies will contribute to this connecting traffic.

"For example, we operate A321s from Kuala Lumpur to Manila. Passengers from Kuala Lumpur on the A321s can connect our flight to the US on our 777. Same with passengers coming from Singapore, Jakarta, Bali and Vietnam," says Bautista.

Congestion at Manila's airport means that very limited slots are available. PAL is even having difficulty with additional flights during the daytime.

"What we have done is we have moved operations of smaller airplanes from Manila to Clark and Cebu, and used the slots to operate bigger airplanes, so we can carry more passengers," says Bautista.

He adds: "Of course, the yields on the flights out of Clark and Cebu are quite lower than out of Manila. We cannot just increase the yields in Manila because there is competition."

The Clark operation initially started with two domestic destinations in December 2016. PAL grew this to 12 by the end of 2017.

"We had transferred the turboprop operations out of Manila to Clark, so that the slots... can be used for profitable jet operations. The operations in Clark are quite promising. In fact, we have increased frequency on some sectors and the loads are quite encouraging," says Bautista.

He admits that low-cost carriers are getting a "good share of the domestic market", but says PAL welcomes competition "not only in domestic but international".

Bautista adds: "Competition makes us more creative, more flexible and it makes us always aware of what's happening in the market... For us to be able to really compete, we need also to manage our costs and see to it that our costs are controlled and that we spend only for important expenses."

Long-haul growth

Since the Philippines' Category 1 status was restored in 2014, PAL has been able to expand its long-haul network and fly new types of aircraft on those routes.

Bautista recalls when PAL took delivery of a Boeing 777 in 2008. After the January 2008 FAA downgrade, his airline could not fly the aircraft to the US. PAL served Australia and Japan routes with that widebody until the Category 1 restoration.

Now, PAL can ply US routes. Bautista is looking forward to launching a non-stop Manila to New York JFK flight when PAL starts taking delivery of its six A350s this summer. He is also considering flights to Chicago, Seattle and Texas.

"Competition makes us more creative, more flexible and it makes us always aware of what's happening in the market... For us to be able to really compete, we need also to manage our costs and see to it that our costs are controlled."

Jaime J Bautista, president and chief operating officer, Philippine Airlines

PAL will fly its A321neos long haul on six- to eight-hour segments to India and Australia, where the carrier is considering Brisbane as a non-stop destination.

"Right now, we operate from Brisbane via Darwin because we are operating an A320 which doesn't have the range to fly non-stop. With the A321neo, we can fly non-stop. We are also looking at the possibility of operating the A321 in Melbourne. Right now, we operate four times a week to Melbourne with the A330, but with the A321neo we can make it a daily frequency, one flight a day," he says.

Bautista adds: "I think next year we will continue to expand. We are taking delivery of new airplanes so we will have more flights; we will fly to more destinations. We are looking at more charters from China to other cities in the Philippines.

"We would like to take advantage of the growing Chinese market. We expect that the Chinese will be the number one tourist group in the Philippines. With more flights to China, we should be able to make China a number one source of tourists to the Philippines, so we will fly to more destinations in China."

PAL's interest in Chinese tourists has not extended so far to the Chinese leasing market. "In the past, I met a few lessors from China. We have not had serious discussions," he says, though he adds that he is "open to discussions with them" and met some at a conference in Taiwan last October.

Financials

Bautista says that year-on-year 2016 versus 2017, PAL's yields have dropped by about 3%, while its revenue increased by about 7% because of the introduction of additional capacity.

"Our load factor actually has increased by more than 2% compared with 2016. However, our operating expenses have increased and the price of fuel has gone up," he says. "We were not able to pass on to the passengers this additional cost of operations. This is the reason for not performing well financially."

PAL's passenger load factors on some domestic routes are "not that good", admits Bautista. "We wanted to really get a good share of the Philippine market that we used to dominate. This is the reason the overall load factor in the domestic is quite low," he says.

"The international market is very seasonal also," he adds, saying that load factors are "not that good" especially during the September to November period and during February.

"Admittedly, we have this not very high load factor but, in 2018, we are expecting that this will improve," he says.

Fuel and currency concerns

Bautista says that, although the Philippine peso has depreciated against the US dollar in the past year, it is not that significant for PAL because its exposure is more to "third currencies" against the US dollar because it has a "high proportion of costs in US dollar such as fuel, maintenance and leases".

He adds: "Our exposure is really more about how Japanese yen, Hong Kong dollars, Australian dollars, Canadian dollars are doing against the US dollar."

Bautista says he does not expect the price of fuel to increase significantly "and there is a possibility that prices may in fact ease". He adds: "We have also entered into some insurance-type hedging to protect the price of fuel if there is unexpected spikes."

Asked whether fellow Asian carrier Cathay Pacific's issues with fuel hedging have impacted PAL's decision-making on fuel, Bautista says that because PAL's fuel hedging product is an "insurance type", it avoids the pitfall that Cathay fell into.

He adds: "In hedging, you may lose money if the price of fuel goes down. Ours is more of like paying a premium, so if the price of fuel goes up we are covered. It's like buying insurance."

Sale-and-leaseback terms 'are being eroded'

Toby Bright, chief executive officer of Jackson Square Aviation, waxes lyrical with **Jack Dutton** about how airline-pricing power is changing and a potential order from the San Francisco-based lessor.

Toby Bright, president and chief executive officer of Jackson Square Aviation (JSA), reminisces about the halcyon days of 2010, when there was less pressure on the sale-and-leaseback market and some of the larger players were not yet in the business.

"When we started this company in 2010, all the legacy lessors were out of the sale-leaseback business," he tells *Airfinance Journal*. "GECAS had just been restructured and was worried about its orderbook. ILFC was restructuring, but Hazy [Steven Udvar-Házy, founder of Air Lease Corporation] hadn't quite got started yet. He came in later in 2010 or 2011, but we were seeing him in the sale-and-leaseback market. CIT was in bankruptcy; ACG wasn't doing sale and leasebacks."

With JSA starting around the same time as Avolon, Bright says the two companies pretty much had the sale-and-leaseback market to themselves.

"I dream of those days; those were great days, to do what we were able to do with the airlines in 2010, 2011, 2012. Gradually, the legacy lessors sorted out their orderbooks, their funding and got back into the sale-leaseback market, and, of course, since then, another 100 leasing companies have joined in from China and elsewhere," adds Bright.

Unlike Avolon, JSA is not set on becoming one of the world's largest

"When we started this company in 2010, all the legacy lessors were out of the sale-leaseback business."

Toby Bright, president and chief executive officer, Jackson Square Aviation

leasing companies. "We want to be at about 200 airplanes by 2020," says Bright. "We're not trying to become the biggest; we just want to run a solid business and generate good returns for our shareholders."

JSA owns 149 aircraft and has 19 aircraft arriving over the next couple of years, as of 1 February 2018. It has a further two managed aircraft, taking its committed fleet to 170 overall. It has 48 airline customers based in 26 countries.

What has stopped JSA from growing at a quicker rate is the company's discipline of maintaining a young fleet with long lease terms attached. At just over three years old on average, it has one of the youngest fleets in the industry. To retain that youthfulness, the lessor is selling aircraft at almost half the rate it is originating them. It intends to add between 30 and 40 aircraft this year but also sell about 15.

"It's been like that the last two or three years," says Bright. "Between when we started the company in 2010 and when we sold it to Mitsubishi UFJ Lease & Finance (MUL) in 2013, we didn't do a lot of sales in that period; we were just growing. But since MUL purchased us, we've been focused on selling to reduce the risk in the fleet and also to show regains."

Bright also notes it has been a good market to sell aircraft over the past few years, and that he sees his company as a business that focuses on customer relationships. Before starting JSA, the management team was at Pegasus Aviation, a California-based lessor sold to AWAS in 2007. Bright was previously at Boeing for 28 years, enabling him to establish many airline relationships.

Before the turn of the year, Bright saw aircraft leasing as a relationship business. "Last year, the business we won was almost entirely repeat business. We were able to go back to customers we had worked with previously and add a few more airplanes because it came down to being a reliable partner and someone they knew they could count on to execute deals."

Only two months into 2018, however, Bright is wondering if those relationships will help the company as much this year. "It's fiercely competitive out there and there's so many products for airlines to choose from, so I'd like to think that relationships still matter but we have to prove that to ourselves again this year."

Unlike most lessors, the company has acquired almost all its aircraft through sale and leasebacks, aside from some aircraft bought in the secondary market from other lessors.

Potential order

Although JSA has never placed an order for new aircraft, Bright says the prospect of one looks more likely as the sale-and-leaseback market heats up.

"Up until this year, we hadn't seen the deals we thought would work for us compared to what we were seeing in the sale-and-leaseback market. So far, we have not ordered aircraft, but I think sooner or later this company will probably order aircraft and it will make sense for us."

One of Bright's main reservations about new orders is how long aircraft take to be delivered. "The lead times that are involved these days, ordering now for deliveries in 2023… it's hard to make a case for that. Right now, it feels like we're at the top of the market, which also tells me that it's not a good time to buy airplanes. We should take advantage of downturns to purchase aircraft."

If the lessor was to make an order, it would be for narrowbodies. Bright does not outline the number of aircraft or timeframe for such an order, instead saying it depends on the attractiveness of the deal. The lessor's fleet is roughly split 50-50 between Boeing and Airbus aircraft, so Bright says an order would be from one of the big two original equipment manufacturers.

"I think the first order for us would be a moderate order; it wouldn't be a gigantic order of anything. There's a lot of work to be done internally with our shareholders to make a case for ordering aircraft but I believe that eventually we will decide that makes sense."

"A year or two years ago, we were bidding on some widebodies from one of our customers in the Middle East. The guidance we got from them was: 'Guys, you're not doing too bad – you're number 42 of 80 bidders.

Toby Bright, president and chief executive officer, Jackson Square Aviation

JSA favours sale and leasebacks for a number of reasons. "We know what we're getting and it's near-term business. We know the airline needs the airplane, as they've ordered it and they intend to take it. We also know the pricing of the airplane and the market conditions, so it's a much less risky way to do business than worrying about airplanes out several years in the future."

On top of that, a lessor ordering an aircraft has to deal with pricing escalation, predelivery payments and an often-unknown future market for the aircraft.

But with lease rates at record lows, how does JSA make the economics of sale and leasebacks work? "We have a low cost of funding from various sources and we rely on that," says Bright.

He adds: "We also do business with a wide range of credits. We do some deals with airlines like British Airways, Delta or American [with] lower margins, but then, on the other end of the credit scale, you do deals with airlines with weaker credits, but you get paid for that by taking the credit risk."

JSA was one of the first lessors to acquire widebodies in the sale-and-leaseback market, at a time when many lessors were focused on narrowbodies. Bright says the lessor has about 27% of its fleet value in widebodies, but can have up to 35% if required. JSA also differentiates itself from some lessors by providing financing for predelivery payments.

"In the past, we've been able to build a portfolio that gives us the kind of gains we are looking for, but it's got tougher every single year. I jokingly say that every year since 2010, I wish I could do the deals that I did last year. The business has got tougher every single year for eight years."

'Ferocious' competition

Bright describes sale-and-leaseback competition as "ferocious". He shares an anecdote with *Airfinance Journal* about one of the airline's Middle Eastern customers: "A year or two years ago, we were bidding on some widebodies from one of our customers in the Middle East. The guidance we got from them was: 'Guys, you're not doing too bad – you're number 42 of 80 bidders'. We still laugh about that but it's true that there is a lot of competition."

That said, recently he has observed airlines limiting competition on sale-and-leaseback request for proposals. "It's a lot of work for them to evaluate 40, 50, 80 bids, so recently we've seen airlines go out to a smaller group, but the competition is still ferocious and they know they can get a good deal from 10 or 12 bidders, instead of 40."

The competition seems to be industry wide. During the week of the 20th Annual Global Airfinance Conference in Dublin in January, Bright met with a major US airline that had bids for narrowbodies below 0.6 lease rate factors. Bright has also seen a plethora of weaker-credit airlines around the world attract very aggressive offers.

"What concerns me is that it's not just lease rate factors that are being negotiated away; we're seeing pressure on other contract terms, too. So terms we've always held firm in our lease documents are now being eroded away in negotiations because the airlines have the power to do that.

"Those things worry me more than lease rate factors. I believe this is a cyclical market. I believe the market will change and lease rate factors will come back up at some point. But I worry about all these other contract issues, because once you give those away, they're very hard to get back with your customers."

Bright is experiencing airlines that never previously requested half-life return conditions now ask for them. Before, only the major airlines would demand half-life return conditions.

"There's all kinds of contract terms that get whittled away when there's this much competition. Lease terms, for example, tend to be getting shorter. In 2010 and 2011, most of the deals we were doing were 10- and 12-year terms and now most of our deals are eight years and we get a lot of requests for six-year deals, which, so far, we haven't really done."

Although there have been some examples of airlines taking longer leases, such as Gulf Air's Boeing 787s from DAE Capital and Saudia leasing A330s from IAFC for 15 years in 2016, Bright has seen few airlines leasing aircraft for longer terms.

Financing strategy

The majority of JSA's financing comes from its parent, MUL Group. In 2013, when MUL first purchased JSA, it provided 100% of the financing for the lessor. But for the past few years, JSA has been financing about six aircraft a year with commercial banks, both Asian and European.

"We're sitting on a lot of cash right now because of our private placement financing," says Bright. "So we've been telling the banks that in the second half of the year we'll be out talking to them again."

The lessor also uses financing from MUFG, the owner of MUL. MUFG and Citi were the placement agents on the $300 million private placement the lessor closed in August 2017. The deal was split between two tranches, which are seven and 10 years in tenor. It was the San Francisco-based lessor's first foray into the private placement market.

Despite increasing competition, JSA had a busy second half of 2017 in the sale-and-leaseback market. In July 2017, it delivered one 787-8 on operating lease to Ethiopian Airlines. In October, it closed a predelivery payment facility with Aeromexico for five new Boeing 737 Max 8s and delivered one A321 on sale and leaseback to Frontier Airlines. Over the second half of 2017, it also closed sale and leasebacks with airlines including Go Air, Lion Air and Sky Angkor Airlines in Cambodia.

"We're sitting on a lot of cash right now because of our private placement financing."

Toby Bright, president and chief executive officer, Jackson Square Aviation

So far, the beginning of this year has been slightly less active, but Bright says he has completed a deal with an Indian carrier, after the signing of a letter of intent last year. JSA also closed a sale and leaseback for three A320neos delivered to Scandinavian Airlines System at the beginning of February.

Selling aircraft down

JSA is not looking at the asset-backed securitisation (ABS) market to sell off some of the older aircraft in its fleet. "We've had some discussions about it, but right now we're not looking at that. If you look at the age and quality of our fleet, we don't think that works in the ABS market, so it's not a consideration for us at the moment."

However, Bright has taken advantage of the buoyant aircraft trading market among lessors and airlines to sell down some of the lessor's higher-risk aircraft and older equipment. JSA has traded portfolios with some of the established lessors, as well as start-ups.

Although narrowbodies are proving very liquid in today's market, widebodies are harder to transition. To avoid any risk associated with finding a new lessee, JSA usually tries to sell widebodies before their lease terms are up.

"We did some 777 deals with Emirates and Air France back in 2011. They were very attractive deals for us and these were long-term, 12-year leases," says Bright. "We're focused on selling those down right now and we do have a couple of LOIs [letters of intent] on some of these widebodies. We know how to transition airplanes. We know that it can be expensive, so our preference is to sell the airplanes down before the lease term's out."

Although there have been some concerns in the market about the influx of A330s and 777s coming off lease in the coming years, some lessors seem unfazed. For example, Aengus Kelly, chief executive officer of AerCap, said in an on-stage interview with *Airfinance Journal* in January that the Irish lessor transitions a widebody aircraft every three days.

Bright thinks market concern about placing widebodies is not all rational, because competitors such as AerCap are finding homes for the aircraft with new lessees.

He says: "I understand that old Air Berlin airplanes got remarketed and this is working the way it's supposed to where airplanes go onto a second lessee somewhere. I haven't heard any horror stories about widebody transitions but I do see a lot of hand-wringing about them."

Bright believes any full-service leasing company should be prepared to transition all its aircraft to other lessees, whether narrowbody or widebody.

"You can reduce your risk by selling down airplanes, but the company needs to have the expertise and be prepared to transition airplanes when it needs to. So yes, we like to avoid transitioning, particularly widebodies… but if it came down to it, I think we have expertise to do that."

Welcome distraction

Operating lessors were kept busy in 2017 when they had to transition a lot of aircraft that were placed with airlines which went bankrupt.

These included Vim Airlines, Monarch Airlines and Air Berlin. Bright says that he sees the cases of Air Berlin and Monarch as success stories for Jackson Square Aviation.

"Air Berlin was one of our very first customers and we at one point had seven airplanes there," he says. "But we saw that they were a weaker customer and we had moved all our airplanes out of Air Berlin before they went under and they helped us. We worked with them closely and I've known those guys since my days at Boeing. When they went under we had already transitioned our airplanes."

JSA also had aircraft at Monarch, which it sold within a few months of the UK airline going bankrupt in October 2017. Some market observers believe the bankruptcies of Monarch and Air Berlin marked a new round of European airline consolidation.

Bright anticipates there to be further consolidation in 2018 in the leasing market. With market sources telling *Airfinance Journal* that Intrepid Aviation and Sky Leasing are on the block, the leasing industry may well look different this time next year.

Bright believes both businesses will trade in the coming year. Although interest rate rises may put such deals at risk, he thinks there is enough liquidity available chasing assets.

Although he will not comment on rumours of General Electric and HNA divesting from their leasing subsidiaries, Bright welcomes them.

"We like seeing the large lessors distracted by trades and selling their company," he says. "I don't wish this on anybody or my friends in the industry, but we're okay with these guys being distracted on other things as it gives us more chance to win some competitive business."

Loomis, Sayles: ABS appraisals **getting more aggressive**

Keith Allman, vice-president, senior securitised asset analyst at investment company Loomis, Sayles & Company, speaks to **Jack Dutton** about why equity investors often know more about the price of assets and why the configuration of an aircraft could make or break an investment.

"In general, the airline industry is opaque. People love to keep the lease rate factors quiet," muses Keith Allman, vice-president, senior securitised asset analyst at investment company Loomis, Sayles & Company.

Allman joined Loomis in 2016 and has worked in the investment industry for 15 years. Previously, he was a director at Deutsche Bank, where he was a lead banker for transportation assets, including aviation asset-backed securitisation (ABS) transactions. He now works as Loomis's primary aviation ABS analyst with more than $650 million invested in aircraft ABS debt and equity.

Debt investors, says Allman, do not have the same access to the pricing information as equity investors. "You sign an NDA [non-disclosure agreement] as an equity investor and you'll usually get lease rates. If you've invested in equity, which Loomis has done in the past, we are privy then to when we sell aircraft: we know what the market pricing is, so we can check it against that."

Allman says that larger investors, which play in multiple levels of the asset class such as equity through debt, have an advantage because they have access to asset and lease pricing. The lack of transparency may cause issues to an investor that solely looks at debt.

"That being said, there are ways on the debt side when I do data analysis – there are things you can tease out of it. What they usually provide is aggregated lease rates and there are ways to figure out what the individual aircraft are priced at. They have some file formats for the analysis and you can parse them in certain ways and figure things out," he says.

Appraisal disparity

On the subject of values, what is more interesting to Allman is the variance seen on appraisal reports. "I've been tracking appraisal reports since 2012-13 and historically what you found is that you usually have some pretty good appraisers – I call them mid-range appraisers," he says.

"I think 2017 is the first year that we've seen issuers instead of choosing one aggressive appraiser out of three, you're starting to see two out of three, and that changes the system entirely."

Keith Allman, vice-president, senior securitised asset analyst, Loomis, Sayles & Company

"If you look at the value of an eight-year-old [Airbus] A320 and you track that value – five years back, four years back, three years back... two years back, etc – there's some guys who are pretty consistent and show slight depreciation rates and it makes perfect sense," he adds.

"But there are other guys who are all over the place – they're at 20% to 30% higher than the mid-range guys. In ABS deals, what you've seen is issuers selecting two mid-guys and one crazy guy and they are what I call the throwaway."

Allman says the reason this method worked well in the past was because the rating agency kicked out the throwaway value. Investors did not care about it because it did not impact the leverage required by the issuer.

He adds: "I think 2017 is the first year that we've seen issuers instead of choosing one aggressive appraiser out of three, you're starting to see two out of three, and that changes the system entirely."

Allman believes the reason why more aggressive appraisers are being used by issuers is because aircraft prices are going up, meaning issuers require more leverage.

"When you use two higher guys, the method that they have gets a little technical on this end – the ratings agencies usually restrain the leverage by least of mean and median. When you have one aggressive guy, the median is the constraint. I don't know if they've actually figured this out but the real effect is by switching to two aggressive, you remove the median constraint you apply to the average and it goes up and what that lets you do is get more leverage.

"I think that's the way they're trying to make the economics work – you can see there's a lot of capital flowing around and prices have gone up. To get the same return in a market that's this frothy, you need to get more leverage."

He adds that Loomis has been very selective in the deals it invests in, trying to figure out "the right deals with the right appraisals". The company has an advantage because it has invested across

> In a few years, when there's a downturn, you are going to see stress on portfolios, when some of these guys see triggers trip, they're going to sell their bonds immediately and back away from aircraft. I think the liquidity market can then change.

Keith Allman, vice-president, senior securitised asset analyst, Loomis, Sayles & Company

different asset classes and financial products. It also has the valuations data from acting as an equity investor.

Loomis has invested across different tranches from more of the senior tranches that are more A all the way through equity. Allman would not be drawn to give too much detail on which deals his firm has invested in.

Liquidity wave

Last year was strong for the ABS market and this looks set to continue in 2018, with ABS liquidity increasing in both the primary and secondary market.

"Two years ago, you had eight-to-10 core investors, now you'd have 30 to 40 in a primary issuance," says Allman. "In the secondary market, you're seeing more trading, particularly in the As and Bs. The Cs don't trade as much. The E-notes are still pretty illiquid. But you're now seeing Trace [Trade Reporting and Compliance Engine] reporting on a lot of deals, so you can publically see those trades which is great."

Although new capital is always welcomed, a lot of the new money in these transactions has not been exposed to an economic down cycle. Allman says that the market may see some capital flight if liquidity starts to dry up. Although he believes some of the new investors have begun fully to understand the assets, he does not believe they all have the experience and knowhow of those 8-to-10 long-term investors.

"In a few years, when there's a downturn, you are going to see stress on portfolios," he says. "When some of these guys see triggers trip, they're going to sell their bonds immediately and back away from aircraft. I think the liquidity market can then change."

Although Allman has invested in other esoteric ABS asset classes outside aircraft, including railcar, marine shipping containers, equipment, rental fleet and timeshare, he believes that aircraft is one of the more complex asset classes to invest in.

"I think you have great liquidity and a great bullish market right now and these assets are a little bit more streamlined in the past, but they're still very complex. And some people will just throw their hands up and say 'okay, this provided great yield at a time when yields were tightening and now I'm out'."

Allman does not think that many of these investors will be investing in aircraft for the long run because doing so successfully requires fully understanding each asset.

"We already do the asset-by-asset analysis," he says. "I think some guys are just playing the game: 'yields are coming down, aircraft are still good and they're great collateral, I'm going to go buy it.' Those are the guys that I think back out, so I think liquidity could change as the market hits a downturn."

Knowing the metal

Those willing to invest in aircraft for the long term have a lot to consider. Allman says that the configuration of an asset can be vital when it comes to making an investment decision.

"I'd be very worried about a highly customised three-class Boeing 777-300ER versus a two-class configuration that requires very little reconfiguration, because that can be a massive difference in value. So, we do get very specific on the actual configuration of the aircraft, what components are in there."

He says that Loomis is not afraid of investing in widebody aircraft, providing it is on lease to the right lessee and has the right lease agreement. However, he cautions that clarity is required – which could be on anything from lease agreements to return conditions – before considering investing in widebodies.

Although Allman warms to turboprops, Loomis has not done much investing in regional jets. He is sceptical about the ABS deals where turboprops are the only asset class in the collateral pool.

"They're a different business model that can be financed well, but I don't know if the ABS is the right tool for a turboprop-only pool," he says. "Maybe you could sprinkle them into another deal, but they are a lot of work; they're much smaller aircraft and they require just as much work to do the leases, but you have two or three times as many.

"And so you have to be very efficient. There are some guys out there; Elix is pretty good, but they also naturally work in restructuring markets."

However, there are 16 Bombardier Q200s due to come off lease by the end of September in the Elix ABS transaction. There are some concerns that those aircraft may not be placed with new lessees in good time, if the US airline decides not to renew leases.

Allman says that Loomis did not invest into that transaction, but adds: "If you had invested in that deal, you should definitely have included in enough on-the-ground time and reduction in lease rates to account for the fact for a marketing department that will have to do a lot of work in a short amount of time. The lessor will have to do quite a lot of work in eight months.

"So, the theory behind that is maybe they are not going to be able to place them fast so they will have to go down on lease rates. If you've baked that into your assumptions then you're probably okay," he says.

In early 2016, the ABS markets were in really poor shape and deals did not syndicate out to every investor. It was not until the end of 2016/beginning of 2017 that there were more broadly syndicated deals, with entrants that did not typically play in aviation-joining transactions.

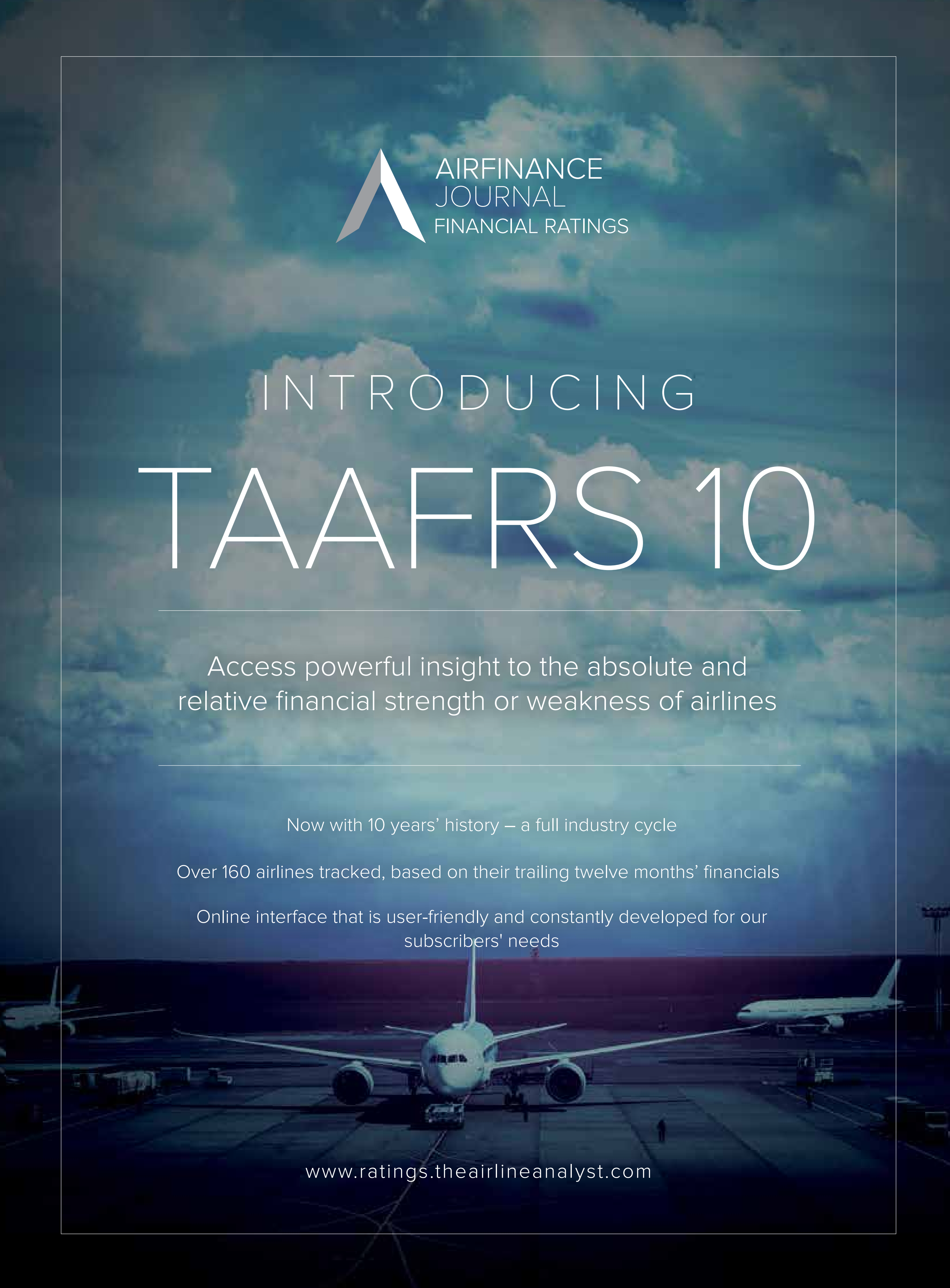
"Two years ago exactly, the markets were completely locked up and, at that time, you had Asset 2016-1 price really wide. People were afraid. You had A bonds north of 5%. I think there is a short memory as to where we were," he says.

Some of the new investors in the aviation space include insurance companies, which, according to Allman, are much more in need of placing to match their liabilities than many investment firms. He feels that insurance companies are making greater concessions than asset managers are and that could be driving some of the bullish market right now.

Although the industry outlook is rosy, Allman warns: "I think some people will be shocked when they see how things can change in a bad market."

> Two years ago exactly, the markets were completely locked up and, at that time, you had Asset 2016-1 price really wide. People were afraid. You had A bonds north of 5%.

Keith Allman, vice-president, senior securitised asset analyst, Loomis, Sayles & Company


AIRFINANCE
JOURNAL
FINANCIAL RATINGS
INTRODUCING
TAAFRS 10
Access powerful insight to the absolute and relative financial strength or weakness of airlines
Now with 10 years' history – a full industry cycle
Over 160 airlines tracked, based on their trailing twelve months' financials
Online interface that is user-friendly and constantly developed for our subscribers' needs
www.ratings.theairlineanalyst.com

Airbus backing will boost CSeries

Olivier Bonnassies speaks to seven appraisal firms about their outlook for aviation finance this year.

AFJ: Which aircraft type saw the greatest recovery in 2017?

Rob Morris, global head of consultancy, Ascend: Freighters, especially the 757, 767 and even the 747-400F/SF! But passenger 757s, 767s and 737 classics also saw upward movement due to demand for feedstock. Some vintages saw improvements close to 20%.

Douglas Kelly, senior vice-president, asset valuations, Avitas: The 767-300ER did very well due to a rebound in the cargo market. Amazon Air [formerly Amazon Prime Air] contracted to convert 40 767 passenger aircraft to freighters through ATSG and Atlas Air for delivery in 2017 through 2018. This demand has kept passenger and freighter values firm. Now, Boeing is being pressured to restart production of the passenger 767 300ER and increase production of the freighter.

Gueric Dechavanne, vice-president, Collateral Verifications: Used A320s saw a great deal of value recovery in 2017.

Mike Yeomans, head analyst, commercial aircraft and leasing, IBA: The current-generation narrowbodies have been performing strongly but I wouldn't call that a recovery. In the widebody market, I think the 787-9 is performing well in terms of values at the moment and we have seen some strong sale–and-leaseback pricing, probably better than our earlier expectations of this aircraft. Older 767-300ERs are sought after for passenger-to-freighter [P2F] applications if they are suitable.

Olga Razzhivina, senior Istat appraiser, Oriel: There were no huge upward value movements in 2017. There is an increased demand for converted freighters with 767-300ERs benefiting the most.

Which aircraft type was the most impacted in 2017?

Morris: 777-200ER (Rolls-Royce-powered), A340-500/-600 (yet again) and the Embraer ERJ family. All declined in the 30% to 40% region.

Kelly: The small regional jets such as the Bombardier CRJ100/200s and ERJ135/ERJ145s. Values of the small regional jets continued their downward slide as the growing lease expirations contributed to the oversupply of these aircraft. While there used to be a significant premium for the ERJ145LR over the -ER model, now values have converged so that there is little difference between the models. Values for the A380s are beginning to slide as owners struggle to find homes for the 10-year-old A380s coming off lease from Singapore Airlines. The secondary market potential for this large aircraft is looking bleak.

Dechavanne: 777-200s and older A330s continued to be negatively impacted by the market environment.

Yeomans: Mid-life A330-200s – lease rates are poor, storage and availability are high. Air Berlin and [Russian carrier] Vim Airlines failures have not helped matters. Some aircraft have been overhanging the market for a while. There is compression in the values and lease rates across vintages. Late noughties aircraft, such as those between 2008/2009, are not much better than a 2000-built aircraft. As for the Boeing 777-200ER – again, the Vim failure has not helped. Storage levels are increasing; values are declining.

Stuart Rubin, principal, ICF: Perhaps a notable point has been the performance of the 777-300ER, which now appears to have raised market concerns, amplified by recently announced production cuts, along with continuing and growing concern over the A330-200 and 777-200ER types. Of greater concern, however, is the performance of the youthful Airbus A380 as early lease returns ensue, and the very large aircraft sector in general.

Razzhivina: The 777-300ER was the biggest disappointment to its investors. The issue is, the few returns we have seen are only the beginning: the production ramp-up of the type suggests there is a far bigger wave of returns on its way. The A380 is also under strong pressure.

Which aircraft types are in oversupply and harder to place?

Morris: Larger widebodies, especially out of production or soon-to-be out of production. From the popular types, the 777-200ER sticks out the most. Narrowbodies are generally better placed, with strength of overall demand supporting placements of aircraft including those which exited Monarch Airlines and Air Berlin late last year.

Kelly: Small regional jets [see above]. Most of the older out-of-production widebody types.

Rubin: A common concern for investors is that of aircraft oversupply. In general terms, however, global load factors are at near historic highs, orderbooks are strong, and aircraft storage and retirement rates at a relatively low level. Largely, OEM [original equipment manufacturer] production is aligned to demand growth, which remains strong, particularly in emerging markets. That said, as noted by ICF for the widebody sector, large and very large aircraft types in particular are proving difficult to place, while older current-generation narrowbodies are proving more problematic to remarket at acceptable lease rates.

Dechavanne: ERJ145s and CRJ200s, A319s, A330-200s, A340s, 747s and 777-200ERs.

Yeomans: There is still some oversupply in the ATR72-500 market; however, IBA predicts this market will strengthen through 2018. A330-200 and 777-200/-200ER markets are oversupplied. All 737-300, MD82, 747-400, ERJ145, CRJ200 aircraft.

Oliver Stuart-Menteh, managing director, Fintech Aviation Services: The A319 and 737-700 market is currently oversupplied, though with the release of the -700 freighter programme, there will be renewed demand for a select number of aircraft. Aircraft can be purchased or leased at a price but often the rates on offer will not satisfy the financial requirements of the owner and transactions become stalled. Widebody aircraft such as the A380, 777-200 and the 50-seat regional jets such as the ERJ145 are also extremely difficult to place.

Razzhivina: Practically anything with two aisles in it. Even sales of new orders have slowed down significantly.

Is the outlook for the CSeries more bullish now the Airbus agreement is in place?

Morris: In a word yes. Marketing and in-service support from Airbus makes the aircraft a more attractive proposition than previously, and witness recent commitment conversion to firm orders which supports this.

Rubin: If it passes regulatory muster, ICF believes the fortunes of the CSeries programme have received a real boost with Airbus's announcement that it will take a majority stake in the programme. Operators, financiers and other investors will have gained confidence in the financial underpinnings of the programme, and Bombardier will now have access to Airbus's customer base and global supplier support network, while gaining production economies of scale. While events have yet to play out fully, it appears that Bombardier will now be able to avoid punitive tariffs applied by the US Department of Commerce by manufacturing the CSeries at Airbus's facility in Mobile, Alabama.

Yeomans: The CSeries programme should benefit from Airbus's backing. The technical ability of the aircraft is not in question. The longevity of the programme, the US trade dispute and whether it is competing in the right capacity segment are the key questions. In IBA's view, the CSeries can deliver the right operating costs and there is sufficient market demand for this aircraft. It needs a broader operator base to give some confidence to investors and Airbus could really help in this regard. The next few weeks/months will be key as we see how the dispute with the US plays out.

Stuart-Menteh: The support of Airbus will provide renewed confidence to the marketplace; however, it should be remembered that the targeted market is relatively small compared with the 160- to 240-seat market. Demand for large-scale orders will arise primarily as a result of the phase out of older equipment rather than a dramatic expansion of the market. With a significant amount of potential demand located within the USA, minimising any trade tariffs will be a key driver to ensuring that the programme remains active.

Razzhivina: The Airbus involvement with the CSeries lends more financial credibility to the programme; however, it does not make sales that much easier. It is a standalone product and does not benefit from commonality with the A320 family, at least for now. The programme still needs another big order and a number of medium-size commitments (10 to 20 aircraft) to gain momentum.

Are we likely to see more order deferrals? If so, what type of airline is likely to defer?

Morris: If demand remains strong, there is no reason to expect an increased level of deferrals or cancellations. But if demand reduces significantly (albeit there are no indicators that this will happen), then of course deferrals will also likely increase. The airlines with the fastest-paced growth and taking the most deliveries on a monthly basis are the ones most likely to reshuffle their delivery schedule in the event of growth slowing down.

Kelly: Yes, expect to see more widebody deferrals since there seems to be too much supply in this market. We may also see some narrowbody deferrals if any airlines get into financial difficulty or there is a downturn in traffic. However, we are expecting 2018 to be a strong year for traffic growth as the world economy continues to climb higher.

Rubin: Operators of large widebody aircraft, such as Emirates Airline and Etihad Airways, may be expected to defer aircraft orders in a period of oversupply relative to demand. Prudent airlines such as Jetblue Airways seeking to reduce capital expenditure and improve return on investment following over-ambitious growth plans have, and are likely to continue to defer narrowbody orders in the near term. Softening yields and increasing costs may cause ambitious low-cost carrier [LCC] operators such as Norwegian Air Shuttle to defer both narrowbody and widebody aircraft to reduce operating costs and maintain liquidity. Given the overall orderbook trend towards the LCC sector, most deferrals are expected to emanate from this sector.

Dechavanne: Yes, I believe airlines with larger orderbooks will continue to take advantage of cheap lift from aircraft on existing leases by extending them and thereby deferring orders further out.

Yeomans: We are likely to see more widebody order deferrals from the Middle East carriers. Traffic growth has slowed and while capacity growth is being curbed to some extent, we have seen falling load factors for the Middle East carriers at the tail end of 2017. This points to carriers pushing back more deliveries.

Stuart-Menteh: The economic picture across the globe is imbalanced with revenue passenger kilometre growth rates varying considerably across the regions, and airlines are still adjusting forecasted capacity. The Middle East carriers have witnessed a significant slowdown. Availability of older aircraft being phased out of China, coupled with attractive lease rates, are proving attractive to US flag carriers who may have previously ordered from new.

Razzhivina: It appears that all kinds of airlines are deferring their orders. Sometimes it is to do with the mix of sizes and also with availability of cheap older aircraft which do not lack in reliability. As long as oil prices remain low, we are likely to see major airlines capitalising on the used aircraft availability.

Bees on **honey**

Michael Allen, who attended the Singapore air show in February, asks the market about the country's status as a leasing centre and the latest developments with HNA Group.

Hong Kong, the home of *Airfinance Journal's* Asia bureau, has been making considerable noise about its newly passed tax reforms for lessors domiciled in the Chinese special administrative region. One might expect the Singapore aviation finance market and government to be preparing a bold counter-offensive, but Singaporean market reaction to Hong Kong's move has been muted this air show week.

Many industry insiders feel that Hong Kong poses little threat to Singapore, which has a well-established aircraft finance and leasing community, offers attractive tax rates to lessors and is a better place to live for expats than crowded, expensive and polluted Hong Kong. Others argue Singapore's prowess as an aviation finance hub is deteriorating and the city has rested on its laurels for too long.

"I think the Hong Kong legislation will benefit those who already have plans to set up something there anyway and attract some Chinese lessors to have a base in Hong Kong. ICBC were never going to set something up in Singapore," says a Singapore-based banker, referring to the first deal completed under the new legislation on 20 December 2017 for a Boeing 787-9 to Asiana Airlines.

The banker notes one downside of moving operations into Hong Kong is that companies will be more subjected to Chinese government controls, including capital controls. While Singapore is an independent country, Hong Kong has a significant degree of autonomy but is still part of the Communist-run People's Republic of China (PRC).

> *"Hong Kong is much more of a free market jurisdiction. No government interference. Singapore has had a very strong dirigisme thing."*
>
> **Singapore-based** lawyer

A Singapore-based law firm partner says: "Hong Kong is much more of a free market jurisdiction. No government interference. Singapore has had a very strong dirigisme thing."

A second Singapore-based banker says Singapore is unlikely to lose much talent to Hong Kong (although one market source *Airfinance Journal* meets looks to move to Hong Kong for personal reasons).

"All the lessors with a presence in Singapore don't intend to go to Hong Kong as they already have a marketing presence in China," says the second banker, who adds: "I don't see a trend like everyone moving to Hong Kong. You see mostly Chinese lessors moving there: CDB Aviation is there; CALC is there; a few banks are there, but mostly funding the aviation business through their Hong Kong branches."

He reckons Singapore's position in Southeast Asia – close to airline companies such as Lion Group and Airasia Group that have made big aircraft orders – still gives it a competitive edge over Hong Kong as a place to do aviation finance business.

A law firm partner based in Hong Kong on a business trip to Singapore thinks the market should not even be drawing comparison between Singapore and Hong Kong, saying to do so is "a bit trite and meaningless".

The partner adds: "There are these stupid discussions about Hong Kong versus Singapore – it's the wrong conversation. Hong Kong doesn't care about Singapore; it cares about making sure Chinese capital and investment stays in China, and Hong Kong having a justification for keeping their tax regime separate from mainland China."

Another law firm partner, Singapore-based, agrees Hong Kong remains the most attractive choice for Chinese lessors.

"If you were sitting at management level or regulator level, why would you want your Chinese lessors decamping and investing in Ireland or Singapore while they can do it in what is effectively still the PRC?" he asks.

A second Singapore-based law firm partner has a more pessimistic outlook on the country, saying: "Singapore is basically regressing because they have not been active in entering into double tax treaties with other governments. They have lost steam in this respect."

Double taxation treaties, also known as double taxation agreements, are agreements between two countries that seek to eliminate the double taxation of income.

The partner says that Singapore's Economic Development Board is not committed to developing the aviation finance sector because "they have lots of other priorities", adding: "Aviation creates high-end jobs; it's not really employment generating for a larger segment of the population. If you look at it in terms of the wider economy and the stance the government's taking, it's more populist. They are not encouraging people coming into Singapore; there is a bit of backlash on that front."

Fierce competition

Sources in Singapore unanimously agree the market is witnessing especially fierce competition now. *Airfinance Journal* reported in May 2017 how lower and lower lease rate factors were unnerving lessors.

"Every time you hear someone has got a deal, it's like bees on honey – everyone wants a piece of it," says a Singapore-based banker.

Another source, who is monitoring the market for aircraft purchases, says: "If BOC Aviation issues an RFP [request for proposal] to sell aircraft, every man and his dog is going to be taking a look at it." He adds that his company typically needs to look at 20 to 30 transactions for every transaction it actually completes.

A Singapore-based partner says there is also a "huge amount of trading in the secondary market", and this can contribute further to making it an airlines' market.

"If you're trading aircraft with leases attached, you need the airlines' consent. They are being more aggressive in asking for their costs covered and negotiating transfer requirements under leases," he says.

The person adds: "The lessors are also suffering from intense competition in China. It is an airline market in China. Lessors are having to come up with more and more innovative cost savings structures to win these RFPs, being that onshore in Tianjin to offer savings to the airlines, be that offering rentals in different currencies like renminbi, they are really having to think about how to make themselves competitive."

A Singapore-based consultant says lessors seem to be moving away from smaller narrowbodies.

The person says the A321 is now an established and popular aircraft, whereas the A319 has seen less interest and there are uncertainties surrounding the A319neo programme. The source adds that major lessors have been trading out their smaller aircraft.

The consultant says that lease rate factors for new-generation aircraft such as the Neo and Max have fallen to extremely competitive levels.

A Singapore-based banker says the "experienced lessors" continue to sell leases and he would not be surprised if some of the more "experienced ones are looking into initial public offerings".

The banker says: "If you want to get out now, you can get out. If you want to get your capital gains now, it's a pretty good time to get your capital gains."

> *"Every time you hear someone has got a deal, it's like bees on honey – everyone wants a piece of it."*
>
> **Singapore-based** banker

He adds: "Rates are going up – so how will that impact financing costs? Libor is already 1.7. It used to be below one. There's so much liquidity going around, hence pricing is still going to be low. Lease rates are low. We are also starting to see, dangerously, loosening of covenants and terms and conditions."

HNA Group

Most sources also discussed the issues surrounding HNA Group, which is targeting a $16 billion asset sale because of a cash shortfall. Some of the company's affiliate airlines also delayed paying lease rentals last year.

"I cannot believe that the Chinese country will allow a big-scale collapse because of the ramifications of how many banks have exposure to them in terms of the systemic risk," says the first Singapore-based banker.

"I believe HNA is being told to sell assets to make sure there is no big-scale fall out. I do believe that the airline business part of it will survive. It will need that to blow over before the banks will start looking at lending to the airlines again.

"The only question mark is how many of the prized possessions were bought at high leverage? The question is: people know they need to sell. Are people going to give them a lowball number and does it cover the leverage that they have geared up to buy that company?"

A Singapore-based partner says: "Some people are just going ahead with deals with HNA-affiliated carriers on the basis the situation will solve itself, and others are being slightly reticent."

New Chinese lessors

Sources say they are seeing a divide among the new breed of Chinese lessors, between those with the ambition to expand rapidly and execute transactions in the international market, and those expanding more cautiously and sticking mostly to safer domestic deals.

"There's a lot of them that have a strong preference for China deals because, of course, they know China. Whilst there are many Chinese leasing companies, there aren't nearly as many who have the capability or the will to do the international stuff because they've got to get their country analysis right and there's still a bit of conservatism there I guess," says a Singapore-based law firm partner.

Another Singapore-based lawyer adds: "I think it's an element of cutting their teeth on what they know best. It does take time."

Another banking source says: "Those very focused on the domestic business are not the ones who have the ability or willingness to make connections outside the country. If you look at the management teams of these financial leasing companies in China, they are very conservative people. They have all worked for the parent company, so they are not going to jeopardise their own position within the organisation.

"They would rather continue to do business with Shandong or Shenzhen or some of these airlines compared to going international, which is perceived as a risk. I think those will continue to focus domestically and their business will be primarily finance leases. Some of these may make a loss for them, but I think it's easier to explain that than to lease to a foreign lessee, if one day they default."

He adds: "If there's a domestic default, you can ask your parent: 'Did you think Shandong is going to go down'? It's not putting their own personal position within the organisation at risk."

A banking source says there are not enough aircraft in the market for all-new Chinese lessors to grow as fast as they would like to.

He adds: "I'm not sure all of them will survive."

Getting the **right Spec**

Christian Kabbas, a senior at Fairfield University in Fairfield, Connecticut, looks at how ATA Spec 2500 will change the transfer of aircraft records.

Just as the Tower of Babel allegory chronicles humanity mired by divergent languages and left unable to communicate with one another, the process of transferring aircraft records has followed a similar path of incompatibility, resulting in onerous resources and costs to the aviation industry.

Growth gives way to movement

With tremendous growth in the past few decades, aviation has seen a rising trend in aircraft leasing as opposed to owning. According to the International Air Transport Association (Iata), about 37% of the world fleet was leased in 2015, compared with wholly owned in 1965. Boeing predicts an even split in the percentage of the world fleet owned versus leased by the end of the decade.

This changing ownership structure indicates increased movement throughout an aircraft's lifetime and, subsequently, elevates the importance of record keeping and data. With more and more transitions taking place, an aircraft's records need to be transferred from one operator to another through the owner.

Flawed system

Today, airlines use various maintenance and engineering systems to keep record of their fleet's operational and maintenance information. While these programmes traditionally work well within regions and for an airline's data collection purposes, their cross-functionality with other record systems is severely lacking, or non-existent altogether.

To bridge the gap between differing record systems, lessors traditionally appeal to the lowest common denominator, and require airlines to record aircraft data on paper. To complicate the situation further, 91% of these operator records are usually some mixture of scanned documents and physical paper. More importantly for operators, this obsolete record transfer process is expensive, estimated at $120,000 for each aircraft transition, not to mention time-consuming.

With 3,801 aircraft transitions a year and countless assets of which to keep record, a solution to the issue of data and record exchange is imperative, and ideally through a uniform, digital medium.

Enter the ATA Spec 2500

Aimed at mitigating issues of cost, complexity and risk with the current largely paper-based process, the ATA Spec 2500 is designed to standardise the interchange of aircraft records between relevant parties or systems worldwide. Compliant with the transfer guidance of the ICAO, Iata and AWG, the ATA Spec 2500 is designed to cater to all types of transferrable aircraft records, including data-heavy datasets, such as AD Status Reports, and basic records, such as a certificate of registration.

Previously, no standard on record formatting was available, rendering one system's output generally incompatible with another's input format. To solve this, the specification uses extensible markup language (XML), a text-based coding language known for its simplicity and usability, particularly when coding on the internet. This coding setup allows for the output and input of information to be saved using a specific naming convention and format, ensuring uniformity for both parties' data programmes.

It is all in the Crates

The Spec 2500 adopts the usage of a Crate, an XML file itself, to host many separate datasets inside, both full and partial, XML and non-XML. The notion of the Crate serves multiple purposes. First, it allows for the singular description of parent assets, along with the submitting company and operator information, ensuring high-level information remains unchanged.

Second, through the use of IDs, the Crate allows references in other XML records to be linked to individual content items, such as PDFs of the "dirty finger prints". Last, and in the interest of efficiency, the Crate also facilitates the implementation of digital signatures for future release.

The soft Crate is intended to carry information about one or more "top level assets", such as an aircraft, engine, or other major airframe components, such as an auxiliary power unit or landing gear. Further, soft Crates allow content items to be tied to these assets, including information such as: general status of the asset; status of regulator airworthiness directive implementation; status of original equipment manufacturer (OEM) service bulletins and modifications; installed parts lists; maintenance event last completed; next scheduled maintenance; damage history; and repair history.

Further, the breadth of the ATA Spec 2500 allows for the streamlined transmission of both complex and simple data. This can include records for one or more assets, full or partial datasets, as well as the potential to combine multiple Crates. Moreover, the complexity of the files can vary greatly from the standardised XML format for intricate records with multiple fields, to simple links to other documents.

How the industry benefits

The depth of the ATA Spec 2500's capabilities make it poised to become an industry standard for the exchange and transfer of digital aircraft records. This enhanced and efficient system for uniform, standard aircraft records aids both parties involved in an aircraft transfer. The sending party benefits by removing the need for resource allocation to manually extract information from technical systems, and the receiving party benefits by replacing a lengthy manual data entry process with an automated data validation and upload procedure.

Moreover, the specification has a use for stakeholders in nearly every record transfer situation, including operators who are buying or selling aircraft, lessors and lessees during the leasing process, and manufacturers during initial delivery. With a rapidly growing industry characterised by constant movement, the Spec 2500 fulfills a desperate market need for the simplification and standardisation of valuable record-keeping information.

GE Capital Aviation Services (GECAS) is one of the lessors involved in the ATA Spec 2500's maintenance by the Aircraft Transfer Records Working Group, a team comprised of airlines, aircraft servicers, OEMs and fellow lessors. The ATA Spec 2500 is now available to all ATA members via the e-Business Program website (**www.ATAeBiz.org**).

According to Anton Tams, senior vice-president and manager, GECAS, "moving to electronic records to support aircraft transitions will save the airline community more than $450 million of unnecessary cost annually". Tams is encouraging customers to adopt the ATA Spec 2500 effectively to improve aircraft transitions.

Additionally, the Spec 2500 is compliant with many existing digital record systems, meaning airlines will not have to abandon their existing programmes, resulting in administrative cost savings for both parties involved in a transfer. Digital record and M&E system providers began to go live with the ATA Spec 2500 from January 2018.

Chinese lessors opt for Jolcos

Airfinance Journal's annual Jol and Jolco survey found that the Boeing 787-9 was popular among financiers. Chinese lessors are warming to the Jolco because they can obtain a high percentage of financing and banks are often willing to lend higher LTVs on these transactions, write **Michael Allen** and **Mike Duff**.

The Japanese operating lease (Jol) and Japanese operating lease with call option (Jolco) markets remained robust in 2017.

Airfinance Journal has compiled a survey of Jol and Jolco transactions completed between 1 January 2017 and 31 December 2017 to give a snapshot of the most active players in those markets. The survey is based on submissions from companies active in the Jol and Jolco markets, as well as data already held by our powerful Deal Tracker product.

Deal Tracker recorded a total of 66 Jol transactions and 51 Jolcos in 2017, covering a total of 94 and 65 aircraft, respectively. More than 70% of the Jols were for Airbus A320- and Boeing 737NG-family aircraft, though the market also absorbed 24 widebodies. Narrowbodies were also popular for Jolcos, but notably the 787-9 came second in the ranking.

A number of A320neos, ATRs and Embraers were also successfully financed. The credit quality generally of lessees reflected Japanese investors' traditionally low threshold for lessee credit risk. Three Chinese leasing companies – CCB Financial Leasing, CMB Financial Leasing and China Aircraft Leasing (CALC) – also used Jolcos to fund operating leases to their airline clients.

"The main Chinese lessors are also using such products as a key funding source for their new acquisitions," says Thierry Pierson, managing director at Asset Brok'Air, adding that this gives them additional flexibility in their portfolio management.

Pierson's company, which established a permanent base in Japan last year, completed a Jolco transaction in 2017 for China Aircraft Leasing (CALC), a Hong Kong-based lessor with partial mainland Chinese ownership.

At *Airfinance Journal*'s 6th Annual Japan Airfinance Conference in April 2017, CALC's managing director, finance, Christian McCormick said the Jolco product has aided the growth of CALC's international fleet.

For its aircraft leased into China, CALC can obtain virtually 100% financing because the Chinese banks "look at CALC and the airlines as very high-quality corporate risk" and are willing to lend "very high" loan-to-values (LTVs) to CALC, to achieve 100% financing for the internationally leased aircraft CALC needs to find equity, he said.

"One great source of equity is Jolco equity," said McCormick, adding: "For us, it tops up whatever the banks would not be prepared to do, so we do achieve nearly 100% financing – sometimes 100% financing."

Robert Melson, a partner at K&L Gates, which came first among law firms in the survey, says: "In 2017, we continued to see new lessee credits enter the Jolco market to satisfy the increasing demand from Japanese equity investors for Jolco transactions.

"We also saw the use of more mezzanine/junior debt in Jolco transactions in 2017. We expect both trends to continue for 2018 based on the transactions for which we have received instructions from our clients."

Some new airline names include Jet2.com, a Leeds, England-based low-cost carrier that serves primarily European holiday destinations. The carrier is unlikely to be a household name for the Japanese travelling public or the small- and medium-sized enterprise investors in Jolcos, but our survey sees this 737 and 757 operator surpass established Jolco users KLM, SAS, Lufthansa and Emirates to take the position of top lessee by number of aircraft.

Pierson says the Jolco market is "still very competitive for traditional players, but the market trend is also to open more – largely Jolco – solutions to new names [airlines and lessors], and/or new asset classes".

2017 Jol/Jolco league tables

Top type-model

Jol transactions

Rank	Type-model	No. of a/c
1	Boeing 737-800	22
2	Airbus A320	19
3	Airbus A321	17
4	Airbus A330-300	8
5	Boeing 737-900ER	5
5=	Boeing 787-9	5
7	Boeing 777-300ER	4
7=	Airbus A330-200	4
9	Boeing 737-900	3
9=	Airbus A350-900	3
11	Boeing 787-8	2
12	Embraer E190-100STD	1
12=	Airbus A319	1
	Total	**94**

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Jolco transactions

Rank	Type-model	No. of a/c
1	Boeing 737-800	18
2	Boeing 787-9	9
3	Airbus A320neo	8
4	Embraer E175-200LR	5
4=	Airbus A320-200	5
6	Airbus A350-900	4
6=	Airbus A321-200	4
6=	Boeing 777-300ER	4
6=	Boeing 737-700	4
10	Embraer E175-200STD	3
10=	ATR72-600	3
12	Embraer E190-100STD	2
12=	Airbus A330-300	2
12=	Boeing 737Max 8	2
15	Boeing 777-200LRF	1
15=	Boeing 787-8	1
15=	Airbus A330-200F	1
15=	Embraer E190-100LR	1
	Total	**77**

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Top overall arrangers

Jol transactions		
Rank	Overall arranger	No. of deals
1	SMBC	6
2	MUFG	4
2=	DVB Bank	4
4	Sumitomo Mitsui Trust Bank	2
4=	Credit Industriel et Commercial	2
4=	Commonwealth Bank of Australia	2
4=	PK Airfinance	2
4=	NTT Finance	2
8	Others	8

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Jolco transactions		
Rank	Overall arranger	No. of deals
1	CA-CIB	14
2	SMBC	9
3	MUFG	8
4	Asset Brok'Air	3
4=	Veling	3
5	Credit Industriel et Commercial	2
5=	DVB Bank	2
5=	Sumitomo Mitsui Trust Bank	2
5=	Natixis	2
5=	BNP Paribas	2
11	Others	11

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Top debt arrangers

Jol transactions		
Rank	Debt arranger	No. of deals
1	SMBC	6
1=	MUFG	6
3	Sumitomo Mitsui Trust Bank	5
3=	DVB Bank	5
5	National Australia Bank	4
6	Commonwealth Bank of Australia	2
6=	Australia and New Zealand Banking Group	2
6=	Credit Industriel et Commercial	2
6=	BNP Paribas	2
6=	PK Airfinance	2
11	Others	9

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Jolco transactions		
Rank	Debt arranger	No. of deals
1	CA-CIB	14
2	SMBC	10
3	MUFG	9
4	BNP Paribas	4
4=	Credit Industriel et Commercial	4
6	Natixis	3
6=	Development Bank of Japan	3
6=	Korea Development Bank	3
6=	Veling	3
9	Sumitomo Mitsui Trust Bank	2
9=	National Australia Bank	2
11	Others	15

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Top equity arrangers

Jol transactions		
Rank	Equity arranger	No. of deals
1	NBB	16
2	JP Lease	10
3	SMFL	8
4	ORIX Bank	5
5	FPG AIM	4
6	Others	2

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Jolco transactions		
Rank	Equity arranger	No. of deals
1	NBB	10
2	SMFL	8
3	Veling	3
4	Yamasa	2
4=	CA-CIB	2
4=	Fuyo General Lease	2
4=	Mitsubishi UFJ Lease & Finance	2
8	Others	7

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Simon Collins, a partner at White & Case, which came fifth among law firms in the survey, says that equity demand is "probably stronger than I've ever seen it on the Jolco side".

He adds: "My impression as a whole is a lot of deals are getting done. There's a lot of new names. I think, traditionally, people only thought of the Jolco as something for tier-1 airlines with routes to Japan."

He says White & Case completed Jolcos for Avianca and Copa Airlines, despite neither airline having routes to Tokyo.

"The Avianca deal was extremely interesting because Avianca required the aircraft to be FAA registered and we were able to do that using a head-lease/sub-lease structure, which may have some impact in terms of being able to structure more deals into the US," says Collins.

That deal, according to White & Case's survey submission form, was for a 787-8 aircraft that delivered to Avianca on 31 October 2017. Development Bank of Japan, NordLB and SMBC provided debt, while FPG provided the Japanese equity.

Collins adds that banks will say that pricing is sharpening, but that is "true across the board – that's not just Jolco".

The leading overall arranger for Jolcos was CA-CIB followed by SMBC and MUFG while in the Jol market SMBC, DVB and MUFG led the way. Three of the four Australian trading banks were active in debt arranging for both Jols and Jolcos.

The identity of equity arrangers is more difficult to determine as the Japanese leasing companies generally prefer as little disclosure about their deals as possible.

Nevertheless we identified almost all of the Jol equity arrangers which showed NBB, JP Lease, SMFL, ORIX and FPG AIM leading the way. For Jolcos we have identified almost half of the equity arrangers. NBB also comes on top of that league table, followed by SMFL.

For the latest updates on the Jolco market, join Airfinance Journal's 7th Annual Japan Airfinance Conference at The Peninsula Tokyo on 19-20 April 2018. Email: ***Charis.Kwok@euromoneyasia.com*** *for more details.*

Top law firms

Jol/Jolco transactions		
Rank	**Law firm**	**No. of deals**
1	K&L Gates	54
2	Clifford Chance	32
3	Norton Rose Fulbright	12
4	Nishimura & Asahi	8
5	White & Case	7
6	Dentons	6
7	Vedder Price	4
7=	Watson Farley & Williams	4
9	Allen & Overy	3
10	Pillsbury	2
10=	Debevoise & Plimpton	2
10=	DLA Piper	2
10=	Berwin Leighton Paisner	2
10=	Matheson	2
18	Others	3

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

Top lessees by number of aircraft

Jol transactions		
Rank	**Lessee**	**No. of a/c**
1	Norwegian	13
2	Cathay Pacific	7
3	Wizz Air	6
4	KLM	4
4=	Cebu Pacific	4
6	Emirates	3
6=	Easyjet	3
6=	Air France	3
9	Brussels Airlines	2
9=	Vueling	2
9=	Hawaiian Airlines	2
9=	THY Turkish	2
9=	Garuda	2
14	Others	41
	Total	**94**

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*
Others includes the confidential parties and lessees with a single aircraft

Jolco transactions		
Rank	**Lessee**	**No. of a/c**
1	Jet2	9
2	KLM	7
2=	SAS	7
4	Lufthansa	6
5	Air Canada	4
5=	Copa Airlines	4
5=	Emirates	4
8	CCB Financial Leasing	3
8=	Air France	3
8=	Garuda	3
11	China Aircraft Leasing	2
11=	American Airlines	2
11=	Hong Kong Express Airways	2
11=	BoCom Leasing	2
11=	flydubai	2
11=	Transavia	2
11=	Aer Lingus	2
18	Others	13
	Total	**77**

Source: *Airfinance Journal's Deal Tracker, deals closed 1 January – 31 December 2017*

A320 – still in demand

A panel of appraisers looks at the prospects for Airbus's best-selling narrowbody as the new engine option (Neo) variant is phased into production.

The A320 was Airbus's second major project in the commercial aircraft market. The European original equipment manufacturer had established a presence with the A300, but the A320 represented its entry into the single-aisle market. The A320, which entered service in 1988, was the first member of a family. The stretched A321 entered service in 1994, the smaller A319 in 1996 and the smallest model, and the smaller A318, in 2003.

The A320 typically seats 150 passengers in a two-class cabin, or up to 180 in a high-density layout. The A320 introduced fly-by-wire flight controls into the commercial market. Although controversial at the outset, the concept is now well established and is a key part of Airbus's family concept. The aircraft is available with either CFM56 or IAE V2500 engines.

The A320 has been regularly updated since its introduction into service. Current production standard models are equipped with sharklets (wing-tip extensions) and offer significantly better fuel efficiency than the original A320 models.

New engine option (Neo) A320 models, which are being phased into production and airline service, offer a further step improvement in fuel efficiency. The use of the term Neo to identify the latest models, which are equipped with Leap-1A or PW1100 geared turbofan (GTF) engines, has led to the adoption of the Ceo (current engine option) suffix for the original CFM56/V2500-powered aircraft.

Istat appraisers' views

Collateral Verifications (CV)

Gueric Dechavanne, vice-president, commercial aviation services

Over the past 12 months, CV has seen values of used A320s increase slightly, while new aircraft values have remained stable. The increase in the production rate by Airbus may have a negative impact on values and lease rates in the long term, but the short-term results may be less than anticipated because of the continued demand for the aircraft. CV believes this trend will continue over the next 12 months; however, there are some indications that economies may be slowing in certain countries, which may lead to a softening of values and lease rates for some vintages of aircraft.

New aircraft are leasing for about $325,000 a month on average. The increase in production from Airbus, and lower fuel prices, making used aircraft attractive, have created competition for lessors trying to place new aircraft, which has in turn put pressure on lease rates. This situation has contributed to lease rates of new aircraft not increasing over the past 12 months.

CV has concerns that the A320neo will have an effect on future residual values of existing aircraft, but it is still too early to quantify the impact. Based on market feedback, there is a monthly leasing premium of about $50,000 for the A320neo over the A320ceo, reflecting a value difference of between $7m and $8m. This lease rate and value differential has been increasing over the past 12 months. However, continuing engine problems and a low fuel-price environment have helped the A320ceo remain attractive for the existing operator base.

As the A320neo moves into a more mature production cycle and the issues on the engines are fixed, CV believes operators will shift their focus to the newer variant.

IBA

Hashen Hewawasam, senior analyst

IBA has observed a reduction in the number of narrowbody retirements over the course of the past five years. One reason behind this is the low cost of fuel that has allowed many operators to keep their A320ceo aircraft in service and there is still a backlog of at least 200 A320-200s. Oil prices fell sharply in April through to May last year and, if this situation continues, we could see more extensions of leases for A320ceos.

The A320neo has many benefits, but it is priced higher to reflect the technology implementation and there is a higher technology risk associated with the new engines as well as potentially higher maintenance cost.

The engine issues faced by the A320neo, particularly on the Pratt & Whitney engine, have prolonged the life of the original A320 models, with some customers converting Neo orders back to ones for the original model, which remains in production. In addition to the ongoing troubles with the GTF engine, Airbus issued a statement in early February concerning

AIRCRAFT CHARACTERISTICS

Seating/range

Maximum seating	180
Typical seating	150
Maximum range (with sharklets)	3,500nm (6,500km)

Technical characteristics

MTOW	73.5 tonnes (option 78 tonnes)
OEW	42 tonnes
MZFW	61 tonnes (option 62.5 tonnes)
Fuel capacity	24,210 litres (option 27,200)
Engines	CFM56-5B/V2500
Thrust	25,000lbs (120kn)

Fuels and times

Block fuel 200 nautical miles (nm)	1,850kg
Block fuel 500nm	3,390kg
Block fuel 1,000nm	6,080kg
Block time 200nm	54 minutes
Block time 500nm	94 minutes
Block time 1,000nm	160 minutes

Fleet data

Entry into service	1988 (A320-100 variant)
In service	4,067
Operators (current and planned)	140
In storage	123
On order	300
Built peak year (2013)	352
Planned production (2018)	160
Average age (years)	9.0

Indicative maintenance reserves

C-check reserve	$60-$65 per flight hour
Higher checks reserve	$55-$60/flight hour
Engine overhaul	$100-$105/engine flight hour
Engine LLP	$120-$125/engine cycle
Landing gear refurbishment	$35-$40/cycle
Wheels, brakes and tyres	$120-$130/cycle
APU	$80-$85/APU hour
Component overhaul	$210-$220/flight hour

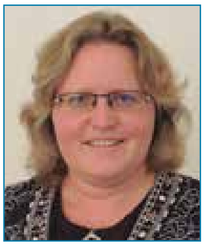
Source: *Air Investor 2018*

a newly discovered problem affecting its high-pressure compressor hub.

Despite the factors working in their favour, many examples of the A320ceo face the prospect of replacement over the coming years. From previous replacement trends, we can gauge the impact the Neo model will have on its predecessor. Older aircraft tend to exhibit much greater volatility in the event of cyclical downturns and increases in fuel price. In the event of market circumstances changing in this way, the negative impact on Ceo values, particularly of older examples, would be accelerated. If fuel prices returned to previous levels, then we would see an increase in older aircraft retirements alongside increased demand for new equipment.

Lessors with ageing aircraft will face a dilemma if there is an oversupply of aircraft in the secondary market resulting in residual values and lease rates being pushed down. In theory, the impact of new aircraft becomes apparent when the fleet of the incoming aircraft reaches about 50% of the replaced aircraft fleet size. IBA identifies that this will occur in the early- to mid-2020s for the A320ceo, given the current market conditions and expected ramp up of production by Airbus.

Oriel



Olga Razzhivina, senior Istat appraiser

Despite being superseded by the A320neo version, the current-generation A320-200 remains popular. There are a number of factors aiding this continuing popularity. First, the A320neo's reliability has fallen short of the high standards achieved by the CFM56- and V2500-powered models. With the majority of short-haul operators moving towards the high-utilisation, quick turn-around low-cost model, airlines are increasingly dependent on reliability levels of close to 100%.

Second, continuing delivery delays of the A320neo are forcing airlines to extend their existing A320 leases and/or to buy older aircraft to fill the gaps in their fleets. Some airlines, such as the US carrier Spirit, have gone as far as swapping A320neo orders for A320-200s. With A320ceo production now extending into 2021, more airlines may be tempted to switch back to the older generation.

Last, the positive economic environment, including low fuel-price and traffic growth, allows airlines to hold onto older technology aircraft without paying too much of a penalty. With an oil price of below $80 a barrel, extra fuel burn is easily offset by the lower cost of ownership of the older aircraft. Buoyant passenger and freight traffic reduces the need for airlines to look for additional savings from new technology.

In the short term, the values and lease rates of new A320-200s are showing little decline and are faring well when compared with those of the new generation. The negative differential to the Boeing 737-800 seems to have disappeared with the introduction of sharklets and seating capacity enhancements.

The long-term value and lease rate performance of the A320-200 will depend on A320neo reliability improvements and on fuel price trends. Should the reliability issues be resolved swiftly and/or the price of oil increase to above $100 a barrel, the A320-200 will become less competitive and will see its values and lease rates under pressure. Increased production rates of the new generation could put additional pressure on the older generation, accelerating any downward trends.

Values

Current market values ($m)

Build year	2001	2005	2009	2013	New
CV view	15.3	22.3	29.9	35.2	42.2
IBA view	11.0	15.6	21.9	31	41.3*
Oriel view	9.6	13.4	18.8	26.2	38.3*

Assuming standard Istat criteria.

Indicative lease rates ($000s/month)

Build year	2001	2005	2009	2013	New
CV view	140	185	225	260	320
IBA view	125-160	155-190	195-235	235-275	280-325*
Oriel view	135	165	205	250	315*

**2017 delivery.*

Future **rivalries**

To maintain anything like parity in the single-aisle market, Boeing needs the larger 737 Max models to be more successful in competing with the Airbus A321neo than the 737-900ER was in taking on the original A321.

Which of the two main manufacturers has the most successful single-aisle family is a matter of debate and interpretation, with both Boeing and Airbus making credible claims of supremacy. But there is little doubt that Airbus has stolen a march at the top end of the market.

The Airbus A321ceo has clearly been more successful than the competing Boeing 737-900/-900ER models (see Going large, *Airfinance Journal* October/November 2017, page 38), not least because Boeing reacted slowly to the success of the A321 as operators moved to larger single-aisle models. The US manufacturer does not want to see the same outcome in the competition between the latest-generation models.

Airbus A321neo

Boeing 737 Max 10

A321neo

The Neo version of the A321 is the largest member of Airbus's upgraded and re-engined single-aisle family. The manufacturer claims a per-seat fuel improvement of 20% compared with the A321ceo model. The new variant also offers a range improvement of up to 500 nautical miles, which can be traded-off against a payload increase of up to two tonnes.

Although the Neo variant is not stretched from the original A321, Airbus is offering increased seating capacity by optimising cabin space with increased exit limits and a new cabin door configuration. This option, which Airbus refers to as Cabin-Flex, increases the aircraft's maximum certified capacity to 240 seats.

The A321LR, a new long-range variant of Airbus's A321neo, will be able to fly routes of up to 4,000 nautical miles. The latest variant completed its maiden flight at the end of January and the European manufacturer is targeting entry into service by the end of this year.

737 Max 9 and 737 Max 10

The 737 Max 9 replaces the Next Generation (NG) 737-900ER. The Max 9 offers an increase in range of more than 500 nautical miles over the -900ER, but Boeing has elected to retain the cabin dimensions of the NG model.

The 737 Max 10 is a relatively low-cost development, which allows Boeing to match the A321neo's key characteristics in terms of seat count and operating cost.

Key data of current and next-generation single-aisle models

Model	A321	737-900ER	A321neo	737 Max 9	737 Max 10
Max seating	236	215	240	220	230
Typical seats single class	185	180	187	180	185
Typical range (nm)	3,200	3,200	3,700	3,550	3,300
(Target) entry into service	1996	2007*	2017	(2018)	(2020)
In service	1,467	462**	13	None	None
Orders backlog	337	62	1,456	317	444
2018 list price ($m)	118.3	108.4	129.5	124.1	129.9

**2001 for non-ER version, **including non-ER models.* Source: *Airfinance Journal research February 2018*

The Max 10 is a simple stretch of the Max 9 and, as such, will have 300-nautical mile less range. Boeing says this is not critical for the vast majority of single-aisle routes, although it does leave the field open for A321neos (particularly the new long-range version) to replace Boeing 757 long-haul operations, a sector that forms a significant part of the target market for Boeing's muted all-new middle-of-the-market model.

In February, Boeing announced at the Singapore air show that it had completed firm configuration of the Max 10, meaning all the design requirements are in place for what will be the largest member of Boeing's single-aisle family.

Indicative relative cash operating costs (COC)

	737-900ER	A321-200	A321neo	737 Max 9	737 Max 10
Relative trip cost	93%	Base	92%	89%	90%
Relative seat cost	97%	Base	91%	92%	91%

Indicative relative total direct operating costs (DOC)

	737-900ER	A321-200	A321neo	737 Max 9	737 Max 10
Relative trip cost	92%	Base	102%	98%	101%
Relative seat cost	96%	Base	101%	101%	102%

Assumptions: 500-nautical mile sector; fuel price $1.75 per US gallon.
Fuel consumption, speed, maintenance costs and typical seating layouts are as per Air Investor 2018.
Capital costs based on list prices.

Orders

There is no doubt that Airbus is building from a strong position in the large single-aisle market, having sold in excess of 1,400 more A321s than Boeing has managed for the 737-900/-900ER models. The A321ceo still has an order backlog of more than 330 aircraft compared with just over 60 outstanding orders for the 737-900ER.

Although it is difficult to extract the sales of the various Max variants, it is clear that the 737 Max 9 has not redressed this imbalance because the A321neo has outsold the Max 9 by at least four to one.

The initial success of the 737 Max 10, which was launched with 240 orders at the 2017 Paris air show, went some way to closing the gap and the aircraft has continued to garner sales and customers.

According to the figures in Boeing's press release on the firm design configuration, the Max 10 has accumulated more than 400 orders and commitments from 18 customers. The combined total of Max 9 and Max 10 orders is, however, still well below the 1,000 mark that Boeing is reported to be targeting. Most commentators believe the Max 10 will cannibalise Max 9 orders and there is a view that the Max 9 will be replaced by its larger stablemate.

There are also questions as to whether the Max 200 – a variant of the 737 Max 8 so far only ordered by Ryanair – will also be threatened because the Max 10's maximum capacity matches the Irish carrier's planned configuration for the Max 200.

Operating cost

As ever, the manufacturers' claims on the relative operating costs of their respective models are at odds. Boeing says the 737 Max 10 will have 5% better trip and seat-mile cost than the A321neo. Airbus suggests the A321neo remains 1% to 2% cheaper to operate than the latest Boeing addition to the single-aisle market.

A major point of contention when calculating unit costs is the relative seating capacities of the Max 10 and the A321neo models. The wide variety of seating options offered by each manufacturer makes it difficult to compare like with like, but there is a consensus among analysts that, although the cabin of the two aircraft are similarly sized, the Airbus aircraft retains a small advantage – typically accommodating two to three additional seats.

Airfinance Journal has used its own model in an attempt to verify the accuracy of the manufacturers' claims. From the data available, which remains limited for the Max 10, the results suggest the cash-cost differential per trip between the Max 10 and the A321neo is lower than Boeing's claim – with cash seat-mile costs virtually identical for the two models.

Nonetheless, it appears that Boeing has succeeded in defining an aircraft that competes more effectively with the A321neo than is the case for the Max 9. However, being competitive may not be sufficient. For example, the 737-900ER appears on paper to be a match for the original A321 model in terms of operating costs, but this apparent competitiveness has not translated into gains in market share.

The *Airfinance Journal* model consistently shows lower savings for the new-generation models over their predecessors, compared with the figures presented by the respective manufacturers. This difference is largely explained by a cautious approach to maintenance cost savings in the absence of in-service data to confirm the claims. The manufacturers contest this approach, but since it is applied equally to all aircraft it has virtually no impact on the relative costs of competing models from different manufacturers.

Despite the assumption of limited maintenance cost advantages, it is clear that at the assumed fuel price ($1.75 per US gallon) the latest-generation models from both manufacturers offer significant cash operating cost savings compared with their predecessors.

However, if capital costs (based on list prices) are included, the advantage of the latest-generation models is wiped out. Of course, list prices are misleading, but the result does imply that at current fuel prices, the premiums sought by manufacturers for their latest models are ambitious.

Market perception

There is general agreement among analysts that in its haste to bring the 737 Max family to the market Boeing paid too little attention to the strengths of the A321neo in an increasingly important market sector, retaining the dimensions of the 737-900ER is considered by most to have been an error. Although the Max 9 offers over 500 nautical miles more range and improved performance compared with the -900ER, the variant has not been a success.

With this background, Boeing required a model to match the A321neo in terms of seat costs. The Max 10 has, to some extent, achieved this by offering a comparable seat count, with a relatively minor trade-off in range capability. Whether this range trade-off proves detrimental to sales remains to be seen, although it adds to the pressure on Boeing to develop the much-discussed middle-of-the market model. In any case, the Max family looks almost certain to be the last iteration of the 737 design.

Bjorn Fehrm of Leeham News and Comment sums the situation up. "For airlines with the 737 Max as their standard single-aisle aircraft, " he says, "the Max 10 is certainly more competitive than a Max 9, given a reasonable net price. The only problem is that the Max 10 represents what the Max 9 should have been in the first place."

Rating agency unsecured ratings

Airlines

Airline	Fitch	Moody's	S&P
Aeroflot	B+(pos)	-	-
Air Canada	BB-(stable)	Ba3(stable)	BB-(pos)
Air New Zealand	-	Baa2(stable)	-
Alaska Air Group	BBB-(stable)	-	BB+(stable)
Allegiant Travel Company	-	Ba3(stable)	BB-(stable)
American Airlines Group	BB-(stable)	Ba3(stable)	BB-(stable)
Avianca Holdings - IFRS	B(neg)	-	B(stable)
British Airways	BBB-(stable)	Baa3(stable)	BB+(stable)
Delta Air Lines	BBB-(stable)	Baa3(stable)	BBB-(stable)
Easyjet	-	Baa1(stable)	BBB+(stable)
Etihad Airways	A(stable)	-	-
Gol	B(stable)	B2(stable)	B-(pos)
Hawaiian Airlines	B+(pos)	B1(stable)	BB-(stable)
Jetblue	BB-(pos)	Ba1(stable)	BB(stable)
Latam Airlines Group	B+(stable)	B1(stable)	BB-(stable)
Lufthansa Group	-	Baa3(stable)	BBB-(stable)
Qantas Airways	-	Baa2(stable)	BBB-(stable)
Ryanair	BBB+(stable)	-	BBB+(stable)
SAS	-	B1(stable)	B+(stable)
Southwest Airlines	BBB+(pos)	A3(stable)	BBB+(stable)
Spirit Airlines	BB+(stable)	-	BB-(stable)
Turkish Airlines	-	Ba3(stable)	BB-(neg)
United Continental Holdings	BB(stable)	Ba2(stable)	BB-(pos)
US Airways Group	-	B1	-
Virgin Australia	-	B2(neg)	B+(stable)
Westjet	-	Baa2(neg)	BBB-(stable)

Source: Ratings Agencies - 21st February 2018

Lessors

	Fitch	Moody's	S&P	Kroll Bond Ratings
AerCap	BBB-(stable)	-	BBB-(stable)	-
Air Lease Corp	BBB(stable)	-	BBB(stable)	A-(stable)
Aircastle	-	Ba1(stable)	BB+(pos)	-
Avation PLC	B+(stable)	-	B+(stable)	-
Aviation Capital Group	BBB(stable)	-	A-(stable)	-
Avolon	BB(stable)	Ba2(stable)	BB+(stable)	BBB+(stable)
AWAS Aviation Capital Limited	-	Ba3(stable)	BB(pos)	-
BOC Aviation	A-(stable)	-	A-(stable)	-
Dubai Aerospace Enterprise	-	Ba2(stable)	BB(pos)	-
Fly Leasing	-	Ba3(stable)	BB-(stable)	BBB(stable)
ILFC (Part of AerCap)	-	Baa3(stable)	-	-
Park Aerospace Holdings	BB(stable)	Ba3(stable)	-	-
SMBC Aviation Capital	A-(stable)	-	BBB+(stable)	-

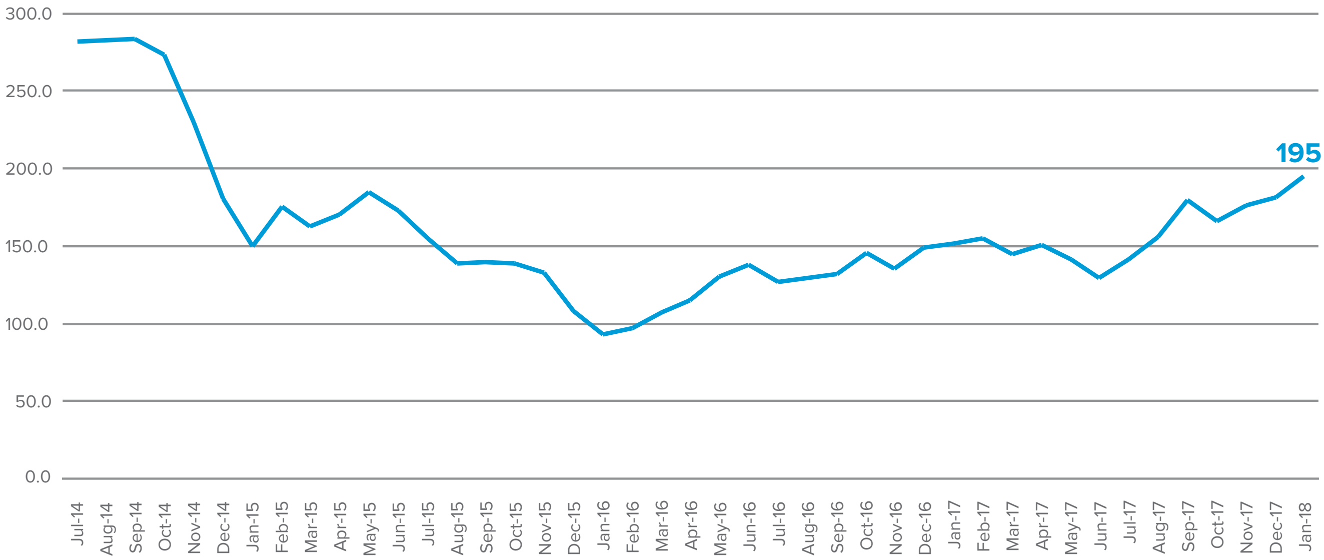
Source: Ratings Agencies - 21st February 2018

Manufacturers

	Fitch	Moody's	S&P
Airbus Group	A-(stable)	A2(stable)	A+(stable)
Boeing	A(stable)	A2(stable)	A(stable)
Bombardier	B(neg)	B3(neg)	B-(stable)
Embraer	BBB-(stable)	Ba1(neg)	BBB(neg)
Rolls-Royce	A-(stable)	A3(neg)	BBB+(stable)
United Technologies	-	A3	A-(neg)

Source: Ratings Agencies - 21st February 2018

US Gulf Coast kerosene-type jet fuel (cents per US gallon)



Source: US Energy Information Administration

Recent commercial aircraft orders (Dec 2017 - Feb 2018)

Customer	Country	Quantity/Type
UPS	USA	14x747-8F
Air Sénégal	Sénégal	2xA330neo
Emirates	UAE	20xA380
Bangkok Airways	Thailand	4xATR72-600
Egyptair	Egypt	12xCS300
Turkish Airlines	Turkey	3x777F
Vietjet	Vietnam	11xA321; 73xA321neo*
Royal Air Maroc	Morocco	4x787-9
AerCap	Ireland	50xA320neo
Indigo Partners	USA	274xA320neo; 156xA321neo
CALC	China	50xA320neo
Viva Air	Panama	35xA320neo; 15xA320ceo
Undisclosed customer	Undisclosed	6xCRJ900
Flydubai	UAE	175x737 Max
Pegasus Airlines	Turkey	25xA321neo ACF
Delta Air Lines	USA	100xA321neo
Qazaq Air	Kazahkstan	2xQ400
ICBC Financial Leasing	China	55xC919
Qatar Airways	Qatar	50xA321neo ACF**
Belavia	Belarus	1xE195

*Converted from 73xA320neo **Converted from 50xA320neo
Based on *Airfinance Journal* research up to 10/01/2018

Aircraft list prices - new models

Model	$ millions
Airbus (2018 prices)	
A319neo	99.5
A320neo	108.4
A321neo	127
A330-800neo	254.8
A330-900neo	290.6
A350-800	275.1
A350-1000	359.3
Boeing (2018)	
737 Max 7	92.2
737 Max 8	112.4
737 Max 9	119.2
777-8X	379.2
777-9X	408.8
787-10	312.8
Bombardier (2017)	
CS100	76.5
CS300	85.7
Embraer (2018)	
E175-E2	51.6
E190-E2	59.1
E195-E2	66.6

Current production aircraft prices and values ($ millions)

Model	List price	Current market value*
Airbus (2018)		
A319	92.3	35.6
A320	101	43.9
A320neo	110.6	48.5
A321	118.3	51.9
A330-200	238.5	87.5
A330-300	264.2	100.8
A350-900	317.4	147.9
A380	445.6	221.8
ATR (2016)		
ATR42-600	22.4	16.1
ATR72-600	26.8	20.4
Boeing (2018)		
737-700	85.8	36.3
737-800	102.2	46.4
737-900ER	108.4	48.2
737 Max 8	117.1	51.0
747-8 (passenger)	402.9	163.1
747-8 (freighter)	403.6	183.6
777-200F	339.2	160.9
777-300ER	361.5	157.1
787-8	239.0	118.5
787-9	281.6	142.2
Bombardier (2017)		
CRJ700	41.4	23.0
CRJ900	46.4	26.1
CRJ1000	49.5	28.3
CS100	79.5	32.5
CS300	89.5	37.1
Q400	32.2	21.7
Embraer (2018)		
E170	43.6	25.1
E175	46.9	28.6
E190	50.6	32.6
E195	53.5	34.6

*Based on Istat appraiser inputs for Air Investor 2018

Lease rates ($'000 per month)

Model	Low	High	Average
Airbus			
A319	225	275	250
A320	290	345	317.5
A320neo	330	390	360
A321	350	410	380
A321neo (ACF)	360	450	405
A330-200	600	750	675
A330-300	625	825	725
A350-900	950	1,150	1050
A380	1,450	1,900	1675
ATR			
ATR42-600	105	155	130
ATR72-600	145	180	162.5
Boeing			
737-700	220	275	247.5
737-8700	310	375	342.5
737-900ER	330	380	355
737 Max 8	330	440	385
747-8 (passenger)	1,050	1,300	1175
747-8 (freighter)	1,325	1,550	1437.5
777-200F	1,150	1,350	1250
777-300ER	1,050	1,350	1200
787-8	850	975	912.5
787-9	950	1,100	1025
Bombardier			
CRJ700	170	200	185
CRJ900	180	233	206.5
CRJ1000	190	255	222.5
CS100	230	280	255
CS300	280	310	295
Q400	170	200	185
Embraer			
E170	170	225	197.5
E175	190	250	220
E190 (AR)	230	280	255
E195 (AR)	240	280	260
Sukhoi			
SSJ100	165	210	187.5

Commercial aircraft orders by manufacturer

	Gross orders 2017	Cancellations 2017	Net orders 2017	Net orders 2016
Airbus	1229	120	1,109	731
Boeing	1053	141	912	668
Bombardier	72	2	70	237
Embraer	86	0	86	55
ATR	113	0	113	45

Based on *Airfinance Journal* research and manufacturer announcements for 2017

How come king of the skies appears to be on life support?

The Airbus A380 relied too much on a single customer, which was likely paying below average price for the aircraft, according to **Adam Pilarski**, senior vice-president at Avitas.

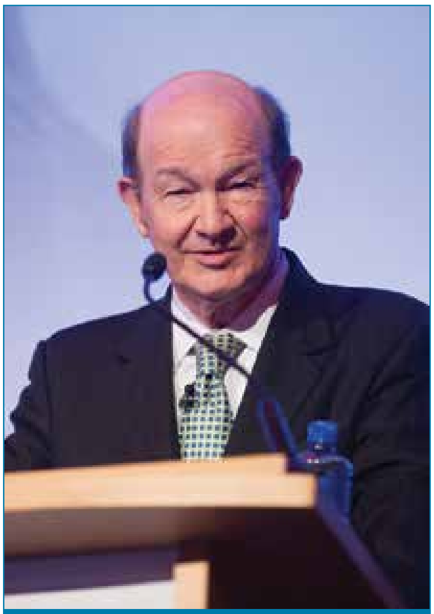
The Boeing flagship 747 was often called the "queen of the skies" and the A380, the largest Airbus product, was sometimes referred to as the "king of the skies". Recently, it looked like the curtains were being drawn on this programme, which, when launched, was seen as having the potential of becoming one of the premier and most influential programmes in aviation history. Only a last minute re-order of some additional units by the "old reliable" customer, Emirates, saved the Airbus A380 for the time being but virtually nobody believes the programme will survive in the fairly near future.

So, what has happened to the great aspiration of the king of the skies, and why did it not claim the role it was destined to have?

First, it might be beneficial to revisit the rationale for the A380. It was not, as some claim even today, Airbus's belief that traffic patterns will evolve into people relying more and more on flying between the biggest cities on the biggest available aircraft. That mistaken view purports that Boeing followed a different strategy of building smaller point-to-point aircraft, such as the 787, as against Airbus betting on huge hub centric platforms exemplified by the A380. In fact, these two aircraft are not competitors.

Airbus also was pursuing a policy of designing smaller point-to-point units documented by the expansion of the A330 and the development of the A350 programmes.

The real reason behind Airbus's launch of the A380 was its desire to achieve its long-term goals of a 50% market share. With the demise of McDonnell-Douglas in 1997, the creation of a true duopoly in the jet aircraft market became feasible. The A380 was seen as pivotal in achieving that market share goal. This was because it is easier to gain market share by selling high-cost items. And Airbus truly believed that the 747 being in a monopoly segment earned Boeing extra profits which were being utilised to cross-subsidise its other product lines. The launch of the A380 programme was promoted as a strategic move for Airbus, not as the best solution for airlines to optimise traffic developments.


Our author at the 20th Global Annual Airfinance Conference in Dublin.

"The real reason behind Airbus's launch of the A380 was its desire to achieve its long-term goals of a 50% market share. With the demise of McDonnell-Douglas in 1997, the creation of a true duopoly in the jet aircraft market became feasible."

Adam Pilarski, senior vice-president, Avitas

Airbus has only 337 firm orders for the A380, including the recent strong-arm sale to Emirates. In list prices, this amounts probably to more money than the GDP of some countries but, as a current aircraft programme, it is not very impressive. About half of the total was ordered by one customer and, as of year-end 2017, 222 were already produced. These are not very impressive statistics.

So, what went wrong? First, what went right? It is important to remember that Airbus managed to achieve a de facto equal market share to Boeing, which was its stated goal for a long time. How much the A380 contributed to that may be open for debate but I cannot see how it was not a big contributor to the Airbus strategic success. So how come the programme appears to end up on life support?

It is way too heavily dependent on one customer. It also sold only to the largest and most influential airlines in the world. This causes problems in sales prices. The top and launch customers historically pay below-average prices. In the same way as not all children can be above average, not all airlines can pay below-average prices for a programme to become successful. You need many second-tier airlines to join which will pay above-average prices. This has not happened.

Additionally, the secondary market failed to develop. It could be because the initial aircraft were financed at rates much higher than true sales prices, making it difficult to re-lease them at reasonable rates making sense to owners and new purchasers.

It appears to me that Airbus's heart was not really in the programme beyond achieving its initial strategic objective: to reach parity in market share with Boeing. That probably was enough for Airbus management. To be successful, the programme would need substantial investments and managerial attention. The platform would have to be stretched, new engines would have to be installed and serious efforts would have to be made to develop a solid secondary market. Airbus did not follow that path. Hence, the A380, the so-called king of the skies, will probably be a magnificent but sad footnote in the history of aviation.

AIRFINANCE JOURNAL

An *Airfinance Journal* special supplement

Regional aircraft 2018

Regional aircraft news

US Bangla Airlines adds Q400

US Bangla Airlines has acquired a Bombardier Q400 aircraft equipped with Pratt & Whitney PW150A engines from Ancra Leasing. MDT arranged the transaction.

The 2001-vintage aircraft was last operated as a corporate shuttle by Bombardier.

Airfinance Journal's Fleet Tracker shows that US Bangla Airlines already operates three 2001-vintage Q400s along with four Boeing 737-800s.

Lessor-owned ATRs on the market

Elix Aviation Capital is the owner of two 1990-vintage ATR42-300s currently up for sale or lease, sources indicate.

Both aircraft are operated by UK regional carrier Stobart Air and are being remarketed by Airstream International, which also has a mandate for two ATR72-500s.

By cross-referencing information from sources with *Airfinance Journal*'s Fleet Tracker, the 1997-vintage and 1998-vintage aircraft are understood to belong to Elix and rival lessor Nordic Aviation Capital, respectively.

Fleet Tracker indicates that both aircraft are in storage.

Boeing-Embraer deal has 'common ground'

The desire to form a commercial tie-up on the E-Jet programme is a mutual one for Boeing and Embraer, argues Richard Aboulafia, Teal Group's senior vice-president of analysis.

"Everyone says: 'why would Boeing do this? Is Boeing desperate for a 100-seater? Do they need a couple hundred of engineers as they fired a bunch of their engineers years ago?' I would argue it is two-way. I think there is the basis of a common ground in a deal," according to Aboulafia, speaking at the Pacific Northwest Aviation Alliance conference.

"Embraer has settled into $4 billion to $5 billion in revenues on the basis of very hard work and really smart leadership, but I think it is a two-way street in wanting to do a deal with Boeing," he says, adding: "Embraer wasn't a major player 30 years ago. Then they invented the ERJ, the E-Jet and business jets. But my conclusion is that they are kind of running out of growth opportunities."

Aboulafia says he "does not like the idea of an acquisition" by the US manufacturer.

"There are a whole bunch of issues – Embraer's DNA is extremely different compared with Boeing's. Also, there is this political dynamic between the US and Brazil that does emerge. I also think you want to be very careful about owning a Brazilian company outright."

Boeing has said there are still issues to address before a partnership can be agreed with Embraer.

Scott Hamilton, founder of Leeham News and Comment, speaking at *Airfinance Journal*'s Global Airfinance conference in Dublin, notes that the Seattle-based manufacturer needs to shore up human resources for its expanding product line.

"I believe a deal eventually will get done as Boeing faces a major exodus of engineering talent as 5,500 engineers and technicians prepare to retire," says Hamilton. "Also, Boeing faces two new programmes soon: the new midsize aircraft and new small aircraft products."

Hamilton says there are 1,702 engineers and technicians who are aged 60 and up to 3,823 who are aged 55 to 59.

He adds: "The layoffs in the Boeing workforce in recent years cut too deeply. Boeing has been rehiring some of those engineers, but there aren't enough of up-and-coming engineers to replace the 5,550 people that are retiring in the next 10 years."

Fokker trading continues through 2017

Thirty-nine Fokker aircraft were placed in 2017, compared with 42 transactions in 2016, GKN Aerospace's Fokker Services business has announced.

In Europe, Cypriot airline Tus Air became a new operator of Fokker aircraft when it purchased two Fokker 100s and four Fokker 70s. Dutch company ATS also purchased a Fokker 70, which will become operational this year. Fokker Services adds there has been a strong demand for wet leases from various traditional Fokker 100 operators in Europe.

In Australia, Alliance Airlines purchased a VIP-configured Fokker 70 from the Netherlands government, as well as a VIP-configured Fokker 100, which is equipped with long-range tanks. These aircraft will be used on corporate and VIP charters throughout Australia. Alliance Airlines is the largest Fokker operator in the world.

Fokker 70s and 100s in Australia are increasingly being used for regular public transport in addition to operating on more traditional fly-in, fly-out routes in support of natural resources industries, says the Dutch company.

MWG, based in Myanmar, purchased two Fokker 70s that are used on domestic and regional services. Bek Air, in Kazakhstan, added two Fokker 100s and Leascor in the Philippines became a new Fokker operator when it introduced a Fokker 50 in December.

Mexican operator Mayair added two Fokker 50s while Fly All Ways of Suriname added one Fokker 70. A start-up in South America purchased two Fokker 70s, which will become operational during 2018, while an undisclosed operator added one Fokker 100 to its Fokker fleet.

Jetways Airlines in Kenya added four Fokker 50s, including two full freighters and one Fokker 70 to its fleet. An additional six Fokker 50s went to other operators in East Africa. Finally, Avmax in Canada purchased four Fokker 50s from Air Iceland. Three of these aircraft have been sold to operators in Kenya.

"Low operating costs, aircraft longevity and comprehensive support remain key elements in all of the deals last year," says Fokker Services' director of aircraft remarketing, Peter van Oostrum.

"We're glad with the mix of existing and new Fokker operators, and many of the available Fokker 70s have been placed. Going forward, we continue to see a healthy supply and demand situation for all three Fokker types," he adds.

GKN Aerospace's Fokker Services business does not sell or lease Fokker aircraft. It facilitates placements by sellers and lessors through its FlyFokker programme and remarketing services, in addition to providing comprehensive support to Fokker aircraft operators throughout the world.

About 400 Fokker aircraft are operational worldwide.

ATR

ATR (Avions de Transport Régional) was established in November 1981 as a joint partnership between Aerospatiale (now Airbus) and the Italian company Aeritalia (now Leonardo). Production is based in Toulouse alongside Airbus's commercial aircraft facilities. At the beginning of 2018, ATR had about 1,400 employees.

ATR company's fortunes have been closely linked to those of turboprops in general. The emergence in the 1990s of regional jets such as the Embraer ERJ145 and Bombardier CRJ200 models caused a decline in demand for turboprops, but there has been a significant revival over the past 12 years, not least because the economic advantages of fuel-efficient turboprops increase as fuel prices rise.

The resurgence of commercial turboprop sales has been remarkable for a type of aircraft that many commentators and industry insiders thought had been made obsolete by the advent of the regional jet. ATR has been the chief beneficiary of this resurgence.

Beyond airline customers, the leasing community also has accepted the ATR family. For example, Dubai-based DAE Capital ordered 40 ATR72-600s at the Singapore air show in February 2014. In January 2018, Nordic Aviation Capital renewed its confidence in the ATR72-600, ordering an additional 15 aircraft from the manufacturer.

ATR manufactures two sizes of turboprop aircraft – the 70-seat ATR72 and the 48-seat ATR42. The aircraft benefit from the inherent advantages of the turboprop design in terms of fuel efficiency, and relatively low emissions and cost efficiencies, particularly on shorter sectors.

The original ATR42 entered service at the end of 1985. The first commercial operations of the ATR72 followed four years later in 1989. Both aircraft types have been the subject of several major upgrades and current-production aircraft are designated as -600 models.

ATR introduced the high-capacity ATR72-600 version with Cebu Pacific in September 2016. The model seats 78 passengers.

There has been much speculation since the beginning of the decade that ATR was planning a larger model to take advantage of the return to favour of the turboprop, but the plans have not materialised. Instead, ATR continued to sell the ATR72-600 models.

The company has envisaged sufficient demand for a production rate of 100 aircraft deliveries a year, but its highest level of deliveries reached was 88 aircraft in 2015.

However, there is some recent evidence that the market has peaked and sales are becoming harder to come by. The problem is exacerbated by the increased participation of lessors, with leasing companies accounting for significant percentages of the manufacturer's order backlog. Nonetheless, in January, ATR issued briefings saying it had consolidated historical levels of turnover and deliveries, despite a challenging market environment. Production has stabilised at 80 aircraft a year, compared with 51 in 2010.

In 2017, ATR booked firm orders for 113 aircraft, along with 40 options. The level of firm sales tripled the number of orders received in 2016, for which the Toulouse-based manufacturer reported 36 sales (34 ATR72-600s and a pair of ATR42-600s).

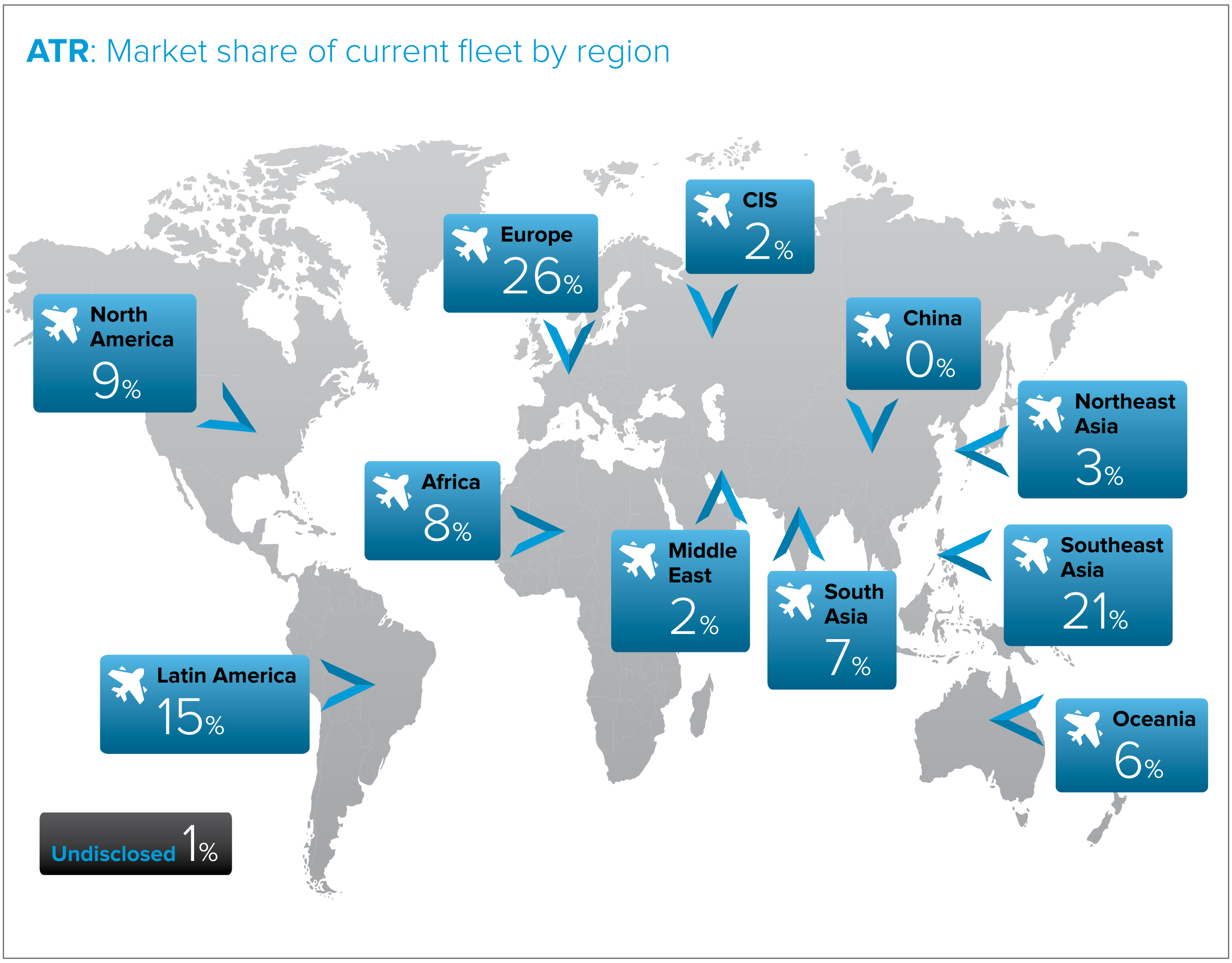
ATR's largest order last year was for 50 ATR72-600s from Indian carrier Indigo, while Iran Air firmed a 20 ATR72-600 order. ATR also sold six ATR72-600s to Mandarin Airlines.

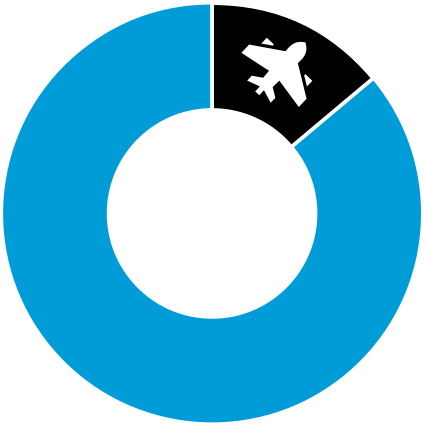
But only one ATR42-600 order (Japan Air Commuter) was placed during the year. ATR announced a memorandum of understanding with two Chinese customers at the Paris air show for a total of 13 ATR42-600s, which have yet to be firmed up.

The Franco-Italian joint venture also recorded a 30 ATR72-600 freighter order from Fedex, its first US customer order in decades. It has sold nearly 1,700 aircraft, of which about 1,450 have been delivered.

The turboprop manufacturer delivered 80 aircraft (70 new ATR72-600s, eight new ATR42-600s and two second-hand ATRs), and reached a book-to-bill ratio of 1.45.

ATR secured a solid backlog representing three years of production. *Airfinance Journal* estimates that the aircraft backlog stood at 250 units, at the end of last year, up from 212 at the end of 2016.





14.1% of global regional aircraft fleet

1,238 ATR aircraft in the current fleet

Source: *Airfinance Journal's* Fleet Tracker

Bombardier

The origins of Bombardier trace back to 1942 as L'Auto-Neige Bombardier Limitée, a company which specialised in snowmobiles, created by engineer Joseph-Armand Bombardier.

It was renamed Bombardier Limited in January 1969, as it went public, listing on the Montreal and Toronto stock exchanges.

In 1986, Bombardier acquired civil and military manufacturer Canadair, which had been under the Canadian government's control since 1976, after its acquisition from US company General Dynamics. As part of Bombardier, Canadair's trademark is in the series of business and regional jets known as the CRJ Series, or CRJs.

Shortly after, de Havilland Canada, Short Brothers and Learjet operations were absorbed by Bombardier's aerospace arm, which now accounts for more than half of company revenue.

Bombardier's most popular aircraft include its Q Series turboprops, its CRJ100/200s and CRJ700/900/1000 regional jets.

In September 1998, Bombardier launched the Bombardier Regional Jet eXpansion (BRJX), a larger regional jet in a two- to three-seat configuration for 85 to 110 passengers. But two years later, the project was shelved in favour of stretching the CRJ700 into the CRJ900. Later, the CRJ1000, another stretch of the CRJ family, was launched.

In 2004, Bombardier launched a feasibility study for a five-seat-abreast CSeries to replace ageing DC9s, MD80s, Fokker 100s and Bae 146/Avro RJs with 20% lower fuel burn and 15% lower operating cost than aircraft produced at the time. The smaller version would carry 110 to 115 passengers and the larger 130 to 135 passengers over 3,200 nautical miles.

Bombardier's board of directors authorised marketing the aircraft in March 2005, but a year later the Canadian manufacturer announced that market conditions could not justify the launch of the programme.

In February 2008, the board of directors authorised Bombardier to offer formal sales proposals to airline customers in the 100- to 149-seat market segment and subsequently launched the CSeries programme in July of that year.

In June 2016, Bombardier handed over the first CS100 aircraft to Swiss International Air Lines, which was the launch customer for the type. Air Baltic was the launch customer for the CS300 and received the first unit in December 2016.

In December 2017, the US Department of Commerce proposed a 292% tariff on CSeries to be imported into the country. This was a ruling on a complaint by Boeing that Bombardier was selling the CS100 to Delta Air Lines at unduly low prices, because of subsidies from the governments of Canada and Quebec. This allegedly produced an unfair competitive advantage.

The US International Trade Commission (ITC) ruled on 26 January 2018 that "100- to 150-seat large civil aircraft from Canada do not injure the US industry". Bombardier won with a 4-0 decision by the ITC. Boeing was given 30 days to file a notice of appeal to the US Court of International Trade.

Airbus tie-up

In October 2017, Bombardier announced a partnership with Airbus on the CSeries, which the original equipment manufacturer (OEM) believes will more than double the value of the programme. Bombardier says the partnership is expected to drive commercial momentum and production cost savings. The transaction remains subject to regulatory approvals and is expected to close in the second half of this year.

The Canadian manufacturer added that new engine delivery delays from Pratt & Whitney would impact full-year CSeries aircraft deliveries.

Furthermore, certain engines originally designated for production aircraft in the fourth quarter of 2017 would be redirected to support spare engine requirements of current CSeries customers.

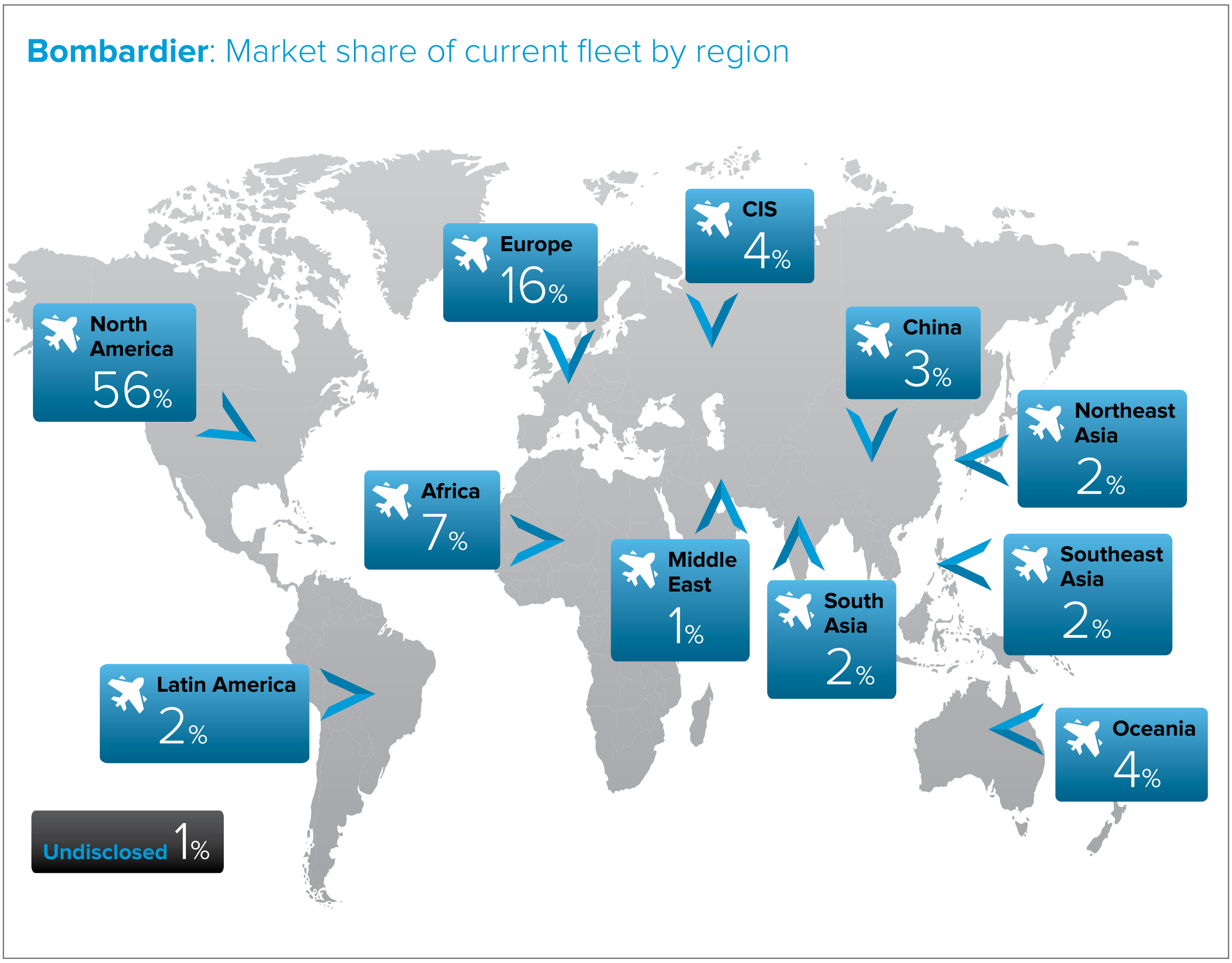
After the end of the third-quarter 2017, Bombardier signed a letter of intent with a European customer for up to 61 CSeries aircraft, including a firm order for 31 aircraft with options for an additional 30 aircraft.

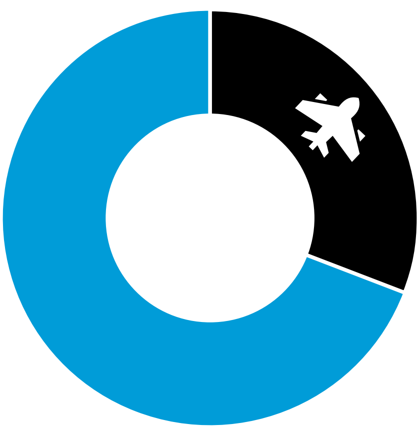
Airfinance Journal estimates that Bombardier Commercial Aircraft booked a total of 72 commercial firm orders from customers in 2017.

Egyptair committed to 12 CS300s, while Cityjet ordered 10 CRJ900s during the year along with an unidentified customer for another six CRJ900s.

Bombardier sold 44 Q400s to Spicejet (25 aircraft), Qazaq Air (two aircraft), Cemair (two aircraft), Philippine Airlines (seven aircraft), Ethiopian Airlines (five aircraft), Nordic Aviation Capital (two aircraft) and Ilyushin Finance (one aircraft).

The OEM's order backlog stood at 433 units at 30 September 2017.





2,736 Bombardier aircraft in the current fleet

Source: *Airfinance Journal's* Fleet Tracker

Embraer

Source: Embraer

Embraer was established in August 1969 and has its headquarters in São Paulo, Brazil.

There were a few key milestones for the regional aircraft manufacturer in 2017, including the 20th anniversary of the ERJ145 in January and the rollout of the E190-E2 in March.

Embraer delivered 101 commercial aircraft last year, comprising 79 E175s, 12 E190s and 10 E195s. The deliveries were within the Brazilian manufacturer's outlook ranges for the year of 97-to-102 commercial jets.

In the last quarter of 2017, Embraer delivered 23 commercial jets: 14 E175s, five E190s and four E195s. It was fewer than in the same period a year earlier, which recorded 32 commercial aircraft deliveries.

During the last quarter of 2017, Embraer also received firm orders for 15 E175s from an undisclosed customer and an order from Belavia, Belarusian Airlines, the national carrier of Belarus, for one additional current-generation Embraer E195.

The manufacturer ended 2017 with a backlog of $18.3 billion. Embraer had a firm order backlog of 435 commercial aircraft as of end-2017.

It received 86 net firm orders for commercial aircraft in 2017, compared with the 45 net orders it booked in 2016.

Embraer Commercial Aviation reached the mark of 1,400 E-Jets delivered in 2017. The commemorative aircraft was received by American Airlines, which in the quarter also signed a firm order for 10 additional E175 jets.

In an interview with *Airfinance Journal* at the 2017 Paris air show, John Slattery, chief executive officer of Embraer Commercial Aircraft, said that his main focus was to broaden Embraer's footprint in Southeast Asia. Slattery also added that he believes the arrival of the geared turbofan (GTF) engine on the Embraer E2 family will bring a "second wave" of opportunities to place aircraft in the Middle East.

He says: "My expectation is that, with the capability of the E2 and the E1 in terms of range and increased seating, coupled with the capabilities of the GTF engine, we will have a second wave of opportunities in the Middle East."

In Embraer's Market Outlook 2017, which reviews prospects in the regional jet segment over the next two decades, the manufacturer said it expects world passenger traffic to maintain 4.5% annual growth until 2036.

According to the forecast, the Middle East and Asia-Pacific will be the fastest-growing markets by 2036, with an annual revenue passenger kilometre (RPK) growth rate of about 6%, followed by Latin America with 5.2%, Africa with 4.9%, the Commonwealth of Independent States with 3.6%, Europe also with 3.6% and North America with 2.7%.

Asia-Pacific will be the largest market, accounting for 37% of world RPKs. Combined, Europe and North America will generate 36% of total air transport demand.

Embraer foresees world demand for 6,400 new jets in the 70- to 130-seat segment over the next 20 years – 2,280 units in the 70- to 90-seat segment and 4,120 units in the 90- to 130-seat segment – representing a total market value of $300 billion.

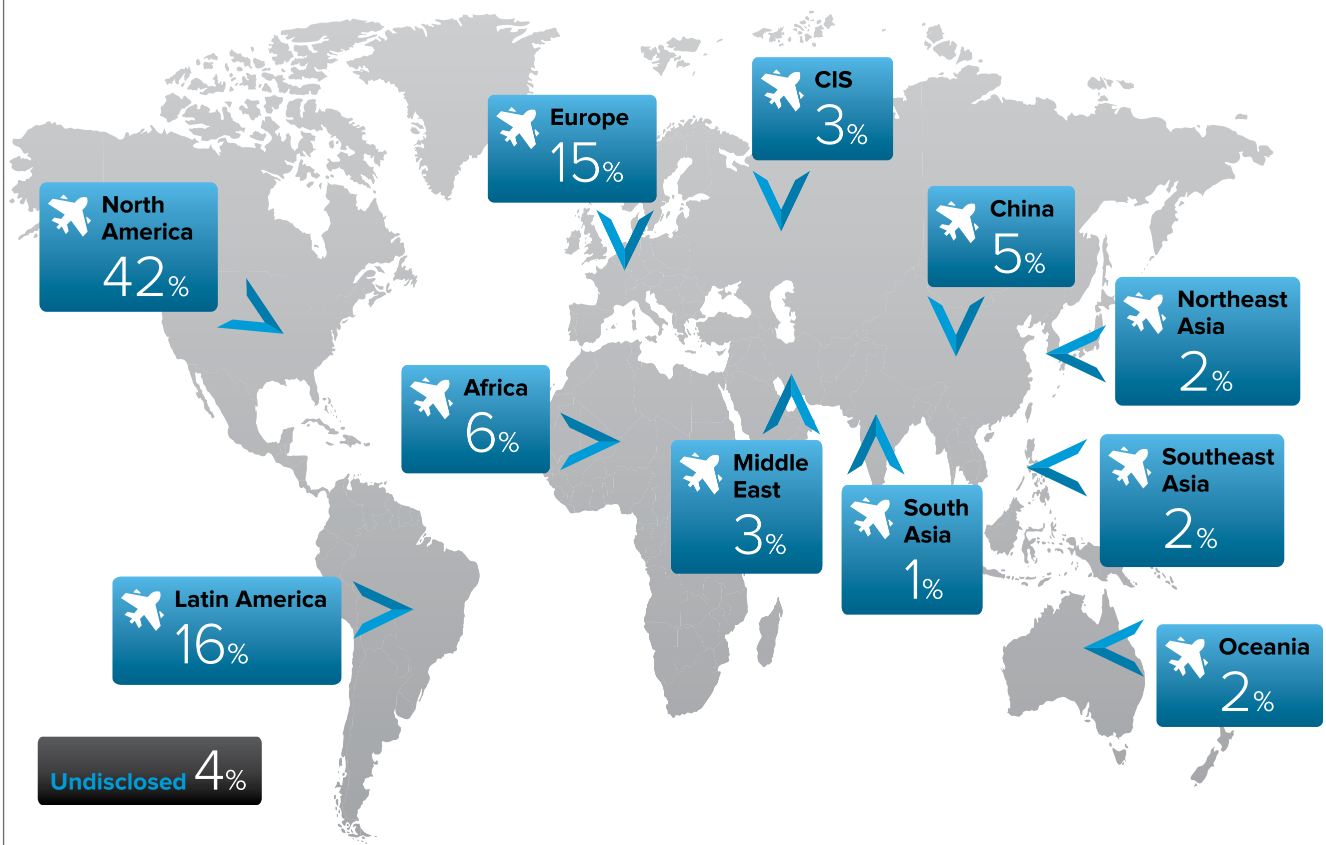
The 70- to 130-seat jet world fleet-in-service is expected to increase from 2,700 aircraft in 2016 to 6,710 by 2036, the fastest-growing segment among all aircraft categories. Replacement of ageing aircraft will represent 37% of new deliveries and 63% will represent market growth.

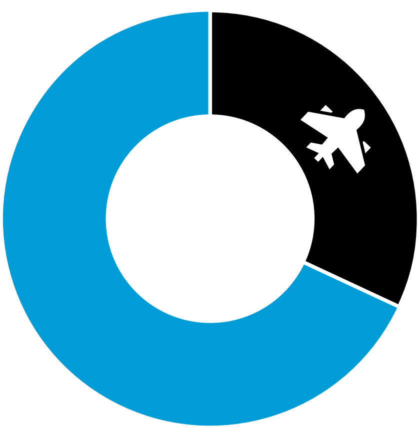
Boeing tie up?

Embraer made the headlines for different reasons towards the end of 2017.
After Airbus announced it would take control of the loss-making Bombardier CSeries programme in October, Embraer revealed just before Christmas that it was in discussions with Boeing about a potential tie-up. Although the deal looks likely to take place, Boeing chief executive officer Dennis Muilenburg, more recently, has seemed to have gone cool on the prospects of the merger. At an investor conference in Miami organised by Citigroup on 21 February, he said he saw a Boeing-Embraer acquisition as a "great strategic" fit, but the deal was not essential.

"If we can get to a good deal and one that adds value for our customers and our companies, we will do it," he says. "If we can't get to the finish line, it doesn't change our strategy. This is a great complement to our strategy but not a must do.".

Embraer: Market share of current fleet by region





32.7% of global regional aircraft fleet

2,869 Embraer aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Mitsubishi

Mitsubishi Aircraft Corporation is owned principally by Mitsubishi Heavy Industries, but has a number of smaller stakeholders, including Toyota Motor Corporation.

The company is developing the Mitsubishi Regional Jet (MRJ) family. Its original plans focused on the 70-seat market with the MRJ70 but, in response to changed market requirements after the aircraft's launch and programme delays, emphasis has switched to the larger MRJ90.

The MRJ has 387 orders, comprising 213 firm orders, 170 options and four purchase rights. However, in January it lost up to 40 when Eastern Air Lines (EAL) cancelled its order for 20 and 20 options.

A Mitsubishi spokesperson said that "after extensive discussion" between the manufacturer and Eastern Air Lines, "we determined that cancellation was the best option for both parties. We mutually agreed the same conclusion".

The spokesperson adds: "This cancellation is not a matter having to do with the MRJ programme or its development. It is a result of the changes in EAL's business configuration. After a business sell-off to Swift Air, EAL returned its license [air operator certificate] to the FAA [Federal Aviation Administration] and has withdrawn from aviation business.

"We remain in constant contact with our customers, and throughout these discussions our customers remain fully supportive of the MRJ programme; they look forward to the MRJ's entry into market."

In an interview with *Airfinance Journal* at the February 2018 Singapore air show, Mitsubishi Aircraft's vice-president and general manager, sales and marketing, Yugo Fukuhara, said the intention is not necessarily to replace the order with a single customer.

"It is up to our ongoing discussion with potential customers. There are some potential customers who may order bigger and some smaller," he says.

Fukuhara adds that MRJ is discussing with leasing companies as well as airlines for new orders. He says he expects the MRJ's order split to be 30% from leasing companies and 70% from airlines "in the long term". He adds that leasing companies "can be a very good partner to jointly conduct marketing activity to the operators".

Asked whether Mitsubishi Aircraft has been in discussions with new Chinese lessors for orders, Fukuhara says: "We are open to discuss with anyone. We think maybe Chinese leasing company discussion – it should be not near term but long term."

Fukuhara emphasises that the MRJ programme is on track for a mid-2020 delivery to launch customer All Nippon Airways. He says the aircraft has already passed the mid-point in its flight testing with more than 1,700 flight hours.

"The outcome of flight testing is very successful. This is one of the background of confidence we have," he says.

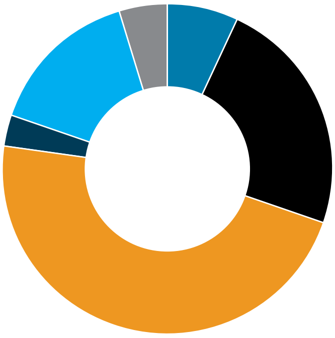
Fukuhara also responded to a question during a press conference about whether Mitsubishi Aircraft is considering a tie-up with another original equipment manufacturer, after the recent partnership between Airbus and Bombardier and a proposed link-up between Boeing and Embraer.

"Currently, we have no plan, but in the future anything will happen – but no, not at all. Not at present," he says.

Fukuhara adds that Mitsubishi Aircraft plans to introduce two new test aircraft. The company has four aircraft flying in Moses Lake and a fifth in Nagoya, Japan – mainly used for ground testing. The two additional test aircraft will initially fly in Japan before being ferried to Moses Lake.

Fukuhara says a date has not yet been set for when these aircraft will be introduced.

Firm orders for **MRJ90**



- All Nippon Airways 15
- Trans States Holdings 50
- Skywest Airlines 100
- Air Mandalay 6
- Japan Airlines 32
- Aerolease 10

53 Orders from Asia 25%

160 Orders from North America 75%

Source: *Airfinance Journal*'s Fleet Tracker

Manufacturers continue to **open new markets**

Regional OEMs are finding new operators, worldwide, for their aircraft.

ATR opened a number of new markets in 2017. The Franco-Italian manufacturer delivered to Iran Air, opening up a new market with significant potential for growth. ATR also delivered to Japan for the first time, with Japan Air Commuter (JAC), and signed comeback deals in the US with Silver Airways and with FedEx for brand new freighters. ATR also inked landmark letters of intent with Chinese carriers.

The manufacturer says more than 150 airlines opened new routes all over the world last year, with ATRs offering passengers more opportunities to connect for business and leisure. Airlines in the asia-pacific region opened the new routes of ATRs in 2017, though there was significant growth in ATR networks on every continent.

Embraer says that its E-Jets are being used in several business applications, not only regional, but also with mainlines and low-cost carrier operations.

> *“This is a market where regional aircraft comprise only 2.3% of the entire fleet, while the global average is 25%. Thus, China desperately needs effective regional air connectivity and regional cargo to support its growing regional economies.”*
>
> **Karine Guenan**, vice-president leasing, asset management and freighter and customer and structured finance, ATR

In 2017, the E-Jet family reached the milestone of more than 1,400 aircraft delivered in the five continents, which together, are serving more than 3,600 markets (240 more markets than served in 2016) and accumulated more than one billion passengers transported worldwide since the first delivery back in 2004.

Bombardier says its operators are constantly launching new routes or increasing frequencies with its aircraft. At the same time, operators are on a quest for higher yields and are closing less profitable routes. Some routes are being up-gauged, other thinner routes are then being served by regional aircraft and small single-aisle models.

Between 2016 and 2017, operators opened about 600 new routes, says the Canadian manufacturer, with significant growth in China, Asia, India, Africa, Latin America and the CIS.

ATR sees huge development potential

in China and India. Even accounting for the recent sale of 50 aircraft to Indigo, the manufacturer says there is still significant room for further growth in India.

The turboprop manufacturer predicts that India will need as many as 200 new turboprop aircraft in the next 10 years to match demand for development. In China, it sees the need for 300 new aircraft before 2035, which would lead to the creation of 800 new routes.

"This is a market where regional aircraft comprise only 2.3% of the entire fleet, while the global average is 25%. Thus, China desperately needs effective regional air connectivity and regional cargo to support its growing regional economies. We have the aircraft with the perfect economics to support Chinese operators to stimulate this growth," says Karine Guenan, ATR's vice-president leasing, asset management and freighter and customer and structured finance.

China offers a huge potential for regional flying, probably more around regional jets, argues Bombardier.

"If today the US regional system would be implemented in China, some 1,000 additional regional jets would be needed. We are at the beginning of a big change in China where regional aviation is becoming the backbone of air travel in the region," says Bombardier Commercial Aircraft senior vice-president of commercial Colin Bole.

Bombardier says North America and Europe are mainly replacement markets. Growth opportunities exist in many other regions, such as in Africa, where airlines realise the need to strengthen their domestic and regional flying before jumping to the operation of larger equipment. Connectivity in this continent continues to grow and airlines such as Ethiopian Airlines have become the regional champions for many countries beyond Ethiopia.

In South Asia, there is a growing appetite for larger turboprops and the 90-seat Q400 has gained interest, says Bombardier. In India, the Udan government initiative to boost regional flying is driving interest from airlines wishing to find the best compromise through high-density equipment and low costs.

Latin America is also recovering from years of economic downturn, says Bombardier, and new initiatives are taking place to re-establish services, in particular in large countries such as Brazil.

North America, and the US in particular, is another market where ATR sees significant potential for its aircraft where 400 routes have been lost in the past decade because of the economic inefficiency of ageing aircraft.

"Silver Airways' decision to introduce the ATR -600 series, following a deal with NAC, confirms their belief in the economics of our aircraft. We believe that following the entry into service of Silver Airways' ATRs, other operators will quickly realise the economic benefits to be gained from our modern turboprops, so some of this connectivity can be restored. Some 250 turboprops are over 15 years old in the US," says Guenan.

"The Q400 has been made for harsh environments: longer range, heavy schedules, hot and high. With more seats and extra productivity, there is tremendous benefits for airlines."

Colin Bole, commercial aircraft senior vice-president of commercial, Bombardier

Bombardier notes fleet growth for many of its regional aircraft operators in mature and emerging markets over the past two years. The Canadian manufacturer says PSA, Endeavor, Skywest, Air Georgian (which operates as capacity purchase agreement operaters for Air Canada) have grown in North America, while SAS, Lufthansa Cityline and Air Nostrum have added aircraft in Europe. Growth in other parts of the world includes China Express, Cemair and Bolivian carrier Amaszonas.

Embraer says two meaningful examples of how E-Jets have been successful serving regional markets are companies such as Skywest, Horizon, Republic Airlines and Mesa in the US. In Europe, KLM-Cityhopper has replaced its entire Fokker fleet with E-Jets, enabling the carrier to serve more cities, in more profitable markets, such as London City (previously inaccessible to them), says Embraer.

"The E-Jets were also the pillar of network expansion in airlines like Aeromexico, British Airways, Austral, Colorful Guizhou, Japan Airlines and GX Airlines," says Embraer president and chief executive officer John Slattery.

Fewer airlines have increased their turboprop fleets substantially over the past two years than their regional jet fleets.

Iran Air has gone from having no ATRs to operating eight in the space of one year. Braathens (BRA) is another example of an operator that has progressively increased its fleet, says ATR – the Swedish operator has nearly doubled its fleet size to 13 ATR72s.

"What we have seen over the last two years is an increase in new ATR operators, such as Iran Air, Indigo, JAC, Mandarin Airlines, Eastern Airways or Air Senegal, plus others, like Silver Airways, which will become new operators soon," says Guenan.

ATR says the ATR72-600 has a fuel burn advantage of 40%, a trip cost advantage of 20% and a seat cost advantage of 10% versus the Q400. "These figures clearly show the economic benefits of the ATR and contribute to the aircraft having the leading market share within the regional aviation segment," adds the European manufacturer.

Westjet Encore and Porter Airlines are prime examples in North America for growth with Q400s, while in Europe SAS, Aurora and Air Iceland Connect have added the Q series. Notable additions include Spicejet and PAL Express in Asia-Pacific and African carriers Ethiopian Airlines and Cemair.

"The Q400 has been made for harsh environments: longer range, heavy schedules, hot and high. With more seats and extra productivity, there is tremendous benefits for airlines," says Bole.

The Canadian manufacturer adds that its Q400 has the lowest cost/seat and highest productivity of any other turboprop in the market. Combined, it says these two factors offer incredible economic advantages.

Bombardier argues that the low-cost and dependability of the CRJ series are what airlines appreciate the most.

"The CRJs are cheap to operate. Even the new generation of re-engined regional jets cannot beat the CRJ economics. It is also very reliable, which means high utilisation. It offers piece of mind and, simply put, is a great money-making machine," says Bole.

"When we look specifically to the E175, it has around 5% lower operating costs when compared to the CRJ900, represented mainly by the lower fuel burn as well as its lower maintenance cost," argues Embraer. "However, it has multiple other advantages, like 25% more range, around 20% lower takeoff/landing field length and a superior cabin comfort. Those advantages gave to the E175 the leadership of 76-seats segment with more than 80% of the market share in the United States and 70% worldwide."

When we look specifically to the E175, it has around 5% lower operating costs when compared to the CRJ900, represented mainly by the lower fuel burn as well as its lower maintenance cost.

Colin Bole, commercial aircraft senior vice-president of commercial, Bombardier

Leasing potential

The lessor community finances about one-third of the Embraer global fleet. "I believe that's a solid percentage," says Slattery. AerCap, Aircastle and ICBC are the three lessors that have committed to the E2 orderbook.

"Our strategy is clearly defined and we don't believe that you should have too many lessors with speculative orders at any one time in our segment of the market. On a mature basis, you probably want approximately 25% of your delivery stream with lessors. For larger jets, that percentage can be a little higher," he says.

Embraer works with lessors closely as partners and its sales force does not distinguish a new aircraft direct sale versus supporting a lessor placement of a new aircraft, says Slattery. "I believe we are somewhat unique in that mindset and philosophy. It aligns Embraer's interests optimally with those of our lessor partners."

He expects plenty of news in the next couple of quarters on fleet placements by the lessors of the E2s as "we cadence into final type certification in the coming weeks".

Leasing is a key market for ATR, as proved by the success of a series of speculative lessor placements since 2011. The manufacturer sees lessors representing about 25% of its backlog, offering a well-balanced opportunity to enter new markets while providing operational flexibility and diversification to its operators.

"We also see future potential and interest from Asian lessors, which will further support a breakthrough for ATR sales in mainland China," says Guenan.

Bole says North America and Europe are still the largest regional markets in the world, despite a rising demand in China. Bombardier sees great opportunities with leasing companies.

"We are working closely with lessors to manage supply and demand responsibly to ensure long-term value. As an example, less than 20% of the Q series fleet is leased, whereas more than 30% of our competitors' fleet is leased," he says.

According to Bole, lease rate factors in the large regional aircraft market (60 to 99 seats) are holding up much better than in the large single-aisle segment (150 to 220 seats).

"Availability of delivery positions for large single-aisle aircraft are not until 2023 and beyond, so any leasing company looking for near-term growth opportunities should take a look at the regional market," he adds.

Secondary market

In the secondary market, Bombardier's products are considered liquid and in demand and the manufacturer's pre-owned inventory is at an all-time low, says Bole.

"The Q400 is well distributed with two-thirds of the fleet in mature markets with a growing footprint in Asia and other developing regions. In 2017, only 2.8% of the fleet was stored while our competitors were closer to 9%," he adds.

Between 2012 and 2017, 75 CRJs were sold outside the US, with nine out of 12 operators based outside that country.

Pre-owned Bombardier aircraft are also sought after by regional cargo feeders and air cargo operators. More than 15 CRJ200 aircraft have been converted to either package freighter (PF) or special freighters (SF). With vintages of 15 years and older entering the market, the Q400 PF is also gaining strong interest, says Bole.

Embraer has been very successful in the secondary market, too. The placement of pre-owned aircraft, as they naturally come off lease from their first or second leases, allowed the manufacturer to expand its operator footprint.

Slattery says about 2.5% of the fleet installed is available for sale. "It is a pretty healthy level, but, in the end, represents a unique advantage for Embraer to look for new opportunities. In 2017, we added five new operators to our customer base – Airlink, S7, Georgian Airways, Buta Airways and Fastjet," he adds.

Guenan says there are interesting opportunities for ATR operators to use legacy aircraft for a variety of operations. She says the ATR72-500s still retain more than 50% of their original value after 10 years of operations and offer competitive economics that will be interesting to certain operators for passenger operations.

The ATR72-500 model is an excellent candidate for passenger-to-freighter (P2F) conversions, she says.

"Furthermore, there are more than 300 ATRs which are older than 20 years old, while in terms of feedstock in the 10- to 20-year-old range, there are only 200 ATR -500s. This does not account for other turboprops, which would further emphasise this disparity between the used-market supply and demand. We therefore expect to see a strong demand for mid-age ATR -500s in the near future."

ATR recently created a freighter, leasing and asset management division that offers a one-stop-shop to support the transition and acquisition of its aircraft on the secondary market – using its market acumen to lessen the financial impact on operators seeking this kind of investment opportunity.


AIRFINANCE JOURNAL
AWARDS 2018
Global Awards, Miami,
16 May, 2018
For more information contact:
Chris Gardner
Chris.gardner@euromoneyplc.com
Tel: +44 (0) 20 7779 8231
www.airfinancejournal.com


Above & Beyond
With 50 years' experience in aviation finance, GECAS provides clients in 75 countries with deep domain expertise and the industry's broadest range of products and services.
Download the GECAS Customer App
For Apple
For Android
gecas.com