

AIRFINANCE
JOURNAL

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special supplement

Regional Aircraft 2017



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As well as the in-production aircraft types, there is a significant portion of the current regional fleet that is made up of older aircraft models. According to *Airfinance Journal's* Fleet Tracker, 20% of the total current global regional fleet is made up of out-of-production aircraft.

57 Softly, softly

The 50-seat regional aircraft market continues to experience challenging conditions, writes **Olivier Bonnassies**.

Regional aircraft news

TrueNoord invests in E190s

Amsterdam-based TrueNoord Regional Aircraft Leasing has disclosed its first investment, six Embraer E190 aircraft.

The portfolio is made up of aircraft built in 2013 and 2014 with leases attached.

The investment marks the start of a highly targeted on-going development and growth strategy for the TrueNoord fleet under lease, following investment from private equity firm Bregal Freshstream in 2016, says the leasing company.

TrueNoord Regional Aircraft Leasing relaunched last July after capital injection from a Bregal Freshstream.

Falko buys Bombardier portfolio

Falko Regional Aircraft is adding 11 Bombardier CRJ900NG aircraft to its portfolio.

The aircraft are being acquired from Scandinavian Airline Systems, and are currently on lease to Cimber A/s in Denmark.

"We are delighted to have reached agreement with SAS on these aircraft which further expands our portfolio of Bombardier manufactured aircraft" says Mark Hughes, executive vice president – corporate finance, Falko Regional Aircraft.

The transaction follows the acquisition of SAS' subsidiary Cimber A/s by Irish carrier CityJet. As part of the transaction CityJet has won a six-year wet lease contract from SAS to operate regional services from Copenhagen.

CityJet firms order for 6 CRJ900s

Bombardier Commercial Aircraft has announced the firm purchase agreement with Irish carrier CityJet, consistent with the conditional agreement announced on 24 January 2017.

The firm agreement includes six Bombardier CRJ900 aircraft and options for an additional four aircraft. Upon delivery, the aircraft will operate under wet-lease in the Scandinavian Airlines (SAS) network.

On 31 January CityJet completed the acquisition of Cimber A/s, the Copenhagen-based subsidiary of Scandinavian Airlines (SAS).

ATR misses deliveries target in 2016

Turboprop manufacturer ATR delivered a total of 80 aircraft in 2016, but missed its output target of more than 90 units.

The Toulouse-based company recorded a \$1.8 billion turnover, down 10% from its record turnover in 2015 of \$2 billion, when it handed over 88 aircraft to customers.

In 2015, ATR indicated that production would reach about 100 aircraft annually. The then chief executive officer, Patrick de Castelbajac, also admitted the turboprop manufacturer faced supply-chain “challenges” in ramping up production.

ATR further consolidated its position in 2016 with orders for a total of 36 new aircraft, including 34 ATR72-600s and two ATR42-600s, guaranteeing about three years of production. The manufacturer sold two ATR42-600s to Aeromar, while its largest order was for 12 ATR72-600s for Argentina’s Avian Lineas Aéreas.

It also received renewed confidence from nearly 30-year-long customer Binter of Spain, as well as additional orders from Papua New Guinea’s PNG Air (five ATR 72-600s) and Brazil’s Azul Linhas Aéreas (also five ATR 72-600s).

In February, Iran’s flag carrier, Iran Air, signed an agreement to purchase up to 40 ATR72-600s. The deal includes firm orders for 20 units, as well as 20 options. The transaction has yet to be finalised.

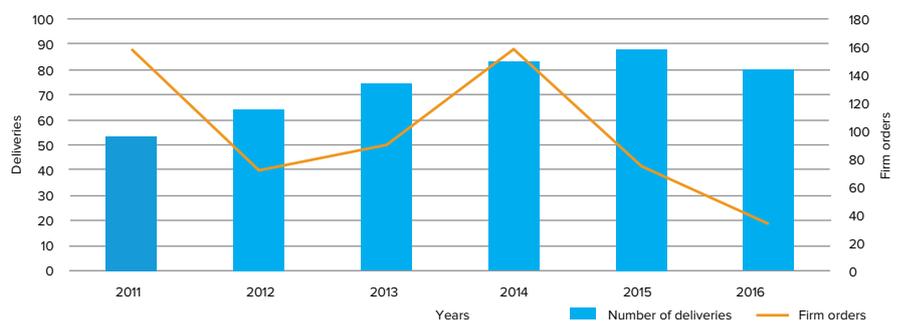
“ATR remained the preferred choice of regional airlines in 2016, despite a globally difficult year in the regional aircraft market,” says Christian Scherer, who was appointed chief executive officer of ATR

in November, after the resignation of de Castelbajac.

He adds: “As the environment is getting tougher, the economic advantages and the market liquidity of the ATR aircraft versus its competitors prove to be the basis of our success.”

The backlog at the manufacturer is estimated at 216 units, down from 260 at the end of 2015.

ATR orders and deliveries (2011-16)



MRJ delivery delayed

The Mitsubishi Regional Jets’ (MRJ) first delivery has been delayed from mid-2018 to mid-2020.

Mitsubishi Heavy Industries (MHI) says in a statement the change is because of revisions of certain systems and electrical configurations on the aircraft to meet the latest requirements for certification.

MHI recently established the MRJ business promotion committee, chaired by Shunichi Miyayama, president and chief executive officer of MHI, to oversee the continued development and long-term business performance of the MRJ.

“Since the historic MRJ first flight in November 2015, we have made significant progress in both engineering and test, and now three aircraft are in flight test in the United States,” states MHI.

Airfinance Journal understands that transfer of title was on 19 January and the handover ceremony on 20 January.

The aircraft, which was purchased with cash, will enter into service in late April after local training.

Eight other aircraft will be delivered over the coming three years as part of the carrier’s fleet modernisation process.

JAC will receive the second aircraft in September. It is expected to be funded partly by the government for operation on specific island routes. The third aircraft is due in 2018.

JAC’s nine new ATRs will start operations on both main routes and connections to and from smaller islands and communities across the country.

Airfinance Journal reported on 22 March that JAC had retired a Q400 aircraft.

Appraisers expect Bombardier to look at CS500

Bombardier is likely looking at making a larger member of the C-Series family, according to a panel of appraisers speaking at the 19th Annual Global Airfinance Conference in Dublin.

Stuart Ruben, principal, ICF International,

says: “I certainly would say that Bombardier are looking closely at making a CS500. They see the family concept as a key success factor, and we’ve seen that in the market having a family is the key to success. I would not be surprised if they tried to stretch the aircraft in the next three to four years.”

Lindsay Webster, director, asset valuations at Morton Beyer & Agnew, adds: “Bombardier is pretty adamant that there’s not going to be. But I think that if they want to be in the industry for long, that’s the next option they’ve got to go to.”

However, Rikard de Jonghe, vice-president, asset valuation at Avitas, disagrees. “It would be tempting to stretch, but they have enough to do in the sub-150 [seat] market. In the bigger market, Airbus and Boeing would likely stomp you out,” he says. Olga Razzhivina, director at Oriol, says that Bombardier needs “a family concept” to be successful but going straight in a new class against Boeing and Airbus “will be difficult”.

She adds: “Looking at the history of Bombardier, we know there has been a bid from China to have ownership in the company. The Canadian government may look at that again. The influx of money from that side of the Pacific means that Bombardier may not have to look over their shoulder in financial terms when looking to fund a new programme.”

JAC becomes ATR operator

Japan Air Commuter (JAC), a subsidiary of Japan Airlines, the Japanese flag carrier, became a new ATR operator on 20 January with the introduction of an ATR 42-600 (MSN 1215).

MANUFACTURER PROFILES

ATR



Source: ATR

Established in November 1981, ATR is a joint partnership between Airbus and the Italian company Leonardo (formerly known as Finmeccanica). Production is based in Toulouse alongside Airbus's commercial aircraft facilities. At the beginning of 2017, ATR had about 1,300 employees.

ATR is the only western commercial aircraft manufacturer that exclusively produces turboprop aircraft and the 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 ERJ-145 and Bombardier CRJ200 caused a decline in demand for turboprops, but there has been a significant revival since the start of this decade, 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.

Perhaps even more striking than the upturn in sales is the improved perception of turboprops among financiers. There is an unprecedented willingness to provide funds to customers acquiring aircraft, and leasing companies have placed significant orders

directly with the manufacturer and via sale and leaseback transactions.

ATR manufactures two sizes of turboprop aircraft, the 70-seat ATR72 and the 50-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 in 1989. Both aircraft types have been the subject of several major upgrades and current production aircraft are designated as -600 models.

Many commentators predicted the ATR42 would be phased out because airlines seemed increasingly to favour the larger ATR72, but sales of the smaller model have continued, albeit in numbers well below those of the larger variant.

There has been much speculation that the company was planning a larger model to take advantage of the return to favour of the turboprop, but the plans have not materialised and the launch of such an aircraft looks unlikely in the short-to-medium term.

ATR production rates have increased to levels that are unprecedented for 50- to 70-seat turboprops. The company has envisaged sufficient demand for a production rate of 100 aircraft deliveries a

year, although this has yet to be realised. To meet its production targets, ATR negotiated for additional space in the production facilities it shares with Airbus and set up a dual production line in 2014.

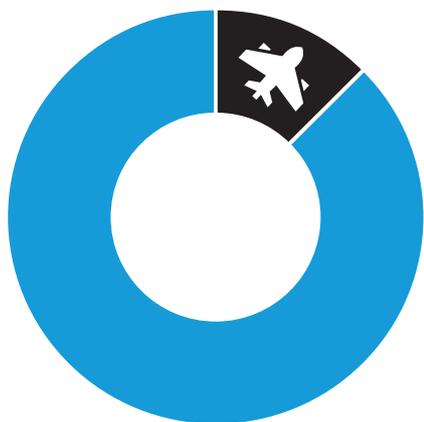
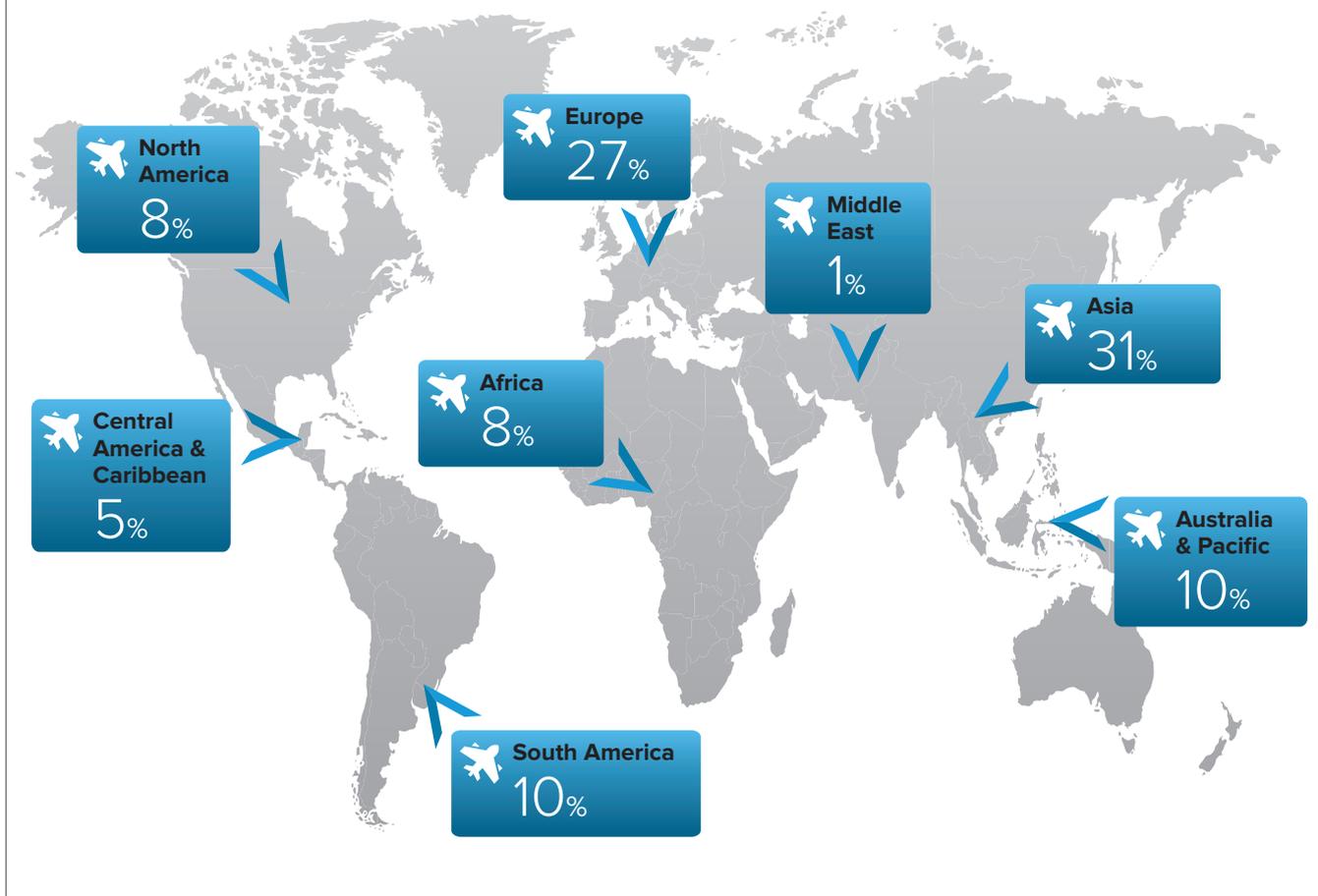
After this investment, ATR achieved its record turnover of \$2 billion in 2015. During that year, the aircraft manufacturer also set a new company record for deliveries, with a total of 88 aircraft.

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. The briefings noted that, in 2016, the company recorded its second-highest turnover (\$1.8 billion) and its third-highest yearly total of deliveries (80 aircraft). During the year, the company received orders for 36 aircraft: 34 ATR72-600s and two ATR42-600s.

As of the beginning of 2017, the Franco-Italian joint venture had sold more than 1,500 aircraft, of which about 1,300 have been delivered. ▲

ATR: Market share of current fleet by region



12.7%
of global regional aircraft fleet

1,188 ATR aircraft in the current fleet



Source: Airfinance Journal's Fleet Tracker

MANUFACTURER PROFILES

Bombardier



Source: Bombardier

Bombardier's prospects have improved considerably in the past 12 months. At the start of 2016, the company's new-technology CSeries programme was failing to book a significant volume of orders, more than two years late and \$2 billion over budget.

However, thanks to a liquidity boost and a flurry of orders for CSeries aircraft, 2017 has got off to a much brighter start.

In June 2016, the company sealed a deal with Quebec's provisional government for the investment of \$1 billion in the CSeries programme, which helped to ease its liquidity problems. Under the agreement, the government takes a 49.5% stake in the programme.

Meanwhile, Bombardier has picked up large orders from major airlines, boosting the credibility and the prospects of its newest aircraft offering.

Bombardier's turnaround plan seems to be taking effect. The company is on target to generate breakeven free cash flow by 2020, while total revenues, driven in part by higher CSeries deliveries, are expected to increase by a low-single-digit rate. Projected earnings before interest and tax is expected to range between \$530 million and \$630 million – up from 50% at the midpoint over 2016's earnings.

Aircraft types

As well as business aircraft, Bombardier manufactures a range of regional jets and turboprops (excluding the CSeries). These include the Dash8, Q Series and CRJ families.

The original Dash8 family consisted of the 30-seat Dash8-100/-200 and the

50-seat Dash8-300. A 70-seat variant, the Dash 8-400, followed but is significantly different to the original family members. Later models of all variants were rebranded as Q (for Quiet) Series aircraft. Production of the Q200 and Q300 ceased in May 2009. The -400 model continues in production, under the designation Q400.

The Canadair Regional Jet (CRJ) was derived from the Canadair Challenger jet and was well received by the market, with more than 1,000 of the 50-seat CRJ100/200 being delivered. The CRJ's success was a major factor in the demise of a number of turboprop manufacturers, which had previously dominated the 50-seat market. Production of the CRJ200 was suspended in 2005. The main competitor to the CRJ100/200 is the Embraer 145. CRJ production is expected to fall in 2017 to about 10 deliveries, most for replacement purposes, down from between 35 and 40 in 2016.

The CRJ700, CRJ900 and CRJ1000 are stretched and upgraded versions of the original CRJ200. According to *Airfinance Journal* Fleet Tracker, there are 1,450 aircraft in operation across the whole aircraft family.

Strong year ahead for CSeries?

Bombardier's latest venture is the CSeries family, which is aimed at the 100-seat-plus market. The two models in the family (the CS100 and the CS300) compete directly with the smaller members of the Boeing 737 and Airbus A320 families.

The programme suffered a number of setbacks and delays and initially failed to attract significant orders. However, that

changed last year, with several significant orders coming from leading airlines, including Delta and Air Canada. These orders brought its backlog above the target of 300 orders by the time of the aircraft's entry into service.

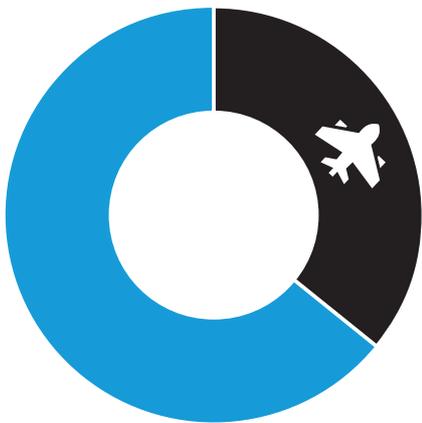
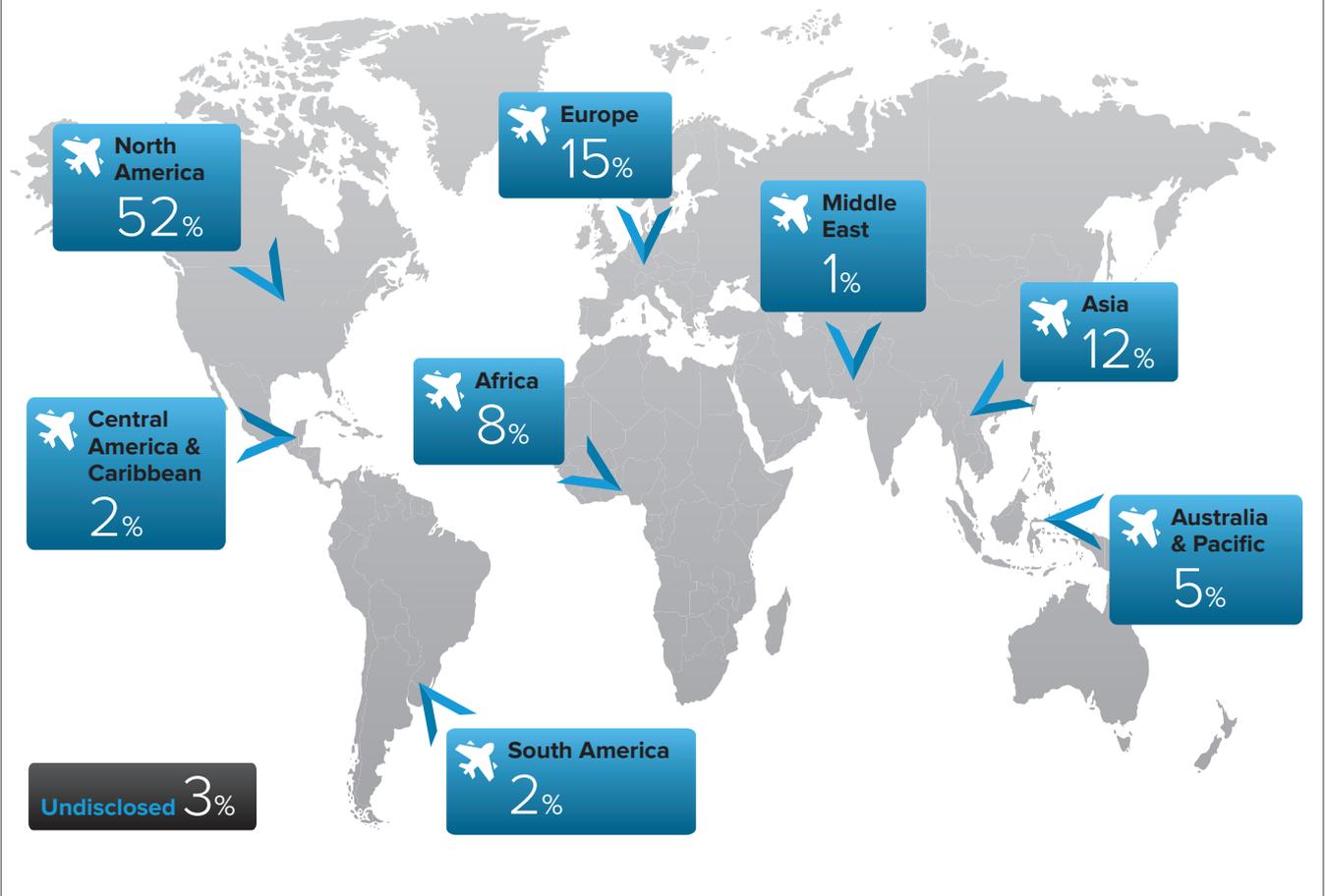
At the 19th Annual Global Airfinance Conference in Dublin in January, a panel of appraisers said it expected the CSeries programme to have a strong year in 2017 but to continue facing difficulties.

Stuart Rubin, principal at ICF International, says: "I think 2016 was an excellent year for the programme. The Delta order was key. Still some challenges remain: Boeing and Airbus have deep pockets on production levels and I think they are very well positioned to compete with the CSeries. The A319neo continues to be a problem for the programme, so I think 2017 will be a good year but there will be some challenges ahead."

Olga Razzhivina, director at Oriol, says the lack of orders for the CSeries may be because of market appetite for 108- to 133-seat aircraft.

"It's a difficult sector of the market to be in. If you look at CSeries' closest competitors – 737 Max 7s and A319neos – the orders are disappointing. But it could be a bellwether for how much demand there is for 108- to 133-seater aircraft. It's hard to tell whether the CSeries programme is out of the woods; I think it depends on one more major order from the main operators. It is really down to Bombardier to score another order, otherwise it might be another niche type that has its merits. You want an aircraft type that is really diversified between operators." ▲

Bombardier: Market share of current fleet by region



35.9%
of global regional aircraft fleet



3,345 Bombardier aircraft in the current fleet

Source: Airfinance Journal's Fleet Tracker

MANUFACTURER PROFILES

Embraer



Source: Embraer

Embraer kicked off the year strongly with two announcements – one for its re-engined E2 aircraft and another for its E-Jet family.

Scandinavian regional carrier Wideroe placed an order for 15 E190-E2 re-engined aircraft. The agreement includes three firm aircraft and purchase rights on a further 12, with deliveries commencing in 2018.

Wideroe is switching to Embraer after being an all-turboprop operator, with a fleet entirely comprising Bombardier Dash8s.

The order coincides with a shift in strategy at the Brazilian manufacturer. For some time, Embraer’s focus has been on its successful E-Jet family. However, in 2013, the manufacturer announced the launch of the E2, which is the second-generation E-Jet.

Airlink, Southern Africa’s largest independent regional airline, has selected the E-Jet for its Avro RJ85 replacement programme. The carrier plans to acquire a total of 13 aircraft with second-hand E-Jets amongst them three E170s and two E190s will be sourced from ECC Leasing, a wholly owned Embraer subsidiary. The carrier will start receiving the aircraft in the first half of this year.

Airlink already operates a large fleet of ERJ aircraft – last December, it started to add 11 further ERJ-140 jets to its fleet.

By the end of the fourth quarter of 2017, the airline will operate 30 ERJs, comprising all three types – ERJ-135, ERJ-140 and the ERJ-145.

The announcements come after Embraer increased its commercial aviation deliveries by 6.9% to 108 units in 2016.

It delivered a total of 225 aircraft to the commercial and executive markets,

representing its highest volume of deliveries in the past six years. As of 31 December, the backlog totalled \$19.6 billion.

Still, even with an uptick in deliveries, Embraer president and chief executive officer, Paulo Cesar de Souza e Silva, indicated at the time of the results that 2016 was a year of “major challenges in the aviation industry due to global economic and political uncertainties”.

In response to this scenario, Embraer is implementing important actions and making adjustments to be well positioned in all business segments it operates, he says.

The spare parts pool programme continues to grow, he notes. In the fourth quarter, Airlink and the UK’s Eastern Airways signed contracts for the programme.

Embraer has logged more than 1,700 orders for the E-Jets programme alone.

The manufacturer delivered its 1,300th E-Jet in the fourth quarter, to China’s Tianjin Airlines.

Last year, it delivered 90 E175s, eight more than in 2015. E190 deliveries in 2016 totalled 11, three more than 2015, and E195 deliveries for the year totalled seven, one fewer than 2015.

However, Embraer did not deliver a single E170 in 2016, whereas it delivered two in 2015.

Looking ahead, Embraer is eyeing Iran’s requirement for aircraft with 130 seats or fewer after Airbus won orders for 98 aircraft and Boeing secured a deal for 80.

It also sees untapped opportunities in the Asia-Pacific market. Embraer believes that airlines in that region will take delivery of 1,570 new jets in the 70- to 130-seat segment over the next 20 years. This requirement is valued at \$75 billion, at list

prices, representing 25% of the worldwide demand for the segment in the period.

According to the global Embraer Market Outlook for the 70- to 130-seat capacity segment for the next two decades, the entire market will demand 6,350 new jets in this category, which is valued at \$300 billion over the period.

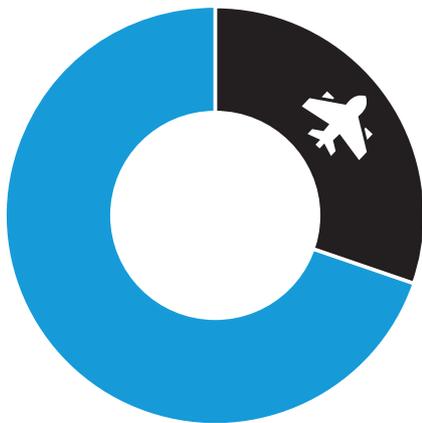
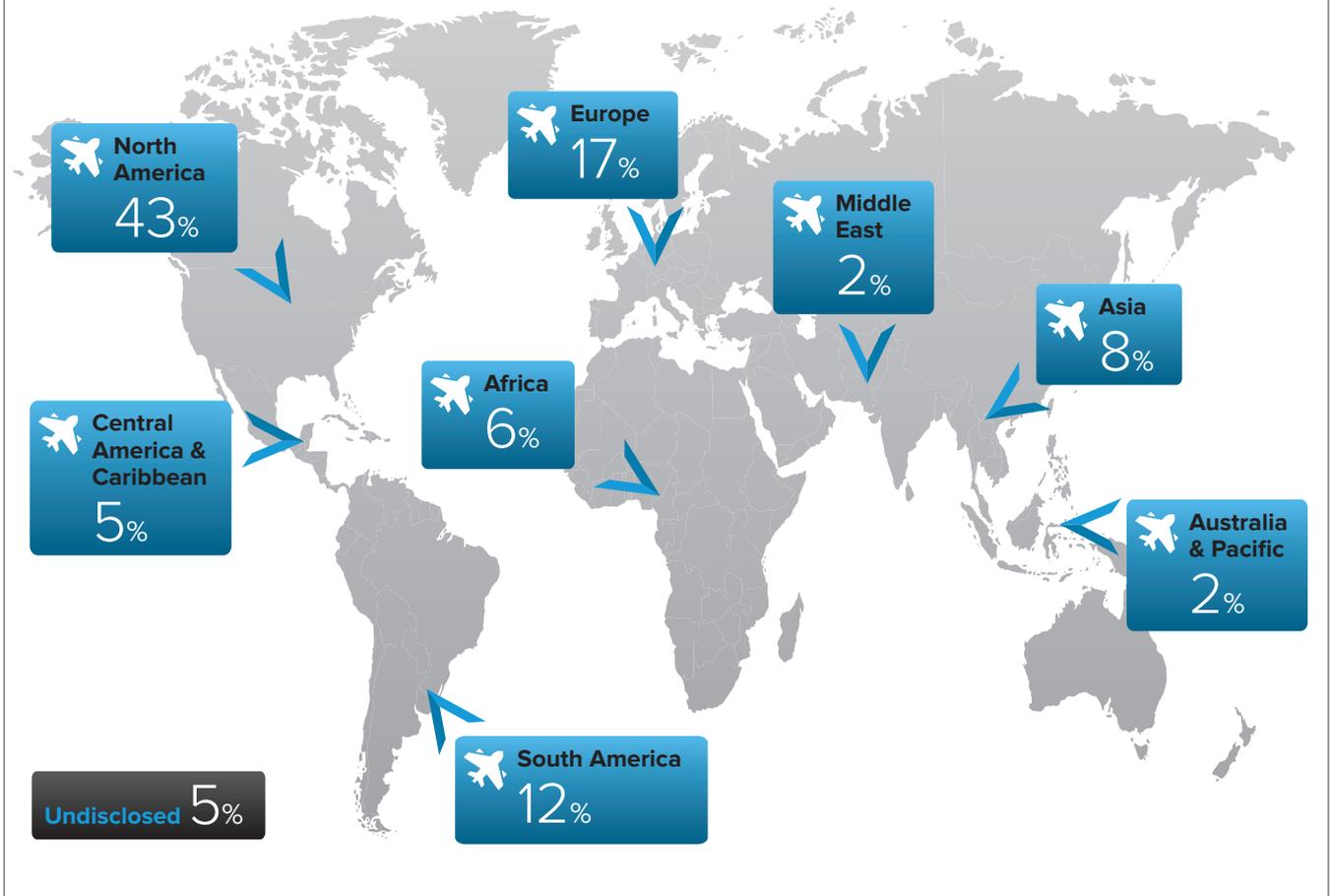
“We are showing to airlines the benefit of moving from red oceans to blue oceans – that is, to move away from a crowded marketplace and seek out opportunities in markets that are currently underserved, or not served at all, where yields are also stronger, moving from one to two digits,” says de Souza e Silva.

Embraer notes in Asia-Pacific about 30% of narrowbody-exclusive markets are served with less than one daily frequency. It believes markets such as these would be better served with 70- to 130-seat jets, based on the average number of passengers per departure. Also, 37% of intra-regional turboprop capacity is offered on routes longer than 200 nautical miles, which are better suited to jet operations, because of their higher network productivity, better operating economics and superior passenger appeal, it believes.

Another opportunity in the region, says Embraer, is the replacement of ageing fleets. There are more than 250 jets in the 50- to 150-seat category that are more than 10 years old, and these are possible targets for replacement in the near future. ▲

In the December/January edition of *Airfinance Journal* there was an incorrect figure in the Investor Poll on the operational success of the E175-E2. The incorrect figure was 5.0 when it should have been N/A, as the aircraft in question is not in service yet.

Embraer: Market share of current fleet by region



30.3%
of global regional aircraft fleet

2,822 Embraer aircraft in the current fleet

Source: Airfinance Journal's Fleet Tracker



MANUFACTURER PROFILES

Comac



Source: Comac

The Commercial Aircraft Corporation of China (Comac) is a state-owned limited liability associated with the Aviation Industry Corporation of China (Avic). Comac is responsible for large passenger aircraft programmes in China. Its principle aircraft is the C919, an A320/737-sized aircraft, but the company also has responsibility for the ARJ21 regional jet.

ARJ

The ARJ21 has suffered numerous delays in its development, but finally gained

certification from the Civil Aviation Administration of China at the end of 2014. However, the US Federal Aviation Authority, which is shadowing the certification process, is not expected to certify the aircraft in the short term.

Sichuan-based Chengdu Airlines took delivery of the first ARJ21 in November 2015 on lease from SPDB Financial Leasing.

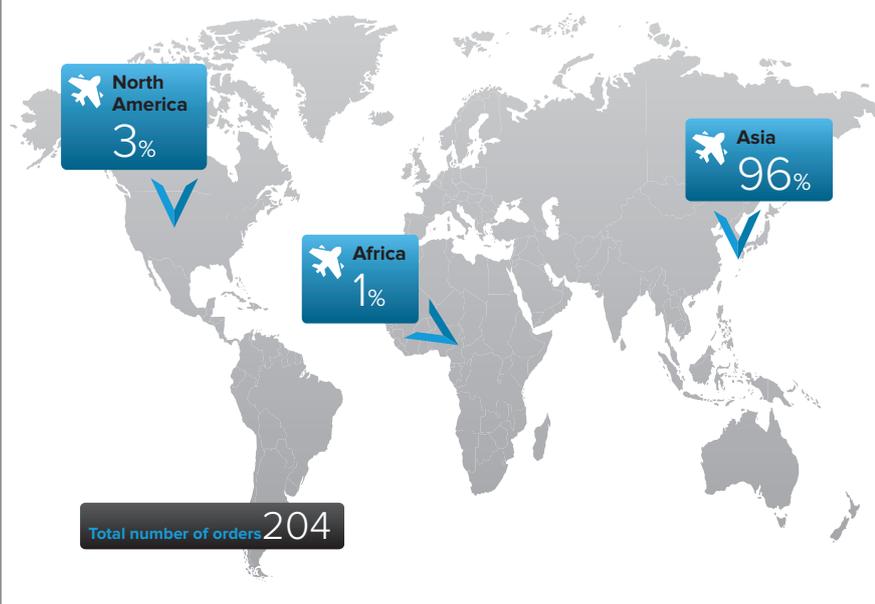
“The 700 baseline variant has already come out and is currently in service, but I don’t think there is much demand for

under 100-seat aircraft in China,” says Professor David Yu.

“The continued trend is more upsizing in the aircraft size especially in crowded trunk routes, so this will likely have a minimum impact there. How many regional aircraft are there in China? Not that many compared to larger-sized aircraft.”

He adds that one benefit of the aircraft is that it could have more impact in western China, where it can be utilised for increasing frequencies on underserved routes or opening up new routes. ▲

Comac: Number of orders by region



Source: Airfinance Journal's Fleet Tracker

Orderbook for ARJ21

| Airline/Lessor | Number ordered |
|-------------------------|----------------|
| CALC | 30 |
| Chengdu Airlines | 29 |
| Comsys Aviation Leasing | 20 |
| Congo Brazzaville | 3 |
| Gecas | 5 |
| Hebei Airlines | 10 |
| ICBC Leasing | 40 |
| Henan Airlines | 50 |
| Myanmar Airways | 2 |
| Shandong Airlines | 10 |
| Shanghai Airlines | 5 |

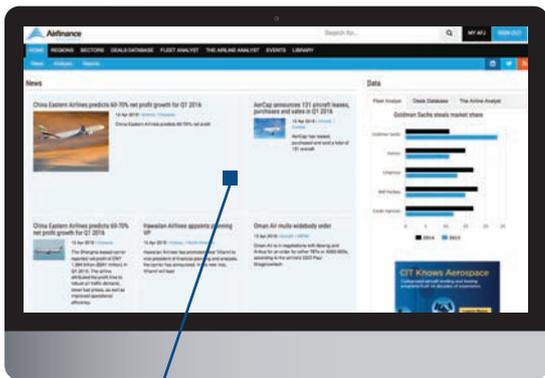


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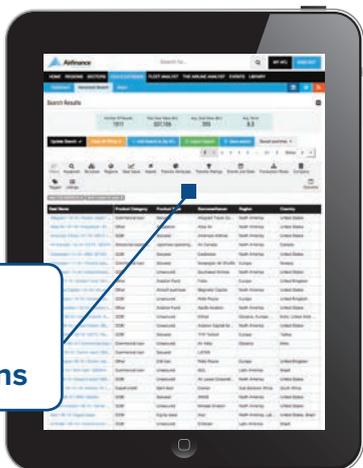
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MANUFACTURER PROFILES

Mitsubishi

The Mitsubishi Aircraft Corporation is owned principally by Mitsubishi Heavy Industries, but has a number of smaller stakeholders, including the Toyota Motor Corporation. The company is developing the MRJ family of regional jets.

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.

On 23 January, the company announced a further delay to the MRJ programme, with the first delivery now scheduled for mid-2020 rather than mid-2018 as previously planned.

This is not the first time the MRJ has encountered setbacks. In April 2015, Mitsubishi Aircraft announced a delay in the first flight from the second to the third quarter of 2015.

Aircraft testing

Mitsubishi Aircraft has used two aircraft for strength test. One is used for fatigue strength test, while the other has completed the static strength test.

"The completion of static strength test confirmed that the MRJ airframe has the structural strength required for test centre," states Mitsubishi Aircraft.

Four aircraft are in flight test. Three flight test aircraft (one, two and four) have successfully conducted ferry flights and flight tests are undergoing in the US. The fourth aircraft is undergoing flights test in Japan.

The new final assembly hangar has been completed and is ready for production

Customers

The dominant market for regional aircraft

is the US, and this is reflected in the MRJ orderbook. This includes a firm order of 50 MRJ90 units for Tran States Holdings, 100 orders from Skywest and 20 units from Eastern Airlines.

All three US operators have conversion rights for the 70-seat variant, according to Hideyuki Kamiya, head of strategic marketing, Mitsubishi Aircraft.

The MRJ also has 10 units on order from Miami-based lessor Aerolease. In addition, the aircraft has secured three non-US customers so far, including ANA, Air Mandalay and Japan's flag carrier Japan Airlines.

In the US market there are two important limits that set the size of aircraft for routes applications: the maximum limit of 76 seats and the 86,000lb maximum take-off weight (MTOW) limit.

The 86,000 MTOW limit has created problems for the manufacturers because new-technology aircraft, equipped with new, efficient high-bypass engines, turn out heavier than 86,000lb in their 76-seat variants.

The manufacturers of new-technology aircraft gambled on the scope clause MTOW limit being raised by the end of the decade. The unchanged MTOW limit favours the two aircraft types that fit under the scope clauses: Bombardier's CRJ900 and Embraer's E175. But it makes life difficult for new products such as the MRJ90 and Embraer's E175-E2, which currently exceed the scope limit.

The MRJ90 MTOW is 94,000lbs, but Kamiya says the configuration depends on the customer.

"I think they will update and will be able to reduce it if needed," he tells *Airfinance Journal* on the sidelines of the 19th Annual

Global Airfinance Conference Dublin 2017.

Embraer has planned a 2020 entry-into-service for its E175-E2, and Mitsubishi's recent announcement to delay the planned entry-into-service by two years to mid-2020 would give airlines more time to reach new scope agreements, allowing a higher MTOW.

"We can't forecast the timing of scope clauses but, historically, it has expanded. Mitsubishi's products are good aircraft to relax the scope clauses," says Kamiya.

The smaller MRJ70 would fit the current scope clauses. Kamiya says the model is the same size as the CRJ700 and the E170 products. "There are 500 aircraft in this category in the US," he adds.

The MRJ70 is the smaller next-generation aircraft available, and Mitsubishi is targeting CRJ200 and CRJ700 operators in the US market.

Kamiya says deliveries are expected initially to reach one aircraft a month, with an ultimate goal of 10 aircraft a month.

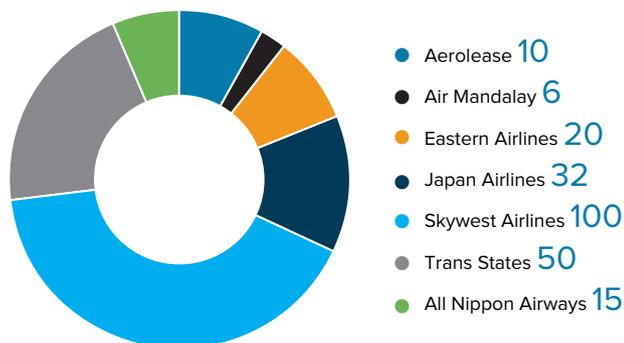
Lessors represent 10 firm aircraft, or 4% of firm orders. Rockton announced a letter of intent for 10 units at the 2016 Farnborough Airshow, and Kamiya is confident the Swedish leasing entity will firm its order.

As of 31 January 2017, the MRJ has recorded 233 firm orders and 194 options or purchase rights. "Lessors will endorse the MRJ programme," he says, adding they will have the capability to remarket.

Overall, Kamiya is confident the MRJ programme will perform well.

"Compared with the E2, we started the design from scratch. The MRJ has an optimised fuselage. The wing accommodates a high bypass ratio engine. It gives us some advantages over a re-engined aircraft," he says. ▲

Orderbook for **MRJ90**



53 Orders from Asia 23%

190 Orders from North America 77%

Source: *Airfinance Journal's* Fleet Tracker

MANUFACTURER PROFILES

Sukhoi Civil Aircraft Company

Sukhoi Civil Aircraft Company (SCAC) is a civil division of Russia's Sukhoi Aviation Holding (a UAC company), manufacturing the Sukhoi Superjet 100 aircraft (SSJ100). There are 85 SSJ100 in the active global regional fleet and a further 164 on order, according to Airfinance Journal's Fleet Tracker.

The company's main in-production civil programme – the Sukhoi Superjet 100 (SSJ100) – was designed in cooperation with several foreign partners, but production is based in Russia. The aircraft entered service in 2011 after certification from the Russian authorities. Certification by Western authorities followed, although not without some difficulties. The aircraft is designed to compete internationally with its Embraer and Bombardier counterparts.

The aircraft's SaM-146 engines are designed and produced by the Franco-Russian PowerJet joint venture between Snecma (Safran) and NPO Saturn.

Worldwide marketing is undertaken by SuperJet International, which is a partnership between Sukhoi Aviation



Source: Sukhoi

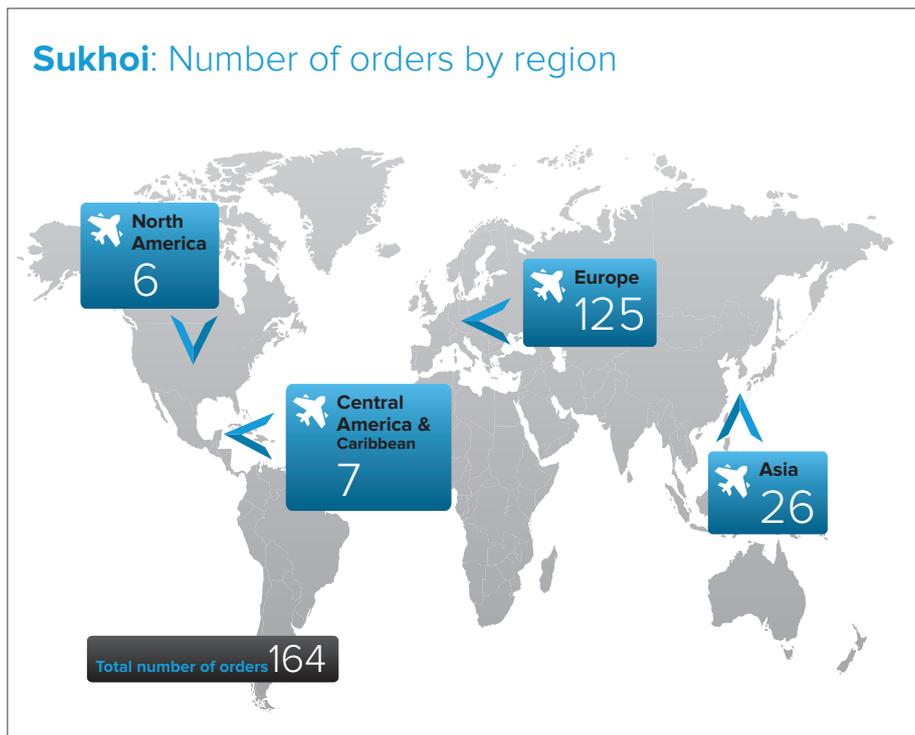
Holding and Alenia Aermacchi, a division of Italian aerospace conglomerate Leonardo (formerly known as Finmeccanica). The current-production models are the 100-seater SSJ100 in Basic version with a range of 3048 km and a long range (LR) version of 4578 km range.

The company announced at the 2016 Farnborough Airshow that it is developing a stretched version to accommodate 120 passengers. This aircraft may bridge the gap between the Sukhoi Superjet 100 and the Irkut MC-21. It will act as a competitor to the Bombardier CSeries, Airbus A319 and smaller models of the 737NG.

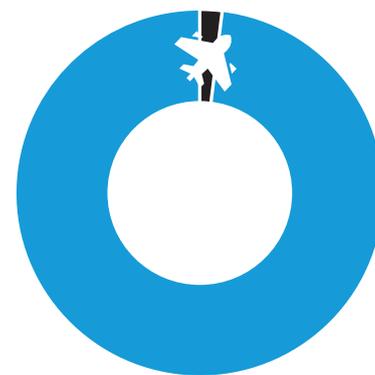
Overall, the Sukhoi Superjet 100 has

239 firm orders, excluding options, according to Fleet Tracker. Some of the larger orders for the aircraft include an order of 30 from Aeroflot, made in 2005; an order for 30 made by Mexican carrier InterJet in 2011; and, more recently, an order for 32 aircraft, with options for 28 from Russian lessor GTLK. Irish regional carrier CityJet also placed a firm order for 15 SSJ100s with 16 options in October 2015, marking another international order for the aircraft.

The programme suffered a blow in May 2012 when a test flight of the SSJ100 crashed into a mountain, killing all 45 people on board. The programme also suffered a set back in January 2017, when some operators had to ground several of its SSJ100s for safety reasons. Cracks were found in the tail section of one aircraft, forcing the Russian authorities to order safety inspections of SSJ100. However all the aircraft with the technical issue have been repaired by the manufacturer the same month and SSJ100 resumed flights. ▲



Source: Airfinance Journal's Fleet Tracker



1.1% of global regional aircraft fleet

107 Sukhoi aircraft in the current fleet

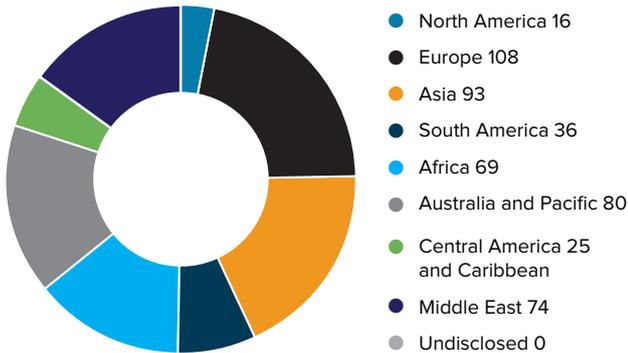
Other regional manufacturers

As well as the in-production aircraft types, there is a significant portion of the current regional fleet that is made up of older aircraft models. According to *Airfinance Journal's* Fleet Tracker, 1,833 out of production aircraft are in the current regional fleet today, making up 20% of the total current global regional fleet.

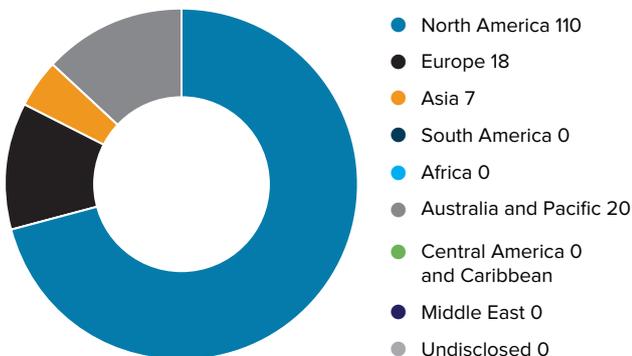
These include aircraft from British Aerospace, Fokker, Saab, Short Brothers and Boeing. Although it stopped being produced in 2002, the BAe 146 remains a particularly popular regional aircraft today, with its primary users including Ireland's CityJet and Brussels Airlines.

There are 246 Bae 146s in the current regional fleet today, according to Fleet Tracker. The charts illustrates percentages of out-of-production aircraft current global regional fleet. [^](#)

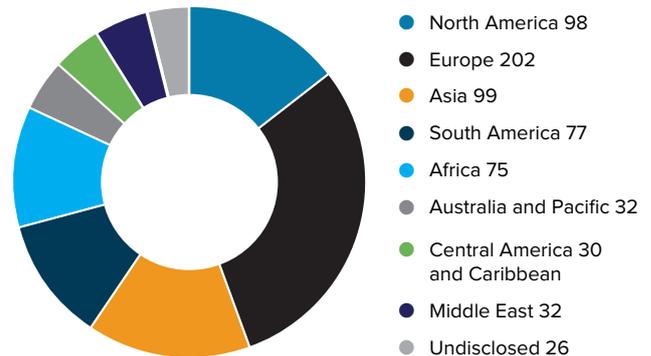
Fokker: number of aircraft in current global regional fleet



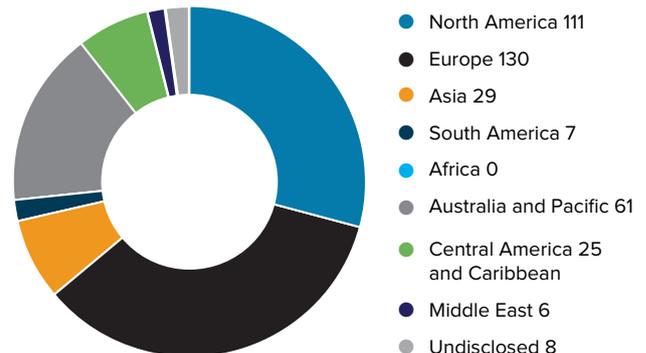
Boeing: number of aircraft in current global regional fleet



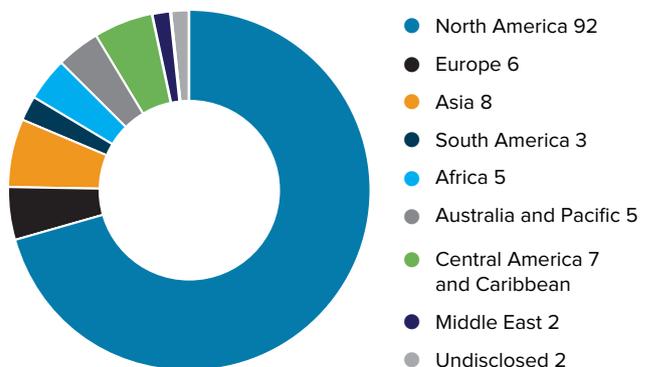
BAE: number of aircraft in current global regional fleet



Saab: number of aircraft in current global regional fleet



Shorts: number of aircraft in current global regional fleet



Source: *Airfinance Journal's* Fleet Tracker

Softly, softly

The 50-seat regional aircraft market continues to experience challenging conditions, writes **Olivier Bonnassies**.



In 2016, appraisers expected the soft conditions in the turboprop market to remain as aircraft availability continued to rise. This softening started in 2015, according to Collateral Verifications vice-president Gueric Dechavanne.

One year ago, the number of ATRs in storage or moving between customers marginally increased to 148 units. At 27 January 2017, there were 131 ATR aircraft in storage, according to *Airfinance Journal's* Fleet Tracker.

ATR storage has stayed at the same level over the past year for 70-seat aircraft, reflecting challenging market conditions.

There were 83 ATR72s – notably 41 ATR72-500s and 21 ATR72-600s – in storage compared with 84 units in early 2016. A total of 37 ATR72s were advertised for sale or lease by Airfax, as of 17 January 2017.

On the 50-seat side, the storage situation has decreased. There are 44 ATR42s in storage compared with 64 in early 2016. A total of 26 ATR42s were advertised for sale or lease.

Storage of Bombardier aircraft has fallen slightly to 89 units during the past 12 months. There are 17 Q400 units in storage, along with 33 Dash8-100s, 15 Dash8-200s and 24 Dash8-300/Q300s.

“The Q300 market is an interesting market at the moment because prices are going down for no apparent reasons,” says one leasing source. “It is a versatile but also a robust aircraft for operations in rough airfields,” he adds.

The source notes a recent increase in availability after announcements made by Air New Zealand to phase out its fleet slowly, while US regional carrier Commutair will get some Embraer ERJ-145s.

Early Q300 models are trading at about \$5 million, while latest models are about \$7 million, according to the source. The leasing market is in the \$50,000 to \$70,000-a-month range.

In the 50-seat market, the Saab 2000 aircraft is still a useful turboprop, despite its small fleet in operation. About 45 units are still operated in commercial passenger

roles while another 10 are in military use and government institutions.

“It is a resilient fleet,” says the lessor source. “The [Russian carrier] Polet fleet are the only aircraft available because of the bankruptcy,” he says.

Demand is mainly emerging from Europe, with Loganair and Eastern Airways adding units. Saab registered two new customers in 2016: Skywork in Sweden and Tus Airways of Cyprus.

US regional carrier PenAir continues to add Saab 2000s to its fleet and has now five units in operations.

In the meantime, more aircraft could be phased out by Swiss carrier Darwin and Sweden’s Braathens Aviation.

Lease rates are about \$40,000 a month for a Saab 2000, says the source.

The ATR42 market is holding up reasonably well. A total of 11 aircraft are advertised, according to Airfax.

The lease rate reference for an ATR42 is between \$50,000 and \$55,000, says an airline source, adding or retrieving \$10,000 a month depending on the credit.

Large turboprops under pressure

The high level of storage in the 70-seat market, notably ATR products, is putting the market under pressure, despite oil prices remaining at reasonable levels.

There are 41 ATR72-500s in storage or transiting between customers, and more than half of the fleet is advertised for sale or lease.

Lease rates can range between \$75,000 and \$85,000 for older ATR72-500s, according to the airline source. He adds that 2002-vintage aircraft are leased at less than \$80,000 a month, while a 10-year model can reach \$100,000 a month.

More challenging lessees will lease in the \$120,000-a-month range, according to another lessor.

There is definitely some softening in the market for new Q400s and ATR72-600s for placements.

In 2015, there was a slight decline in turboprop values reported. The turboprop market had been undersupply for a long time and ATR has ramped up production in recent years to catch up with demand.

But, in the meantime, the ATR72-600 model has been subject to aggressive bidding from some leasing companies and this has translated into some softening in lease rates.

"We are not happy where lease rates for the -600 series are," says one source. "At the moment, we will be happy with placements at \$180,000 a month," he adds.

The lessor representative also notes less aggressiveness in the Q400 market to place more aircraft. Still, Q400 lease rates have softened.

"The Q400 market is not a selling market. In terms of placements, aircraft with new interiors can get placed at \$150,000 a month in the second-hand market with weak credits. The rate drops to the \$130,000 region for better credit airlines."

But he is optimistic about the Q400 market. "Six months ago, we were looking hard about where we could place aircraft. We are more comfortable to find homes now," he says.

New Q400 placements almost reach \$200,000 a month, while older models are below \$110,000 a month. The economics of the turboprops over the regional jets in a high fuel environment are not questionable but the past year has seen oil prices at between \$28 a barrel and \$55 a barrel. This may have prompted some operators not to rush to replace aircraft.

Turboprop values tend to stabilise and bounce back "fairly quickly" as soon as demand returns, and with oil prices creeping up, market conditions could improve this year.

The high level of storage in the 70-seat market, notably ATR products, is putting the market under pressure, despite oil prices remaining at reasonable levels.

50-seat RJs

The 50-seat regional jet market has improved over the past year as a result of the current level of oil prices. There are 134 ERJ-145s in storage, with half of them offered for sale or lease.

Embraer ERJ-145 fleets have traded reasonably well over the past year but this mainly is a seller's market.

The reference pricing point is between \$1 million and \$1.5 million for an ERJ-145, but investment could be needed as most US-based fleets have no airstairs, because regional airlines have access to jetways.

Some past trades have recorded as much as \$2 million but the majority of deals over the past two years have been between \$750,000 and \$1 million.

It is a distressed market because owners, which are mainly financial institutions, generally try to sell at a discount rate.

The news that ExpressJet will be offloading 75 aircraft may add further pressure on the market, despite some pockets of demand emerging over the past few years.

Mexico's TAR Aerolineas has been taking former Mesa units while Calafia Airlines, also in Mexico, has taken some Trans States aircraft. It has now four ERJ-145s after recently taking delivery of a 2001-vintage ex-Mesa aircraft from AeroVision Aircraft Services.

Trading company Regional One has been buying some units lately.

In November 2015, US regional carrier CommutAir announced it will add 40 ERJ-145s to its all-turboprop fleet, expanding its operations with partner United Airlines at the New York Newark and Washington Dulles bases.

Other US regional airlines, including Republic Airways and SkyWest, have been downsizing their 50-seat regional fleets in favour of 76-seat regional jets for their mainline partners.

Fleet concentration has not helped remarketing US fleets outside the US because they are not EASA-compliant and need investments, especially in the

navigation systems required in Europe.

Airstairs can cost owners \$400,000, including \$200,000 for the stairs alone, while another \$100,000 has to be budgeted for the service bulletin. Installation and fitting make the most of the remaining costs.

The part-out market is limited because of high penetration of Rolls-Royce service agreements. "There are no buyers for part-out scenarios because more than 95% of the fleet is under the Rolls-Royce TotalCare scheme," says a leasing source.

The airframe would sell, in a part-out scenario, at \$225,000 to \$250,000, while each engine would cost \$325,000 to \$350,000.

The source sees lease rates in the US between \$30,000 and \$35,000 a month, depending on the credit and on multiple aircraft deals basis.

Some transactions have closed in the \$45,000 to \$50,000-a-month range plus maintenance reserves, says a leasing source.

Lease rates in Europe are about \$50,000. A trading source says that lease rates are between \$30,000 and \$55,000 across the board.

Good-condition aircraft should sell in the \$1.5 million to \$1.75 million range, says a trading source.

The 50-seat CRJ market has been a seller's market for a long time. According to Fleet Tracker, there are 102 Bombardier CRJ200s but only one-third is advertised for sale or lease.

Sources say the units sell at a low level, about \$1 million. A typical 15-year-old aircraft would be offered in the market for about \$1.5 million.

A run out aircraft would sell below \$1 million, says one source. In a part-out scenario, engines would sell between \$250,000 and \$300,000, he adds.

The top-end of the market commands prices in the \$1.5 million to \$1.7 million range.

A trading source says lease rates are typically between \$30,000 and \$40,000 for older models while the newest aircraft, especially with more green-time in the engines, command higher rates, adds the source.

Fleet Tracker recorded about 60 transactions in 2016 involving CRJ200s. Notably some aircraft were placed with RusLine and Yamal Airlines in Russia and Air Georgian in Georgia.

Applications have also developed in the African market with CemAir and FlightPro Zambia adding aircraft last year and in South America with Boliviana and Star Peru. SR Jet in China has taken delivery of four CRJ200s that were previously operated by China Yunnan and China Eastern Airlines. 