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the global airline scene

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**Paris Air  
Show**

Full Le Bourget  
Report

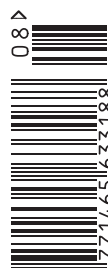


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Full **Le Bourget** Report

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THIS PHOTO: *Qatar Airways is looking to redeploy excess capacity to new markets.*  
QATAR AIRWAYS

The 2017 Paris Air Show has understandably dominated column inches over the last few weeks (our comprehensive report starts on page 5). But while much of the world's attention has been on Le Bourget, one of the more remarkable stories this month comes from the Middle East where Qatar Airways finds itself embroiled in the middle of a diplomatic crisis.

The sudden and wide-reaching blockade imposed by Gulf neighbours Saudi Arabia, the UAE, Bahrain and Egypt in early June has left Doha reeling and has had significant implications for the flag carrier in particular. Now unable to access any of the surrounding nations or their airspace, Qatar Airways was forced to cancel services to Saudi Arabia and the UAE, its two biggest single markets accounting for almost 20% of its schedule. On a wider scale, the blockade essentially has Qatar surrounded so aircraft must instead route either north towards Iran or northeast around the Arabian Peninsula. Services to São Paulo, for example, must now make a sizeable diversion, increasing the average flying time by 2 hours to 15hrs 30mins. Similarly, the three-or-so hour flight to Khartoum has almost doubled in duration.

The action does, of course, have financial repercussions. There are costs associated with cancelled flights, terminated routes and extended flying times. And then there's a longer-term impact to consider. Qatar Airways has very few domestic connections and is heavily reliant on international and transit traffic, including feeding passengers from one long-haul flight to another and also to and from its Gulf neighbours. Not only must the carrier

contend with a loss of traffic, but given passengers can no longer use Doha as a regional hub, there's an increasing risk they may switch to an alternative airline or cancel entirely.

Outwardly Qatar Airways is putting a brave face on it, suggesting it remains "business as usual", but there's little doubt it's in a difficult position and has been effectively neutered, at least from a regional perspective. The carrier's outspoken CEO Akbar Al Baker has questioned the legality of the blockade but, while the airline and IATA have called for a quick resolution, the situation transcends aviation and it's unclear how long it will continue.

In the short term, the only real winners are local rivals, such as Emirates and Etihad Airways, which continue to fly largely unaffected from Dubai and Abu Dhabi, and are still able to offer that transit function that is so important for the Gulf carriers. But given these airlines are already subject to a US ban on electronic devices in the cabin, and are struggling to cope with falling oil prices and currency fluctuations, this really has come at a bad time and deals a significant blow to public confidence not just in those carriers but in the region's entire aviation sector.

**Craig West**  
Editor

*Craig*



COVER: **Thomas Cook Airbus A330.**  
AVIATION IMAGE NETWORK/SIMON GREGORY



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# Boeing Triumphs in Sizzling Paris

SWELTERING TEMPERATURES dominated the 52nd International Paris Air Show, where Boeing scored a rare victory over its rival, Airbus, at Le Bourget. The show, which ran from June 19 to 25 and was opened by newly elected French President Emmanuel Macron, attracted 322,000 visitors, 8% fewer than in 2015, with 142,000 visiting on the trade days (6% down on two years ago). Organisers say the decline in visitor numbers was due to increased security measures and the extreme heat. Deals worth \$150bn were announced at the event, which saw a new record for the number of orders placed. This included agreements for 934 commercial aircraft.

Boeing launched the much talked about 737 MAX 10 on day one of the show and followed it up with a series of customer commitments that enabled it to steal a march on Airbus. The North American firm won orders and commitments for 571 aircraft valued at \$74.6bn compared with Airbus' 346 worth in excess of \$40bn.

John Leahy, Airbus' COO – Customers, played down Boeing's success, rightly pointing out that several of the announcements were customers converting from another member of the MAX family or the identification of previously undisclosed customers. However, Boeing's steady drumbeat of announcements gave the US



company undeniable momentum, which Airbus struggled to respond to. Boeing also openly about its 'new midsize airplane' (NMA) project, dubbed by outsiders as the 797. It confirmed the board had given it the green light to offer the project to the market and gave details on the planned construction, range and capacity of the aircraft.

Leahy claimed Airbus had expected orders to be down on previous years and, with a backlog of 6,800-plus aircraft already in place, the defeat will have been more an irritation than a cause for concern.

Aside from the big two, Embraer won many admirers with an eye-catching eagle livery on its E195-E2. The Brazilian manufacturer announced it was making big strides with the certification of the smaller E190-E2 and that it remained on track to enter revenue service by the middle of next year. It also won several new orders for its existing E1 range. Bombardier scored several important commitments for its Dash 8-Q400, more than doubling the backlog for the turboprop, while ATR quietly went about its business at the show, winning orders from emerging markets in China and Africa.

Away from the airframers, engine manufacturer CFM International concluded \$27.3bn worth of business while rival Pratt & Whitney secured deals to supply its PW150C engine to AVIC for the MA700 and its PurePower Geared Turbofan

powerplant to IAG for 47 of the firm's A320neos. Rolls-Royce added a \$1.5bn deal to provide Trent XWB engines for Ethiopian Airlines' latest A350 order while China Southern Airlines chose General Electric's GEnx-1B engines to power its 15 new Boeing 787-9 Dreamliners in an agreement worth \$860m.

There was plenty of new technology on show at Le Bourget for the first time including the Boeing 787-10 Dreamliner, 737 MAX 9, the Airbus A350-1000 and A321neo, Embraer's E195-E2, Lockheed Martin's LM-100J, and the Antonov An-132D.

Russian regional jet manufacturer Sukhoi Civil Aircraft Company displayed a Superjet 100 for Mexico's Interjet, but failed to announce any new business, while Viking also attended with a Viking 400 destined for Caverton Helicopters in Nigeria.



TOP • Boeing sales chief Ihssane Mounir and his team scored an impressive victory in Paris.

ABOVE • Antonov's An-132D was among the show debutants. BOTH KEY-JAMES RONAYNE

MAIN • While visitor numbers were down, the show set a record for orders. AIRTEAMIMAGES.COM/ MATTHIEU DOUHAIRE





# Airbus Unveils Revamped A380

AIRBUS INTRODUCED the A380plus, a development study looking at providing efficiency improvements to the European manufacturer's flagship model. However, it has stopped short of re-engining the aircraft, which has failed to win a single order since All Nippon Airways signed for three airframes in January last year.

The most obvious alteration from the existing model is the addition of new split winglets, while Airbus is also proposing other changes including re-twisting the outer wing and adapting the belly fairing, which could provide up to 4% fuel burn reduction according to the manufacturer. Frank Vermeire, head of marketing for the A380 at Airbus, told journalists that the company was in "dialogue" with potential customers about the project, which could enter service around 2020 if given the green light. Vermeire refused to disclose the weight of the winglets or the strengthening required to accommodate them but said the A380plus aimed to be weight-neutral thanks to a series of interior modifications. This includes deleting two of the

internal waste tanks and replacing them with a new dual installation. Other changes feature new improved fuel tanks, a fourth-generation in-flight entertainment offering and flight management system (FMS).

As part of the project, Airbus is optimising the maintenance schedule, making the A380plus available for an extra six days each year compared with the existing variant. Potential customers could also benefit from up to 300nm (556km) extra range thanks to a 3t increase in the MTOW. In addition, Airbus has outlined plans to increase the seating capacity by up to 80 seats through the installation of new rear and forward staircases, the removal of sidewall storage bins on the upper deck, the creation of a combined flight and cabin crew rest area and the deactivation of door three. The European firm is also proposing nine-abreast seating in Premium Economy and 11-abreast in Economy, although it says it will retain its minimum 18in wide seats.

When pressed on whether this was a precursor to a re-engined variant,

Other changes include new variable lighting, sidewall panels providing an extra inch of space at shoulder level, new window bezels providing more space and a better view and a more spacious lavatory.

"The A320 offers airlines 40% more volume for their passengers' bags, accommodating larger carry-on bag dimensions than competing single-aisle airliners," said Ingo Wuggetzer, VP, Cabin Marketing. "More overhead space means quicker boarding times... and a better overall experience."

Airbus is targeting 2020 for the full Airspace interior package to be available and is also offering it as a retrofit to existing airframes.

Airbus announced in excess of \$40bn worth of new business in Paris, totalling 346 aircraft. This included firm orders for 144 aircraft and MoUs for 202. The European's firms biggest deal came from GECAS, which placed a firm order for 100 A320neo Family aircraft. Iran continues to be a good source for new business with Iran Airtour Airlines (45 A320neos) and Zagros Jet (20

A320neos and eight A330neos) both agreeing MoUs with the European aerospace giant.

Widebody announcements were scarce. The sole A350XWB contract came from Ethiopian Airlines which placed a follow-on order for ten -900s. Portuguese charter specialist Hi Fly made its first direct purchase with the manufacturer, agreeing a deal for two A330-200s. It was also confirmed that DHL had added four more A330-300 passenger-to-freighter (P2F) conversions to its existing four airframe agreement, plus options for a further ten. The conversions are being carried out by Elbe Flugzeugwerke, a joint venture between Airbus and ST Aerospace, in Dresden, Germany.

On day three, Airbus delivered the first A321neo to a European customer when it handed over TF-SKY (c/n 7694) to Icelandic budget carrier WOW air. The jet, which is powered by CFM Leap-1A engines, has been leased from Air Lease Corporation (ALC) and was presented to WOW air CEO Skúli Mogensen in the presence of Airbus COO – Customers John Leahy, ALC Executive Chairman Steven F Udvar-Hazy and CFM CEO Gaël Méheust.

Airbus displayed its A350-1000, F-WLXV (c/n 065) and A321neo D-AVXB (c/n 6839) in the daily flying programme, both aircraft making their show debuts. Leahy, one of the aviation industry's most recognisable figures, also outlined his retirement plans, stating he would not attend the Dubai Airshow in November. The straight talking New Yorker joined Airbus in 1995 and has since won more than \$1 trillion of business, helping shape Airbus as one of the world's leading manufacturers. Dr Kiran Rao, currently EVP, Product Strategy, has been lined up as Leahy's successor.

## Airbus Orders

Airline/Company	No	Type	Status
Air Lease Corporation	12	A321neo	Firm order
AirAsia	14	A320	MoU
CDB Leasing	30	A320neo	MoU
CDB Leasing	15	A321neo	MoU
Delta Air Lines	10	A321	Firm order
Ethiopian Airlines	10	A350-900	Firm order
GECAS	100	A320neo Family	Firm order
Hi Fly	2	A330-200	Firm order
Iran Airtours	45	A320neo	MoU
Tibet Financial Leasing	20	A321neo	MoU
Viva Air Colombia	35	A320neo	MoU
Viva Air Colombia	15	A320	MoU
Wizz Air	10	A321	Firm order
Zagros Airlines	20	A320neo	MoU
Zagros Airlines	8	A330neo	MoU

Vermeire said there was no plan to offer an A380neo in the near future. Airbus used retired test airframe, F-WWDD (c/n 004), recently donated to Musée de l'Air et de l'Espace at Le Bourget, as part of its static display with mock split winglets added.

On day one, the manufacturer unveiled its new A320 Airspace cabin interior. As part of the enhanced cabin offering, Airbus is installing new overhead bins, capable of carrying eight bags per four-frame unit rather than the current five.



Airbus displayed a mock-up of its A380plus project.  
KEY-JAMES RONAYNE



Airbus A350-1000 F-WLXV (c/n 065) was put through its paces during the daily flying display. KEY-JAMES RONAYNE





Boeing's 737 MAX 9, N7379E, graced the skies above Paris during the flying programme on the trade days.  
AIRTEAMIMAGES.COM/MATTHIEU DOUHAIRE

# MAX Momentum Boosts Boeing

BOEING STOLE the headlines in Paris with the launch of the much-anticipated 737 MAX 10 on day one, leading to a slew of customer announcements from the American manufacturer. Pitched as a direct competitor to the Airbus A321LR, the newest member of the MAX family is 66in (168cm) longer than the MAX 9, enabling it to carry up to 230 passengers, ten more than the MAX 9.

"The 737 MAX 10 extends the competitive advantage of the 737 MAX family and we're honoured that so many customers across the world have embraced the outstanding value it will bring to their fleets," said Boeing Commercial Airplanes President and CEO Kevin McAllister. In addition to the extended fuselage, the CFM International Leap-1B-powered MAX 10 will incorporate other changes over its stablemates including a flat aft pressure bulkhead (rather than the existing dome design), a modified wing to reduce low-speed drag and a levered main gear (rather than the existing straight strut). The latter modification helps accommodate the larger powerplant and shifts the rotation point backwards to give greater clearance for the longer fuselage.

Boeing won more than 361 orders and commitments for the MAX 10 from 16 lessors and operators. Incremental orders and agreements for all models during the week totalled 571 aircraft worth \$74.8bn at list prices. The Chicago-headquartered firm scored the single biggest order of the show, with a commitment for 125 737 MAX 8s, plus purchase rights for an additional 50 valued at \$14.1bn, from an unidentified "major airline customer".

India's SpiceJet signed an MoU for 40 MAX 10s, half of which have been converted from its existing orderbook for MAX 8s, while Ethiopian Airlines signed for ten MAX 8s and a pair of 777Fs. Luton-based Monarch Airlines exercised all 15 of the 737 MAX 8 options it held, as well as signing a Global Fleet

Care (previously GoldCare) deal with the newly formed Boeing Global Services business unit covering its entire MAX fleet. The two companies will also collaborate on securing additional third-party fleet servicing agreements via Monarch Aircraft Engineering Ltd. Ryanair placed a follow-up order for ten high-capacity 737 MAX 8s, previously dubbed the MAX 200, but renamed following the low-cost carrier's decision to install 197 seats.

It was also announced at the show that Italian leisure carrier Neos would become a MAX operator after signing a deal with lessor AerCap for two examples. Romanian budget airline Blue Air was unveiled as the previously unnamed customer behind an order for six 737 MAXs. Additionally, it was revealed that the Bucharest-based outfit has agreed to lease a further six MAXs and six 737-800s from Air Lease Corporation. United Airlines converted 100 airframes from its existing 737 MAX orderbook to the MAX 10 and also placed a welcome order for four 777-300ERs helping the manufacturer bridge the gap in production between its existing model and the new 777X offering.

Widebody orders were harder to come by although Boeing did score a deal for 30 787-9s from AerCap, and additional Dreamliner orders came from El Al, Azerbaijan Airlines, CDB Aviation Lease Finance and China's Okay Airways. This trend was backed up in the company's current market outlook (CMO), which rose 3.6% over last year's forecast. Boeing's new 20-year CMO predicts the need for 41,030 new aeroplanes valued at \$6.1 trillion. Low-cost carriers account for a significant portion of growth in the single-aisle segment, with 29,350 new aircraft required in the segment. Boeing is predicting a requirement for 9,130 in the widebody sector with the manufacturer saying demand in the 'very large airplane' market is focussed on freight operators. The US manufacturer garnered even more exposure after speaking publicly

for the first time about its 'new midsize airplane' (NMA) project, which it has been authorised to offer. The aircraft features a twin-aisle design with composite fuselage and wings, a seating capacity for between 220 and 270 and a 5,200nm (9,630km) range. Boeing estimates a market in excess of 4,000 airframes with projected first build in

2023 and entry into service in 2025. It says geared engine concepts are being studied from CFM as well as Rolls-Royce and Pratt & Whitney. Boeing displayed two test aircraft at Paris, 787-10 Dreamliner N528ZC (c/n 60256) and 737 MAX 9, N7379E (c/n 42987), the latter featuring in the flying display on the trade days.

## Boeing Orders

Airline/Company	No	Type	Status	Value
ACG	20	737 MAX 10	Firm order	\$2.5bn
AerCap	15	737 MAX 10	Firm order	Undisclosed
AerCap	30	787-9 Dreamliner	Firm order	\$8.1bn
ALAFCO	20	737 MAX 8	Commitment	\$2.2bn
ALC	5	737 MAX 7	MoU	\$1.2bn
ALC	7	737 MAX 8	MoU	
Avolon	75	737 MAX 8	MoU	\$8.4bn
Azerbaijan Airlines	4	787-9 Dreamliner	Commitment	\$1.1bn
Blue Air	6	737 MAX	Firm order	Undisclosed
BOC Aviation	10	737 MAX 10	MoU	\$1.2bn
CALC	35	737 MAX	Firm order	\$5.8bn
CALC	15	737 MAX 10	Firm order	
CDB Aviation Lease Finance	42	737 MAX 8	MoU	
CDB Aviation Lease Finance	10	737 MAX 10	MoU	\$7.4bn
CDB Aviation Lease Finance	8	787-9 Dreamliner	MoU	
Copa Airlines	15	737 MAX 10	Conversion	Undisclosed
Donghai Airlines	10	737 MAX 10	Conversion	\$1.2bn
EL AL	2	787-8 Dreamliner	Firm order	\$729m
EL AL	1	787-9 Dreamliner	Firm order	
Ethiopian Airlines	2	777F	Commitment	\$651m
Ethiopian Airlines	10	737 MAX 8	Firm order	Undisclosed
GECAS	20	737 MAX 10	Firm order	Undisclosed
Japan Investment Adviser	10	737 MAX 8	Commitment	\$1.1bn
Lion Air Group	50	737 MAX 10	Commitment	\$6.2bn
Malaysia Airlines	10	737 MAX 10	Conversion	\$1.25bn
Mauritania Airlines	1	737 MAX 8	Firm order	\$112.4m
Monarch	15	737 MAX 8	Firm order	\$1.7bn
Norwegian	2	737 MAX 8	Firm order	\$225m
Okay Airways	8	737 MAX 10	Firm order	
Okay Airways	7	737 MAX 8	Firm order	\$3.1bn
Okay Airways	5	787-9 Dreamliner	MoU	
Ruli Airlines	20	737 MAX	MoU	\$2.2bn
Ryanair	10	737 MAX 8	Firm order	\$1.2bn
SpiceJet	40*	737 MAX 10	Firm order	\$2.5bn
Tassili Airlines	3	737-800	Firm order	\$294m
Tibet Financial Leasing	10	737 MAX 8	Firm order	\$2.3bn
Tibet Financial Leasing	10	737 MAX 10	Firm order	
TUI Group	18	737 MAX 10	Conversion	Undisclosed
Unidentified	125**	737 MAX 8	Commitment	\$14.1bn
United	4	777-300ER	Firm order	\$1.4bn
United	100	737 MAX 10	Conversion	Undisclosed
Xiamen Airlines	10	737 MAX 10	MoU	\$1.2bn

\* incl 20 conversions \*\* +50 purchase rights



# Buoyant Embraer Secures More Orders

EMBRAER ANNOUNCED orders for 51 aircraft totalling \$3bn in Paris. In stark contrast to other manufacturers, the Brazilian firm revealed all its business, consisting of 18 firm orders and 33 commitments, in a single press briefing on day two of the show.

The firm deals consisted of a single E190 for JAL, two E190s for KLM Cityhopper, a single E175 and E195 for Belavia, three E175s for Fuji Dream Airlines and ten E195-E2s for an undisclosed customer. That company has also taken ten purchase rights for the E190-E2 while the other commitments include an LOI for 20 E190-E2s from an undisclosed customer and three purchase rights for E175s from Fuji Dream Airlines.

The company's latest market outlook predicts a need for 6,400 aircraft in the 70-130 seat segment over the next 20 years valued at \$300bn, with Embraer saying most of that growth will come in the US (32%), Asia (27%) and Europe (18%).

John Slattery, President & CEO, Embraer Commercial Aviation, proudly declared that the E2 family of aircraft remained on time and on budget, with the E190-E2 set to be in revenue service by June next year.

Luís Carlos Affonso, SVP of Operations and COO Commercial Aviation, revealed that the flight test campaign of the E190-E2 was 55% complete and that the aircraft was exceeding take-off targets for both hot and high, and short field operations. The Brazilian manufacturer claims the jet now flies 200nm (370km) further from Denver or 100nm (185km) further from London City than originally stated.

Affonso said the E195-E2 – one of the highlights of the show, resplendent in its eagle-themed livery and dubbed the 'Profit Hunter' – had also enjoyed a 150nm (278km) range increase thanks to an 800kg (1,764lb) MTOW increase. It can now fly 2,600nm (4,815km) with a 61,500kg (135,584lb) MTOW.



Embraer won many admirers for its superbly painted E195-E2. The jet, dubbed the 'Profit Hunter', was painted by one of the firm's engineers in his own time. KEY-JAMES RONAYNE

## Embraer Orders

Airline/Company	No	Type	Status	Value
Belavia	1	E175	Firm order	\$99.1m
	1	E195-E2	Firm order	
Fuji Dream Airlines	3 (+ 3 purchase rights)	E175	Firm order	\$274m
JAL	1	E190	Firm order	\$50.6m
KLM Cityhopper	2	E190	Firm order	\$101m
Undisclosed customer	20	E190-E2	LOI	\$1.2bn
Undisclosed customer	10	E190-E2	Purchase rights	Undisclosed
Undisclosed customer	10	E195-E2	Firm order	\$666m



John Slattery, President & CEO, Embraer Commercial Aviation, (fifth left) celebrates the latest deals in Paris with the Brazilian aerospace firm's customers. KEY-JAMES RONAYNE



## Bombardier Orders

Airline/Company	No	Type	Status	Value
SpiceJet	25 (+25 options)	Q400	LOI	\$1.7bn
PAL Express	7	Q400	Firm order	\$235m
Ethiopian Airlines	5	Q400	Firm order	\$162m
CemAir	2	Q400	LOI	\$65m

A factory fresh Dash 8-Q400 for WestJet Encore, C-GWEJ (c/n 4537), was on display during the show.

KEY-JAMES RONAYNE

# Sales Provide Q400 a Lifeline

BOMBARDIER'S DASH 8-Q400 turboprop received a major boost after the Canadian manufacturer secured 39 firms orders and 25 options.

The Q400 backlog prior to the show was 24 aircraft, which at the current production rate of 2.6 aircraft per month was less than a year's work. In the space of three days the Montreal-based firm more than doubled that figure.

India's SpiceJet was the largest customer, accounting for 50 airframes (25 firm orders and 25 purchase rights) in a deal worth up to \$1.7bn if all options are exercised.

Bombardier Commercial Aircraft President Fred Cromer said the agreement was "compelling evidence that the demand for turboprop aircraft is healthy in short- to medium-haul markets that can't economically support jets that are more expensive to operate".

Ajay Singh, Chairman and Managing Director of SpiceJet added: "The acquisition will help us further increase connectivity to smaller towns and cities and help realise Prime Minister Narendra Modi's vision of ensuring that every Indian can fly." Deliveries of the first examples, which will be configured in a high-density

86-seat layout, are expected early next year.

The SpiceJet deal came just hours after Philippine Airlines increased its outstanding Q400 order to 12 aircraft by firming up its seven purchase options. Bombardier confirmed Ethiopian Airlines as the undisclosed customer behind a five-aircraft order announced the week before the show, while South Africa's CemAir signed an LOI for two airframes.

Although Bombardier failed to secure any new business for the C Series programme, Cromer was upbeat: "We are pleased that airlines around the world are demonstrating growing interest as they witness the C Series performance and hear about the overwhelming positive feedback from passengers and our launch operators."

The CS300 launch operator airBaltic showcased its latest aircraft, YL-CSE (c/n 55007), which had only been handed over to the carrier four days prior to the show. During a media briefing airBaltic CEO Martin Gauss extolled the virtues of the type's trouble-free introduction, revealing the airline's previous example, YL-CSD (c/n 55006), had entered revenue service within four hours of being delivered to Riga.



# ATR Forgoes the Fanfare

FRANCO/ITALIAN turboprop specialist ATR added a further 17 orders to its backlog during the show, without too much fanfare.

China's Shaanxi Tianju Investment Group (Tianju) signed a letter of intent (LOI) for ten ATR 42-600s as it looks to develop commuter services in Xinjiang. Xuzhou Hantong Aviation Development Co has similar plans for the three ATR 42-600s it signed an LOI for, this time to cover the Jiangsu province. ATR says deliveries to both companies are likely to start in 2018.

Air Senegal, the new national airline of the West African state, signed a firm order for two ATR 72-600s valued at €50m, which it will use to launch operations. The aircraft will be delivered in November in time for Air Senegal's inauguration ceremony on December 7. Sweden's Braathens Regional Airlines and long-term customer Air Tahiti both agreed deals for a single ATR 72-600.

## ATR Orders

Airline/Company	No	Type	Status
Air Senegal	2	ATR72-600	Firm order
Air Tahiti	1	ATR72-600	Firm order
Braathens Regional Airlines	1	ATR72-600	Firm order
Tianju	10	ATR42-600	MoU
Xuzhou Hantong	3	ATR42-600	Firm order

Despite a reduced presence at the show, the company showed off an ATR 72-600 in the livery of IndiGo in the static display. The deal with the Indian low-cost carrier, for 20 airframes plus 20 options, is one of two big ticket deals ATR signed earlier this year, the other being with Iran Air for 50 ATR 72-600s.

"The level of sales we have booked in less than six months reflects a positive evolution in the market, and that the ATR aircraft are the optimal choice to open new routes at the lowest operating costs for airlines," said Christian Scherer, CEO of ATR. "No matter where there is potential for regional connectivity, our aircraft provide the best solution at lower risks."

The Toulouse-based manufacturer is finalising the evaluation for the launch of a STOL variant of its smallest aircraft – the ATR 42-600S. Scherer declared: "Facilitating the emergence of future traffic as well as maintaining the connectivity of communities is at the heart of ATR's role. This is why we have decided to further address the challenges of airfield accessibility, allowing growth in air services for remote areas as well. We are now proposing the ATR 42-600S to our operators and we look forward to positive feedback from the market."

Show-goers got a first glimpse of an ATR 72-600 in the colours of Indian low-cost carrier IndiGo. KEY-JAMES RONAYNE



## Boom Makes Strides

SUPERSONIC AIRCRAFT developer Boom Aerospace hopes to fly its XB-1 'Baby Boom' proof-of-concept design in late 2018, the manufacturer announced at Paris. Assembly will begin later this year, 48 years after Concorde first appeared at the Paris Air Show. Virgin Group remains the only publicly identified customer for the full-scale aircraft so far, but Boom says it has won 76 orders from five world airlines. Virgin will take delivery of the first

ten examples to be handed over. Boom also unveiled a new configuration for the aircraft at the show. As well as the original all-Business Class cabin with 55 seats in a 1-1 layout, Boom is proposing a new two-class configuration with 30 First Class seats and 15 in Business Class. Boom claims the aircraft is 10% faster than Concorde and 30 times quieter, with a transatlantic round-trip expected to set customers back \$5,000.



Mitsubishi Aircraft's MRJ90 was one of the debutants at this year's show. KEY-JAMES RONAYNE

## Slow Progress for MRJ

MITSUBISHI AIRCRAFT debuted its MRJ90 at Paris but failed to attract further orders for the jet. A recent internal review of the project highlighted issues with the aircraft's electrical system and avionics bay which are being examined. The company told reporters that as a result it had reconfigured the avionics bay and frozen the design, and would begin testing it shortly.

The Japanese manufacturer will add another aircraft to its five-airframe test fleet to speed up certification and has not ruled out adding a further example,

as it looks to meet its revised 2020 date for entry into service.

Alex Bellamy, Senior Director of the Programme Management Office at Mitsubishi Aircraft, said the decision to bring the MRJ90 to Paris was taken to highlight the progress being made. The aircraft displayed – JA23MJ (c/n 10003), which wore the colours of launch operator All Nippon Airways – visited Exeter en route back to the company's test facility in Moses Lake, Washington State, where it was demonstrated to Flybe.

## Qatar Airways Unveils QSuite



Jassim Saif Al-Sulaiti, Qatar's Minister of Transport and Communications, flanked by Qatar Airways Group Chief Executive Akbar Al Baker (left) and Ray Conner, Vice Chairman of the Boeing Company (right), cuts the ribbon as the airline unveils its new QSuite Business Class offering. "This product will transform premium travel by bringing a First Class experience to the Business Class cabin," Al Baker told reporters. Boeing 777-300ER A7-BED (c/n 60330) was used to showcase the QSuite which is debuting on Qatar Airways' Doha to Heathrow route. QATAR AIRWAYS

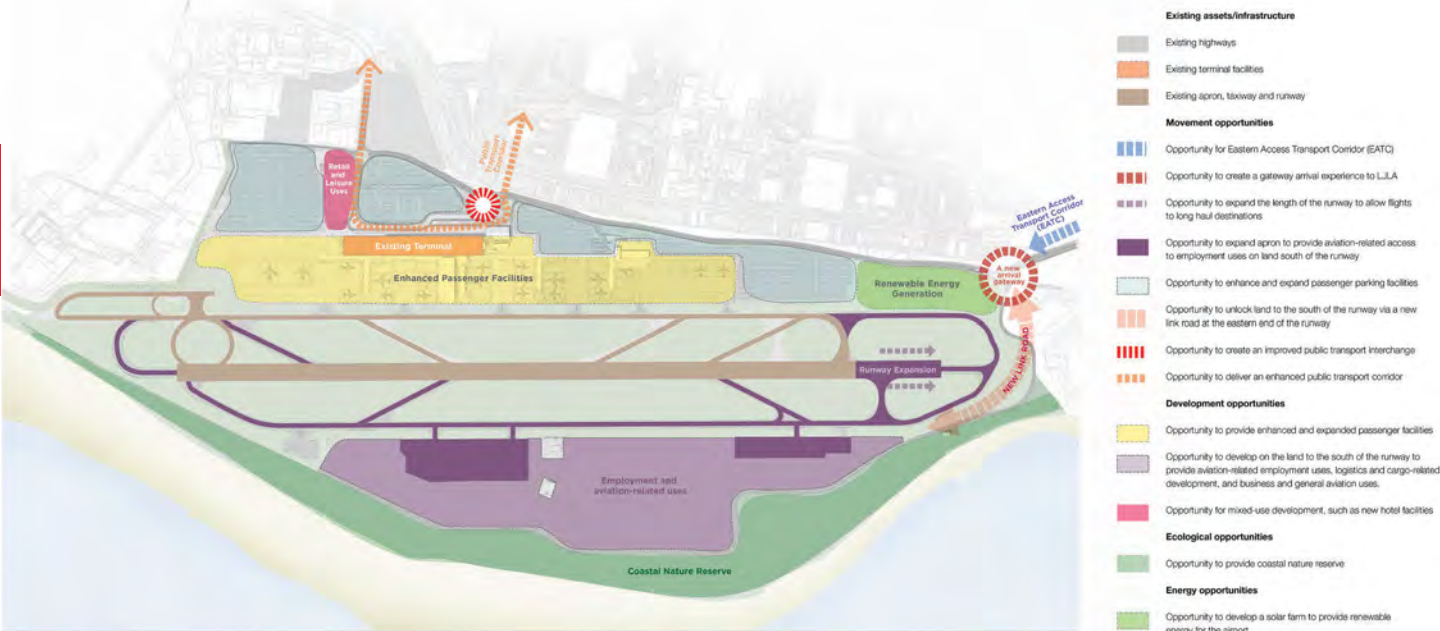
# Grand Plans at Liverpool

LIVERPOOL JOHN Lennon Airport (LJLA) has unveiled a proposal to more than double passenger traffic over the next three decades under the latest draft of its Airport Master Plan. The document, which is now subject to a four-week public consultation, sets out the facility's long-term vision for future development and expansion of its business up to 2030, and to 2050. This includes the intention to open new

short- and long-haul destinations, with passenger numbers expected to swell from the current 4.8m per year to 7.8m over the next 12 years, and up to 11m by 2050. This will be supported, the airport said, by an expansion of the terminal building, additional car parking, new passenger facilities including hotels, retail, food and drink services, and a potential extension of the runway. Mark Povall, Strategy Director for LJLA

commented: "Our ambitious plans will help the airport to maximise its contribution to the regeneration and renaissance of Liverpool as an international city and play a key role in the economic growth of the Liverpool City Region and across the Northern Powerhouse." He added: "Through our growth we also want to continue to be good neighbours. We are holding a series of consultation events to explain the physical changes

proposed under the Master Plan to 2050, and to reassure communities that noise controls and improvements in airline technology, will ensure an overall reduction in the areas impacted by noise from airport operations." The Master Plan, which also proposes a new industrial development between the airfield and the Mersey shoreline, is expected to be finalised and published later this year. (Photo LJLA)



## Fokker Farewell

The impending retirement of KLM Cityhopper's last Fokker 70s later this year will mark the end of a 97-year association between the carrier and the Dutch manufacturer. To mark the occasion and celebrate its partnership, the airline has paid tribute to founder Anthony Fokker, incorporating his portrait and a message of thanks, on PH-KZU (c/n 11543). PHIL WOODS



## Belfast City Acquisition Completed

A FUND managed by investment company 3i Group has taken ownership of George Best Belfast City Airport from former owner EISER Global Infrastructure Fund. The deal was initially announced last December as part of a wider transaction covering a portfolio of assets including the airport, but was subject to various conditions including approval from the European Commission. Belfast City Airport CEO Brian Ambrose

commented: "3i's arrival is another important landmark in what has been an exciting period of expansion for the business. "We have a stellar airline portfolio, including blue-chip brands such as KLM, Flybe, British Airways and Aer Lingus, and we are confident of continuing to grow our route network and the profitability of the business in years to come."

## Contingency Plans at BA

BRITISH AIRWAYS (BA) has struck a deal with Qatar Airways to acquire up to nine Airbus narrowbody aircraft to cover its operations during planned strike action. The aircraft, including both A320s and A321s, were due to be wet-leased from July 1 and will initially fly for the London/Heathrow-based carrier for two weeks, though paperwork submitted by BA to the CAA said the arrangement would also cover "additional periods, yet to be defined, for a maximum of two months." The application to wet-lease non-Euro-

pean registered aircraft was made "on the grounds that the lease is justified on the basis of exceptional needs... to enable British Airways to continue passenger operations in light of planned operational disruption by its Mixed Fleet cabin crew." The decision comes in the face of an unprecedented 16-day strike – the latest in a long-running pay dispute – by the carrier's Mixed Fleet staff, who account for around 35% of its 15,000 cabin crew. The Unite union, which is behind the

industrial action, has urged the CAA to block the application, warning that "the lease could be in breach of aviation law, if British Airways was unable to demonstrate that an equivalent level of safety standards would be applied to the aircraft." As *Airliner World* went to press, the CAA had yet to formally respond to the request. BA has, however, already cancelled a host of long-haul services, but said its short-haul operations would be unaffected. (Photo Qatar Airways)





## in brief

British start-up **Firmas Airways** said it now intends to launch services later this year under a revised business plan that will see the new carrier shift from long- to short-haul operations. The airline originally expected to fly between the UK and Bangladesh using Boeing 767s starting late last year, but an updated investor's prospectus released in June reveals its initial focus will instead be on currently underserved domestic and European connections. Firmas' founder and CEO Kazi Shafiqur Rahman said flights will start with ATR and Jetstream turboprops, with "medium-sized aircraft" following within 18-24 months.

Latvian charter carrier **RAF-Avia** has acquired its first ATR 72-200. The former CanaryFly example, EC-GRU (c/n 493), underwent passenger-to-freighter conversion with Binter Technic in Las Palmas before joining the Riga-based carrier in May.

**Azores Airlines** has contracted British aircraft remarketing specialist Moon Jet Group to oversee the sale of its three Airbus A310s. The aircraft, CS-TGU (c/n 571), CS-TKN (c/n 624) and CS-TGV (c/n 651), were the backbone of the Ponta Delgada-based carrier's widebody fleet but are being phased out in favour of more modern A330s and A321LRs – the long-range variant of the A321neo – under the airline's five-year modernisation plan. The A310s, which are configured in a two-class, 222-seat layout, are available for immediate sale. (Photo Wikicommons/Luc Verkuringen)



Irish low-cost carrier **Ryanair** has extended its connecting flights service following a successful trial at Rome/Fiumicino. The offering, which enables passengers flying with the Dublin-based airline to transfer through designated hubs, was rolled out at Milan/Bergamo on July 3. Ryanair said customers will now be able to book connecting flights on 25 (of up to 300 new routes) via Milan to points in Italy, Greece, Spain and Malta.

**Norwegian** has introduced its first non-stop transatlantic services from Scotland after opening new routes from Edinburgh to Stewart, New York, Providence, Rhode Island and Hartford, Connecticut. The new operation – launched on June 16 – coincided with the opening of a new base in the Scottish capital, it's second in the UK after London/Gatwick, with the creation of more than 130 jobs. Elsewhere, the carrier is also set to introduce new four-times weekly links between Gatwick and the Argentine capital Buenos Aires – it's 11th long-haul destination from the London hub. The 787-operated services are due to start in February.

# Lufthansa A380s Head to Munich

GERMAN FLAG carrier Lufthansa will transfer five Airbus A380s from Frankfurt to Munich next summer under new plans to overhaul its long-haul operation. Commenting on the decision, Munich Airport CEO Dr Michael Kerkloh said it was a "future-defining move". He added: "This is a big day for our competitiveness in the aviation industry. This now firmly anchors our status as one of the major hubs in Europe." Kerkloh cited the joint efforts of the carrier and the airport to develop a Munich hub, noting it was "now reaping the rewards of the very successful

partnership of Lufthansa and Munich Airport in the joint operation of Terminal 2 and the new satellite facility. "With the previously announced decision to station 15 A350 XWB long-haul aircraft and the additional five Airbus A380s, Lufthansa has now ensured that the state of Bavaria will have even better links to the global air transportation networks in the future." Lufthansa dismissed speculation its move to reallocate capacity away from Frankfurt was related to its currently strained relationship with airport operator Fraport, noting that Munich

was enjoying "very strong growth." The carrier has, however, been vocal about the German facility offering favourable rates to low-cost competitor Ryanair, which opened a base in Frankfurt earlier this year. Speaking in early June, Lufthansa executive board member Harry Hohmeister bemoaned the high charges and fees it was paying and suggested the flag carrier could shift its focus to other regional hubs such as Munich, Vienna and Zurich if a similar deal could not be struck. (Photo Lufthansa)



## Flybe Eyes Eastern Tie-up

FLYBE IS set to maintain its presence in Scotland after reaching a preliminary agreement with Eastern Airways. The non-binding Head of Terms, announced on June 6, paves the way for a five-year franchise agreement between the two carriers under which Eastern will operate part of its network on behalf of Flybe. This is in place of the existing arrangement with Scottish airline Loganair, which ends in August. Under the terms of the provisional deal – expected to enter force on September 1 – Eastern will operate up to four aircraft on existing Flybe-branded routes from

Aberdeen, Edinburgh, Glasgow and Manchester. Christine Ourmieres-Widener, Flybe CEO, said: "This alliance with Eastern Airways is an excellent opportunity to strengthen the Flybe network. We already operate flights at a number of common airports and this will enable passengers to connect to a greater number of destinations, across the UK and into Europe, all booked through flybe.com. Eastern will operate routes from Glasgow, Edinburgh, Aberdeen and Manchester to offer an enhanced service to passengers based in Scotland and travelling to

Scotland. Combined with our flights to Heathrow from Edinburgh and Aberdeen, this demonstrates our strong commitment to serving Scotland." Eastern Airways CEO Richard Lake added: "This alliance will benefit both airlines as not only does it strengthen Flybe's network, but broadens our distribution and enhances connection opportunities for our customers through its global airline association. We have specialised in fixed-wing flying in the oil and gas market for many years, and our expertise will provide a greater opportunity to further develop offshore connectivity to Flybe's network."

## Celebrating Romandy



Swiss International Air Lines has applied this striking special livery to Bombardier CS300 HB-JCA (c/n 55010) to promote the Swiss Romandy (the French-speaking part of western Switzerland). The design was created by Romand artist Mathias Forbach, also known as Fichtre, and features a variety of images and slogans inspired by a social media competition organised by the carrier. JEAN-LUC ALTHERR



## Titan Airways Adds A318



UK CHARTER specialist Titan Airways has taken delivery of its first Airbus A318. The Stansted-based carrier plans to use the former British Airways jet, G-EUNB (c/n 4039), in a 32-seat all-Business Class configuration for high-end short- and long-haul travel. The eight rows of seats provide a 72in (183cm) pitch and convert into fully lie-flat beds.

"We have a great deal of experience in the business and VIP charter market and

are proud to have welcomed on board royalty, heads of state, government delegations, senior business executives, world-renowned personalities from the music and film industries and international sports stars," Alastair Kiernan, Titan Airways' Commercial Director, said. "Our all-Business Airbus A318 is a unique aircraft on the VIP charter market in terms of size, range and performance and we're positive it will be a hit with our customers."

The incoming jet, which Titan says will complement its all-Business Class Boeing 757 operation, is the latest Airbus aircraft to join the fleet after three A320s and an A321. "[The A318] enables us to offer our clients an even greater choice of aircraft, with a diversity of capacity and range, while retaining commonality with the rest of the A320 family which allows pilots that fly our other A320 aircraft, to also fly the A318." (Photo Titan Airways)

## TUI-Etihad Talks End

TUI GROUP and the Etihad Aviation Group have shelved plans to partner on a new European leisure carrier after negotiations broke down. The Vienna-based joint venture was to combine elements of several different airlines – including TUIfly and airberlin subsidiary Niki – under a new brand, operating a combined fleet of 60 aircraft and flying point-to-point services to key leisure markets across the Continent. However, a statement released by TUI on June 8 said talks "will not continue." TUI executive board member Sebastian Ebel added: "A strong European leisure airline continues to make great strategic sense. After all, the aviation sector is characterised by overcapacity in Germany. However, Niki is no longer available for a joint venture. We will push the repositioning of TUIfly further ahead in order to develop long-term prospects for the airline and its employees." Etihad confirmed talks had been terminated, noting it had "taken this decision following many months of negotiations, in good faith, during which time the parties have been unable to reach agreement on the final nature of such a joint venture."

## Welcome to the Jungle

US rock band Guns N' Roses are the latest act to charter Maleth-Aero's VIP-configured Boeing 737-329, 9H-MTF (c/n 23774). The aircraft, which is supporting the European legs of the 'Not In This Lifetime...' tour, is suitably adorned with the band's name and logo. ANDREA TABANELLI



## PowdAir Eyes Winter Launch

DUBLIN-BASED START-UP PowdAir has outlined plans to launch operations later this year. The virtual carrier is aimed squarely at the winter snowsports market and intends to offer direct flights from six UK airports – Bristol, Edinburgh,

London/Luton, Southend, Manchester and Southampton – as well as Hamburg and Antwerp to Sion, the closest airport to the Swiss ski resorts of Zermatt, Verbier, and Crans-Montana. Services, which are due to start in

December, are expected to be flown initially by Embraer 170s wet-leased from SkyWork Airlines, though PowdAir has expressed an interest in acquiring its own Air Operator Certificate within the next year.

## NATS Extension

UK AIR navigation service provider NATS has secured a ten-year contract to supply air traffic and engineering functions to TAG Farnborough Airport. The new deal, which runs from January 1, continues a partnership that dates back to 1943, and is expected to cover around 24,000 movements per year at the facility in addition to the biennial airshow.

## Ernest Takes Flight



Italian carrier Ernest Airlines has introduced its first aircraft, Airbus A319-111 EI-FVG (c/n 1362), into service. The start-up launched operations last year as a virtual carrier, linking the Albanian capital Tirana with various points in Italy using a Boeing 737 wet-leased from Mistral Air. FABRIZIO BERNI



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# A Momentous

Low-cost carrier easyJet had plenty to celebrate when taking delivery of its first Airbus A320neo, which coincided with its 300th airliner from the European manufacturer.

*Airliner World's* **Barry Woods-Turner** reports from Toulouse.

LONDON/LUTON-BASED easyJet became the latest airline to join the A320neo club when it accepted the first of 130 jets, G-UZHA (c/n 7649), at a ceremony held at the European manufacturer's Toulouse delivery centre on June 14.

EasyJet CEO Dame Carolyn McCall explained that despite the aircraft's impressive economies in fuel-burn and emissions, it would not be used on any specific routes. It will be mixed into the rest of the carrier's reconfigured 186-seat A320 fleet, although these specific jets usually serve on the airline's primary routes.

"The arrival of our first A320neo opens a new chapter in easyJet's history, as it also marks the delivery of our 300th Airbus airliner and it will help us to significantly reduce our cost per seat, in turn allowing us to keep our fares low," McCall remarked. She added: "When we started looking at our next generation narrowbody requirements, the price

of fuel was a lot higher than it is today, but fuel is the largest cost for us – and every airline for that matter – so the fuel efficiency offered by the A320neo and its CFM International Leap-1A engines is incredibly important for us. It will be a major step change for our fleet efficiency and will provide a cost per seat saving of up to 7% over our current A320ceo."

The environmental impact of the A320neo is also extremely important to easyJet which is pioneering the march towards reducing aviation's impact on our planet. McCall told reporters that since 2000, easyJet had cut its emissions by a third from 116g to fewer than 80g per passenger kilometre, and with the introduction of its first A320neo it was setting new goals. "With the addition of the A320neo, and the A321neo to come, we have further improvements planned, and we are setting an even tougher carbon emissions target of 72g by 2022."

## Enter the A321neo

With those 130 neos on order, easyJet is Europe's largest customer for the re-engined aircraft, and McCall said the carrier was looking forward to operating the neo and realising its cost, customer, emissions and noise benefits. Looking further ahead, easyJet is eagerly waiting arrival of its larger 235-seat A321neo. The airline has converted 30 of its 130 A320neos to the larger family jet. "We have been waiting to order the A321 until the neo variant became available," McCall said. "The upgauge in seat numbers is a real advantage to us."

Conversion to the larger A321neo will enable the carrier to maximise capacity, while also minimising noise at increasingly slot-constrained

hubs. The A321neo clearly has an important future with easyJet, with McCall playfully suggesting that the carrier could convert more of its A320neo to the larger variant under the terms of the 2013 framework agreement it signed with Airbus. She said the company's board regularly reviews its fleet strategy, but wouldn't be pushed on when it would convert to more A321neo, simply saying: "Stay tuned to future announcements!"

However, easyJet hasn't been standing still while awaiting the A320/321neos, and has already increased the density of its A320 cabins by reconfiguring some of the existing fleet with 186 seats. This is also now the standard layout for newly delivered examples.

## A 21st Century Aeroplane

Tom Enders, Airbus Group's CEO explained that while the manufacturer was still overcoming issues with the

The London/Luton based carrier has 130 A320neo Family aircraft on order, including 30 examples of the larger A321neo.





# Day for easyJet

Pratt & Whitney PW1100G turbofan variants of the neo, the first CFM Leap-1A equipped A321neo has been handed over to Virgin America and the manufacturer is working hard to catch-up with deliveries. He said the initial example for easyJet was due to be handed over next July.

Gaël Méheust, CEO of CFM International, was justifiably proud of the company's performance to date. He said that seven years ago CFM committed to bring to market an engine that was 15% more efficient than the current generation of engines, and "we have done it." Méheust explained that CFM had

sold 12,500 Leap engines so far and was currently ramping up production to deliver 500 powerplants this year. Speaking to *Airliner World*, easyJet's Chief Pilot David Morgan explained there is little conversion training required for pilots flying the new A320neo. "In fact, the course is just two hours long and is all computer based, with no simulator flying time required. We mostly focus on the differences between the two engine types looking at temperatures and pressures etc, which are a little different." The airline has also provided its pilots with additional technical information in printed form for them to study, he said. "We were lucky enough to take the aeroplane for a short flight about a week ago, and it handles just like its predecessor. But what you really notice is how quiet those engines are, and the low noise in the cockpit especially during take-off. Although we were accelerating down the runway the lack of engine noise caused me to ask my first officer if we had selected full take-off power! I think pilots will quickly adapt to the quieter working environment. Another benefit I noticed during

our short hop was how economical the fuel-burn is with the Leap-1A engines compared to the current engine option in our fleet; it is going to make a real difference to the economics of easyJet's operations." Enders spoke about the long-term partnership Airbus and easyJet enjoy and highlighted that: "easyJet took delivery of its first Airbus airliner – an A319ceo – in 2003 and just 14 years later it has now received its 300th airline, a truly remarkable achievement. This equates to one Airbus aircraft being delivered to the carrier every 17 days on average." Commenting on easyJet's ongoing growth strategy, starting with the A319 through to the latest A321neo, he asked McCall (tongue-in-cheek) whether easyJet would soon be considering an order for the A380, as he knew where he could find some? Unfazed, McCall politely responded saying several more generations of fleet acquisitions were likely before easyJet would consider such a large aeroplane.



Standing in front of the maiden easyJet A320neo during the handover ceremony are, from left: Gaël Méheust – CEO of CFM, Carolyn McCall – CEO easyJet and Tom Enders – CEO Airbus Group.





## Buta Takes Flight

**AZERBAIJANI LOW-COST** start-up Buta Airways has outlined plans to launch its first commercial flights on September 1. The carrier – a budget offshoot of AZAL Azerbaijan Airlines – was founded last December and will operate regional services to destinations including Russia, Turkey, Georgia and Ukraine.

The Baku/Heydar Aliyev-based airline, which will be equipped with Embraer E-Jets leased from its parent, will initially fly to Tbilisi, before adding connections to Moscow/Vnukovo, Antalya, Kazan, Mineralnye Vody, Kiev and Tehran in October to coincide with the start of the winter season.

Unveiling its initial plans for Buta Airways, AZAL said its new subsidiary will adopt a seat-only no-frills business model. Additional services such as checked baggage, hot meals and seat selection available on a pay-as-you-go basis, though it will offer complimentary sandwiches and water on all flights. (Photo AZAL)



## Aeroflot Shines

**SKYTRAX** HAS named Aeroflot as the best airline in Eastern Europe for the fifth consecutive year. The annual World Airline Awards, which took place on June 20 at the Paris Air Show, are based on the largest passenger satisfaction survey covering almost 20 million questionnaires. They evaluated 320 airlines in more than 100 countries on almost 50 different indicators across ground and airport services, on-board

product and cabin service. "Being named Best Airline in Eastern Europe for a sixth time is a great honour and recognition," said Aeroflot CEO Vitaly Savelyev. "All of our triumphs are due first and foremost to effective management and the hard work of all of our staff, who work as a single team united to achieve our goals. We keep the bar high, but we intend to raise it even higher. Our goal is to become the best airline

in Europe, which will mean even more outstanding service for our passengers and a qualitatively new global status for Aeroflot." Elsewhere, the Russian flag carrier now ranks as one of the 20 largest airlines in the world by passenger capacity. Data released by UK-based air travel intelligence company OAG is based on available seats over the 12 months to February 2017.

## Ukrainian Traffic on the Rise

**PASSENGER TRAFFIC** in Ukraine increased by more than 40% over the first five months of the year. Data released by the State Aviation Administration shows domestic airlines transported 3.47 million travellers between January and May, with almost 3.13 million flying on international services.

## Georgian E-Jet

*Tbilisi-based Georgian Airways has taken delivery of its first Embraer 190AR. The former Air Canada example, 4L-TGU (c/n 19000064), is being leased from Nordic Aviation Capital (NAC) and is one of two expected to join the airline.* AIRTEAMIMAGES.COM/CHRIS JILLI



## Irkut Boost

**IRKUT'S MC-21** could be given a major lift after the Russian government suggested it may offer a trade-in scheme for carriers looking to buy the new airliner. Prime Minister Dmitry Medvedev has commissioned the Ministry of Industry and Trade to draft the initiative which would permit airlines to part exchange their existing equipment – most likely older Airbus A320neos and Boeing 737 Classics – against the domestically produced narrowbody. Further details are expected to be unveiled later this year, though it is likely any such deals will be conducted via lessors rather than directly with the manufacturer. Elsewhere, Irkut's parent United Aircraft Corporation said it expects an order for up to 50 MC-21s from flag carrier Aeroflot this year. While the airline is yet to formally commit to the type, it has openly discussed its desire to operate the aircraft, with CEO Vitaly Savelyev revealing in April that Aeroflot would receive its first three examples in 2019. Speaking in early June, UAC President Yuri Slyusar said an agreement was most likely to be announced at the forthcoming MARS 2017 airshow to be held at Zhukovskiy, on the outskirts of Moscow, between July 18 and 23.

## More 737s for Alrosa

**RUSSIAN REGIONAL** carrier Alrosa Aviakompania has revealed plans to acquire its first Boeing 737-700s. According to Swiss airline intelligence provider *ch-aviation*, the Mirny-based operator will lease the former WestJet examples – believed to be C-FBWS (c/n 37088) and C-GWSY (c/n 37421) – from China's BOC Aviation, with the first aircraft due for delivery in November. The incoming jets will be flown alongside Alrosa's three 737-800s.

## A New Look for Nordwind

*Airbus A321-231, VQ-BRS (c/n 7686), resplendent in Nordwind Airlines' striking new livery. The revised colour scheme, drawn up by Portuguese firm UMA, features the same red fin but replaces the old star logo with a stylised N, which is repeated in white on the rear of the now-silver fuselage.* RAINER BEXTEN





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# Qatar Airways Weathers Diplomatic Storm



QATAR AIRWAYS says its global operations remain unaffected despite five nations withdrawing its access to their airspace.

Bahrain, Saudi Arabia, Egypt, the United Arab Emirates and Yemen took the action after severing all diplomatic ties with Qatar, accusing the Gulf state of supporting terrorist organisations. Qatar strongly denies the accusations.

The issue is further complicated for Qatar Airways by the complex airspace arrangements around its Doha hub. High-level airspace over Qatar is under Bahraini control, meaning all inbound and outbound traffic to Doha must fly below 25,000ft, while all movements have been restricted to a small north-south corridor over the Persian Gulf, linking the Qatari capital to Iranian airspace. In many instances, this means flights face sizeable diversions, adding several

hours to flying times.

As part of the diplomatic row, Saudi Arabia, the UAE and Bahrain gave all Qatari visitors and residents two weeks to leave their territory as well as banning their own citizens from travelling to Qatar. Qatar Airways arranged four charter flights to repatriate its nationals from Saudi Arabia, three of which were operated by Oman Air via Muscat with the other flown by Kuwait Airways via Kuwait City.

Qatar Airways Group Chief Executive Akbar Al Baker said: "Qatar Airways has worked tirelessly to ensure that all passengers were brought home safely to Doha within 24 hours of the flight cancellations.

"We have provided additional crew on the ground to ensure that all passengers are being cared for. Our global operations are continuing to run smoothly

and remain unaffected.

"Our focus is on supporting our passengers and ensuring that we continue to deliver our award-winning service. As far as we're concerned it's business as usual."

The airline has been forced to close its offices in Dubai, Sharjah and Riyadh, while the Saudi General Authority of Civil Aviation (GACA) has withdrawn all licences it had granted the oneworld carrier. Saudia, Emirates, Etihad Airways and Gulf Air have also ceased flights to Doha with immediate effect.

Al Baker has called on the International Civil Aviation Organization (ICAO) to declare the embargo illegal, saying it's "in direct contradiction to the convention that guarantees rights to civil overflight". The ICAO intends to meet with representatives from Qatar and the five Arab states. (Photo Qatar Airways)

## ERJs for Air Peace

NIGERIAN CARRIER Air Peace is planning to introduce an undisclosed number of Embraer ERJ 145s to its fleet. The airline's Chairman and CEO, Allen Onyema, told the *ThisDay* newspaper the aircraft would be used to expand domestic operations.

The carrier is meanwhile eyeing further network growth with new regional services to Lomé, Abidjan, Douala, Dakar and Niamey as it expands its Boeing 737 fleet.

Air Peace has also set its sights on destinations further afield, with new services to Atlanta, Guangzhou, Dubai and London/Gatwick once it's taken delivery of a 777.

"We're doing everything to give our esteemed guests the best long-haul flight experience with our 777 aircraft," Onyema told *ThisDay*.

To enable services to London, Air Peace has formally applied to EASA for Third Country Operator (TCO) authorisation.

## EgyptAir Returns to Japan

EGYPTAIR PLANS to restart services to Japan on October 29 with the launch of a weekly non-stop rotation between Cairo and Tokyo/Narita using a 346-seat Boeing 777-300ER.

The airline is now working with Japanese officials to secure the necessary permissions required to resume the flights, said Safwat Musallam, Chairman and CEO of EgyptAir.

The carrier had previously served Tokyo and Osaka, but suspended the flights following the January 25th Revolution in 2011. While the services did resume, the airline cancelled them in 2013 following what it called a "decrease in travel movement from Japan".

## Airlink Begins E-Jet Operations



South African feeder carrier Airlink has started operations using the first of its newly delivered Embraer 190s. The jet, ZS-YAA (c/n 19000193), visited Pretoria/Wonderboom from Cape Town on June 8. TIMOTHY BRANDT



## Emirates' New First Class Product

DUBAI-BASED Emirates will unveil its new First Class product at the Dubai Air Show in November.

The redesigned offering will debut on a Boeing 777-300ER and feature six private suites, laid out in a 1-1-1 configuration, instead of the current eight. The carrier is also adding new features to its Business Class and Economy cabins. Sir Tim Clark, President Emirates Airline, said: "Our products and services across cabin classes are continually improved and enhanced. But what our customers will see on Emirates' new 777s, starting from November, will be

a much bigger revamp that takes our onboard experience to the next level. "All cabins will sport a totally fresh new look. We're excited to showcase the results of years of planning and development invested into our new First Class offering and our overall Emirates 777 experience."

Meanwhile, the Civil Aviation Administration of China (CAAC) has fined Emirates 29,000 yuan (\$4,270) and banned the carrier from adding new routes and frequencies into China for six months under sanctions imposed after two operational inci-

dents earlier this year.

The first occurred on April 17 when an Emirates aircraft flew at the incorrect height over Urumqi after the flight crew misunderstood instructions from air traffic control. Then, on May 18, another flight lost communication with ATC – the CAAC investigation highlighting a possible error by the crew. The CAAC said officials from both parties have met to review Emirates' flight operations.

Emirates serves Beijing, Guangzhou, Shanghai/Pudong, Yinchuan and Zhengzhou. (Photo Emirates)



## Brand Refresh for Air Zimbabwe

AIR ZIMBABWE is being rebranded Zimbabwe Airways as the government-owned airline aims to restore its international long-haul connections. The carrier is also in the process of acquiring a former Malaysia Airlines Boeing 777-200ER, 9M-MRP (c/n 28421). The jet, reportedly the first of four it is leasing from Malaysia, has been painted in

Zimbabwe Airways' striking new livery and undergone test flights at Kuala Lumpur.

The airline has talked of reinstating services to London/Gatwick and Guangzhou, China, and the acquisition of the 777 would aid this. However, in May, Air Zimbabwe was added to the EU Air Safety List due to what EASA

described as "unaddressed safety deficiencies" that were detected during an assessment for a third country operator authorisation.

The carrier has been restricted to domestic flying in recent times, using its Chinese built Xian MA60 turboprops, an Airbus A320 and an ageing Boeing 767-200. (Photo WT Liew)



## Aramco Expands 737 Fleet

Saudi Aramco has taken delivery of three new Boeing 737-800s in as many months. The second, N802XA (c/n 61782), was delivered to the carrier on May 19. JOE G WALKER



## in brief

Investors from the Middle East have held talks to acquire a stake in **Arik Air**, Nigerian newspaper *The Nation* has reported.

A source familiar with the discussions told the newspaper: "We have been discussing with investors. We are having serious discussion with this organisation, which is based in the Middle East, because they have a package to invest in Africa and take advantage of the region's growing economy. "They are interested in expanding our operations and will give us additional airplanes to augment the six we ordered from Boeing."

Gabonese carrier **Afrifjet Business Service** has taken delivery of its first ATR 72-500, c/n 715 – one of a pair the carrier is leasing from Aergo Capital.

**Air Arabia** will launch its new Sharjah-Hargeisa route on July 4. The low-cost carrier will serve the Somali airport twice weekly using Airbus A320s.

**Kenya Airways** has extended its codeshare agreement with KLM to cover additional routes to Europe, Russia and Israel. Its KQ code will be placed on the Dutch carrier's services from Amsterdam to Alicante, Catania, Genoa, Graz, Helsinki, Istanbul/Ataturk, Kigali and Entebbe, Kilimanjaro and Dar es Salaam, London City, Milan/Malpensa, Moscow/Sheremetyevo, St Petersburg, Tel Aviv and Trondheim.

**Iran Air** has launched ATR 72-600 operations following receipt of its first five turboprops, flying the type on services from Esfahan to Ahwaz, Rasht and Shiraz and from Tehran/Mehrabad to Esfahan, Gorgan, Kermanshah and Rasht.

**Etihad Airways** has axed its complimentary chauffeur service at all destinations, other than its Abu Dhabi hub, and replaced it with a paid-for service. It has also extended the paid airport transfer option to all guests across all cabins. Free chauffeured transport to the airport remains in place for guests travelling in The Residence. (Photo Key-Barry Woods-Turner)



**Royal Wings**, the Royal Jordanian subsidiary, launched flights between Aqaba/King Hussein and Dubai/Ai Maktoum on June 15. It's also looking to introduce services between Jordan and London, Milan, Moscow, Copenhagen, Helsinki, Oslo and Stockholm over the next 12 months.

Kuwaiti carrier **Wataniya Airways** has taken delivery of the first of two A320-200s leased from Air Arabia, reports Swiss airline intelligence provider *ch-aviation*. The jet, 9K-EAS, flew from Sharjah to Kuwait on June 22 and will be used to serve regional destinations.





## First Delta A350 Takes Flight



Delta Air Lines' first Airbus A350-941 has made its first flight at the manufacturer's Toulouse facility. The aircraft will become N501DN (c/n 115) when it is delivered to the Atlanta, Georgia-based carrier, with operations scheduled to start in Q4 this year. In May, Delta announced plans to defer ten of the 25 A350-941s it has on order by "two to three years" (see *Airliner World*, July 2017). EUROSPOT

## Swift Acquiring Eastern Air Lines

Eastern Air Lines will merge with charter operator Swift Air. The deal was confirmed in a memo to staff from Eastern Air Lines CEO James Tolzien, which was leaked to the media. Eastern has reduced staff

numbers in recent months and returned three 737s to lessors. Swift Air currently operates two 737-300s, a 737-300F and nine 737-400s plus two Embraer Legacy 600s and a single Legacy

650 executive jet. As part of the merger, Eastern's two remaining 737-800s will transfer across to Swift Air, which is expected in late August/early September, but they will continue to

operate under the Eastern Air Lines brand. In his memo, Tolzien said some staff would be offered positions with the new entity while others will be offered redundancy packages.



## American Launches Flagship Lounge

American Airlines has opened its new Flagship Lounge and Flagship First Dining experience at New York/JFK. The renovated lounge provides quiet rooms, individual work pods and showers for passengers to use before their flights. A range of food options, including a hot and cold buffet, à la carte dining and a chef's table with a selection of made-to-order entrees, is also available. The Flagship First Dining experience enables customers travelling in First Class

on qualifying international and transcontinental flights to access an exclusive sit-down restaurant within the Flagship Lounge, offering complimentary, full-service dining with locally-inspired menus. American plans to introduce or renovate lounges at Chicago O'Hare (new location), Dallas Fort Worth (new), Los Angeles, London/Heathrow, Miami (new) and Philadelphia (new) as part of a \$200m investment in its luxury travel experience. (Photo American Airlines)

## Avianca Gets Connected

Avianca has agreed a deal with Inmarsat for the tech company's GX Aviation product, enabling passengers and cabin crew to access high-speed in-flight Wi-Fi. The service will enable passengers to browse the internet, stream videos and check social media during flights.

GX Aviation will initially be installed on 125 of Avianca's aircraft, includ-

ing the Airbus A320, A330 and Boeing 787 fleets. The agreement includes the potential for additional aircraft to be provisioned at a later date. The first GX-equipped aircraft are expected to be rolled out at the end of the year. Hernan Rincon, CEO of Avianca, said: "Today, technology is one of Avianca's fundamental pillars. Therefore, and to allow our travellers to be always con-

nected, we have signed an agreement that will enable us to continue advancing in our digital transformation with the support of Inmarsat." Leo Mondale, President of Inmarsat Aviation, added: "GX Aviation is now live as the most advanced in-flight connectivity solution in the world. It has been specifically designed from the ground up as a seamless and robust service for

airlines and their passengers, overcoming the shortcomings of traditional in-flight internet providers. Avianca understands that its passengers and cabin crew today expect a consistent, reliable and fast in-flight broadband service wherever they fly. GX Aviation is also scalable with the high growth expected in Latin America over the next decade." (Photo Avianca)





## Boeing Debut for Andes

Argentinean carrier Andes Líneas Aéreas has begun Boeing 737NG operations after putting LV-GWL (c/n 30007) into service. Formerly used by Malaysia Airlines and South African Airways, the aircraft made its first commercial service with its

new owners on June 19 when it flew from Buenos Aires/Aeroparque Jorge Newbery to San Carlos de Bariloche. Andes has also launched a twice-weekly service from the capital to Termas de Río Hondo and a weekly rotation to Samaná in the Dominican

Republic, via Córdoba. The airline, which also has a fleet of four McDonnell Douglas MD-83s, is expected to add a further three 737-800s this year as well as two MD-80s. (Photo Rafael A Reca/BAIRES Aviation Photography)



## Flair Airlines Turns Over a NewLeaf

Charter carrier Flair Airlines has completed the purchase of NewLeaf Travel Company as it looks to establish scheduled operations. NewLeaf is a virtual ultra-low-cost carrier that was launched in 2016, using aircraft supplied by Kelowna-based Flair Airlines. "The purchase of NewLeaf's assets establishes Flair's new position as a low-fare national airline in Canada. The combination of NewLeaf's marketing, selling and distribution engine along with Flair's aviation expertise will continue to provide Canadians with the most affordable air travel options available," the carrier said in a statement. The airline says it plans to expand the

number of destinations it serves this year and will release its autumn and winter domestic schedules soon. "As with all important business decisions, we will work closely with our partners, employees and customers to make the integration process as smooth as possible," stated Jim Rogers, President and CEO of Flair Airlines. "This acquisition will build on the strengths of both companies and now we are truly committed to providing the lowest possible fares as Canada's newest national airline." As well as Kelowna, Flair Airlines has operations in Calgary, Alberta and Hamilton, Ontario.

## Allegiant Boosts Airbus Fleet

Allegiant has struck a deal with ALAFCO Aviation Lease and Finance Company for the lease of 13 Airbus A320 aircraft. The jets, all eight-year-old examples, are due to enter service in the first quarter of 2018 and are part of the ultra-low-cost carrier's transition to an all-Airbus fleet by 2019. The agreement includes an option for Allegiant to purchase the 186-seat jets at the end of the 12-year lease term. "With the opportunistic acquisition of 13 aircraft, this agreement sets us right on pace toward our goal of achieving a single fleet type by 2019," said Maurice J Gallagher Jr, Allegiant Chairman and CEO. "The fleet transition will not only bring the benefit of operating efficiencies in training, scheduling, maintenance and more, but will also mean key economic advantages through greater fuel efficiency and higher seat capacity. This puts us in an ideal position for the future: to continue offering travellers the industry's best fares, while at the same time increasing reliability." ALAFCO CEO and Vice-Chairman Ahmad Alzabin added: "This agreement marks a milestone achievement for ALAFCO with its inaugural entrance into the North American market. With the recent establishment of ALAFCO's Irish subsidiary, we expect further penetration into the North American market." The deal means Allegiant has 92 Airbus aircraft either in service or committed for future delivery.

## in brief

Aerial firefighting specialist **Aero Flite** has taken delivery of its maiden Avro RJ100, N448AC (c/n E3308, ex OO-DWA). The aircraft is expected to be converted into a water bomber like the company's seven Avro RJ85s.

**United Airlines** will launch daily non-stop flights between Los Angeles and Singapore on October 27. Flight UA37/38 will be operated by a Boeing 787-9 Dreamliner with the westbound rotation taking approximately 17hrs 55mins and the eastbound sector 15hrs 15mins. (Photo United Airlines)



Mexican ultra-low-cost carrier **Volaris** has launched two new non-stop services from Querétaro to Chicago/Midway and Los Angeles. The Chicago service operates on Friday and Sunday with rotations to Los Angeles on Tuesday and Saturday. Volaris' Chief Commercial Officer, Holger Blankenstein said adding the new services enables the company to "follow through on our commitment of providing affordable and accessible travel options to our customers while simultaneously strengthening our foothold in two of the most important cities in North America".

**Aeroméxico** and Jet Airways have signed a memorandum of understanding (MOU) to start codesharing so passengers can gain reciprocal frequent flier benefits. As part of the agreement Aeroméxico will initially place its code on Jet Airways' London/Heathrow-Mumbai and Heathrow-Delhi flights while Jet Airways will initially attach its code to Aeroméxico's Heathrow-Mexico City flights. The codesharing will begin later this year subject to government approvals.

**Sunrise Airways** has added a two-class Airbus A320, featuring 12 First Class seats and 138 Economy. The jet is flying from the Haitian carrier's Port-au-Prince hub to three destinations in Cuba – Havana, Camaguey and Santiago de Cuba. "The type of expansion we are pursuing throughout the Caribbean and into North and South America demands that we continually invest in modern jet aircraft offering the very best in comfort and reliability," said Philippe Bayard, President of Sunrise Airways. "Our new A320, with seating in both First Class and Economy, continues our mission to elevate Caribbean aviation to new heights, while also paving the way for us to serve new and existing international markets at a high level."

Bridgetown-based **TIA 2000** has launched commercial operations, Swiss airline intelligence specialist *ch-aviation* reports. It has begun scheduled and charter flights to St Lucia/George F L Charles, Grenada, St Vincent/Argyle, and Dominica/Cane Field using Beech C99 and King Air turboprops.

## WestJet's Maiden MAX



Boeing has rolled out the first Boeing 737 MAX 8 for WestJet at its Renton, Washington State, site. The aircraft, which is registered C-FRAX (c/n 60510), is the first of an order for up to 65 MAX variants. JOE G WALKER



## Full Circle for Indian Flag Carrier?

DEBT-LADEN Air India could be about to be taken over by a familiar new owner, as the government prepares to sell up to 51% of its stake in the carrier. The Tata Group, which originally founded the airline as Tata Air Services 85 years ago, but was forced to relinquish 49% of the carrier following Indian independence in 1948 and then full control after the Air Corporations Act of 1953, is believed to be interested in acquiring a majority stake.

*The Economic Times of India* reports that Tata Sons' Chairman Natarajan Chandrasekaran has already held informal negotiations with government officials, and may try to include Singapore Airlines – Tata's joint venture partner in domestic carrier Vistara – if the government elects to fully privatise Air India. It would not be the first time that the Tata Group and Singapore Airlines have shown an interest in the ailing Indian flag carrier, having had a bid for a 40% stake

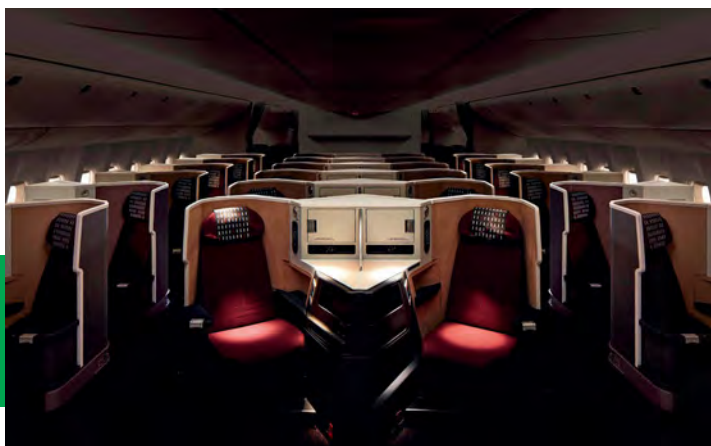
rejected in 2000. Air India has a huge debt, reported to be in the range of Rs 55,000-60,000 crore (\$8.5-9.3bn), but its acquisition by the Tata Group could be the company's best route to controlling the sub-continent's airline market. The national carrier has a fleet of 188 aircraft, transports more passengers than any other Indian airline and holds valuable slots at many of the world's leading airports, such as London/Heathrow and John F Kennedy. (Photo Key-Barry Woods-Turner)



## More A321s for Cebu Pacific

LOW-COST CARRIER Cebu Pacific has placed an order for seven Airbus A321neos, topping up its existing commitment for 32 A321neos. The Manila-based airline says the aircraft are required to meet robust growth on its domestic and regional network, with the first airframes due to join the fleet next year.

"We are very excited about adding the A321 to our fleet," said Lance Gokongwei, Cebu Pacific President and CEO. "The aircraft will enable us to increase capacity on popular routes, while at the same time benefiting from the lowest operating costs in this size category. This will mean more low fares for more customers flying across our domestic and regional network." Cebu Pacific operates an all-Airbus fleet of 36 A320s, four A319s and eight A330-300s, serving more than 60 destinations across Asia, Australia, the Middle East and the US (Guam).



## JAL Increases Onboard Comfort

JAPAN AIRLINES (JAL) is retrofitting its fully lie-flat seat – the Sky Suite III – to its Business Class cabin on board its Boeing 787-9 fleet. The carrier says the decision to re-equip the cabin with the latest generation product is in response to "robust corporate demand" on its medium- and long-haul international routes. The first service to use the new cabin will be the carrier's Tokyo/Narita to Kuala Lumpur link starting on July 31 and it will be progressively introduced onto other international routes

as aircraft conversions are completed. The airline is also updating the other cabins onboard its 787-9s with Premium Economy receiving the 'JAL Sky Wider' seat and Economy being fitted with the 'JAL Sky Wider' seat which gives a 2in (5cm) increased seat pitch. Despite an industry norm of a nine-abreast Economy layout for the 787, JAL is the only airline in the world that continues to adopt an eight-abreast configuration. Japan Airlines

## Third Kung-Fu Panda Livery



Hainan Airline has put its latest Boeing 787-9 Dreamliner, B-7302 (c/n 62719), into service with a spectacular overall yellow colour scheme, adorned with characters from the Dreamworks 'Kung Fu Panda' animated film. This is the carrier's third 787-9 to feature characters from this movie franchise. ANDREW H CLINE



# Dreamliner Stretches its Legs



KOREAN AIR has operated its first long-haul international service using its new Boeing 787-9. The inaugural flight landed at Toronto/Lester B Pearson International Airport on June 1 having been flown by the carrier's second 787-9, HL8082 (c/n 34811), which had

been delivered two months earlier. The SkyTeam Alliance carrier has been operating its first two Dreamliners on domestic services from Seoul/Gimpo to Jeju, but with the type's introduction to long-haul duties this link reverted to being flown by 777-300s.

The Korean carrier is expecting to receive its third of ten 787-9s in mid-July allowing it to introduce the type on its thrice-weekly services between Seoul/Incheon and Madrid, as well as its four-times-weekly link to Beijing, from August 1 and 2 respectively. (Photo Andrew H Cline)

## PAL and SMBC Agree A350 Deal

PHILIPPINE AIRLINES (PAL) and SMBC Aviation Capital have agreed a sale and leaseback deal for two Airbus A350-900 XWBs. The arrangement also includes financing of pre-delivery payments to Airbus, with the first aircraft scheduled to be handed over to the carrier in June 2018.

PAL President and COO Jaime J Bautista said: "We are very pleased to conclude

this transaction with SMBC Aviation Capital. These aircraft will allow PAL to fly non-stop between Manila and New York all year round as well as service the rest of the carrier's long-haul destinations and bring a new level of comfort and service to our passengers."

Peter Barrett, CEO of SMBC Aviation Capital, added: "This demonstrates our ability to finance large deals of scale

with innovative financing solutions for our customers. The strength of our portfolio is further enhanced by the addition of the A350 which is 25% more fuel efficient than its predecessor and will ultimately deliver greater cost savings for the airline. We are delighted to provide the airline with its first A350 and to further extend our presence across Asia."

## MEGA to Relaunch

THE MALDIVES' only private international carrier, MEGA Maldives Airlines, is planning to resume flight operations in August following a reorganisation and a major upgrade to its fleet. The carrier suspended all flying on May 2 owing to complications that arose from a restructuring and recapitalisation programme that it started late last year. The carrier has said it is replacing its Boeing fleet with newer

Airbus aircraft, it will update staff uniforms, while its services both on the ground and in the air, will see major improvements. A company executive explained that the process of acquiring new aircraft, hiring pilots and crew would take around three months to complete and services are due to restart in August. The latest announcement follows an airline advertisement offering job opportunities for Airbus A320/A330/A340 training captains,

technical pilots and senior first officers. MEGA Maldives was established in 2010 with the intention of increasing air connectivity between the islands and emerging markets, particularly in Asia. Since its creation it has carried more than 1.1 million passengers and flown to over 50 destinations worldwide, but a sharp decline in passengers travelling from China – its biggest market – led to its earlier financial problems.



Former MEGA Maldives Airlines Boeing 767-300ER, 8Q-MEH (c/n 26206), was returned to lessor GECAS in August 2016. It passed through Frankfurt/Hahn on June 12 having completed a freighter conversion and will now operate on behalf of Prime Air as N1181A. REINER BEXTEN

### in brief

Reuters has reported that **SriLankan Airlines'** CEO Suren Ratwatte said Airbus is showing some flexibility concerning the fate of four unwanted A350-900s that the carrier has on order. He said the European manufacturer had demonstrated a willingness to change the terms of the contract for a different variant of aircraft. The long-haul aircraft have become surplus to requirements after SriLankan reorganised itself into a new regionally-oriented business model. The carrier has already renegotiated a contract with lessor AerCap for three further A350-900s.

Malaysian long-haul low-cost carrier **AirAsia X** has confirmed it has abandoned plans to restart services to Europe and will not start operating to the US West Coast. In a series of tweets, CEO Tony Fernandes said, "we have decided that ultra-long-haul is not relevant now and we won't get seduced into price wars over London." He added that the carrier will stick to routes of around eight/nine hours' duration and will focus on Asia, "with the odd route to somewhere like Hawaii". AirAsia X stopped flying to London and Paris in early 2012 saying its Airbus A340s were uneconomical on the routes from Kuala Lumpur.

**Korean Air** and **Delta Air Lines** have reached an agreement to create a transpacific joint venture offering customers an enhanced and expanded network. The accord is the latest expansion of the longstanding partnership between the two carriers which started in 2000 when they became co-founders of the SkyTeam global airline alliance. This joint venture will create a combined network of more than 290 destinations in the Americas and more than 80 in Asia. The deal is subject to regulatory approvals.

(Photo Korean Air/Delta Air Lines)



To meet an expected surge in seat demand **Malaysia Airlines** has revealed it will be using A380s on flights to Seoul/Incheon and Tokyo/Narita this autumn. The airline is also planning to replace its fleet of A330-300s by late 2019 and is in discussions with both Boeing and Airbus regarding deals for direct purchases or leases of 787-9 Dreamliners or A330neos. The first of six-leased A350s are due to arrive at the end of this year and will be introduced on routes to Auckland and Tokyo initially, with London added next spring.

**Air New Zealand** will start looking at its future widebody requirements towards the end of this year, Swiss airline intelligence provider *ch-aviation* reports. The airline says the aircraft would have to be able to serve the carrier's ultra-long-haul routes to North and South America. Among the types to be considered are the A350-1000 and A350-900(ULR) from Airbus and Boeing's 787-10 and 777X family.



## Good News for Mitsubishi

PRATT & WHITNEY'S PurePower geared turbofan PW1200G engine has been awarded its type certificate by the Federal Aviation Administration. The powerplant has been specifically optimised for both the Mitsubishi Aircraft Corporation's MRJ-70 and MRJ-90, with the Japanese manufacturer claiming the engine's advanced technology will contribute to a 10-20% reduction in operating costs compared with current generation regional aircraft. The approval came shortly after the fourth MRJ prototype arrived at the Moses Lake Flight Test Centre in Washington State, where it is

supporting a busy schedule of trials. Hisakazu Mizutani, President, Mitsubishi Aircraft Corporation remarked: "The integration of the engine and aircraft design underscores just how critical collaboration is to the success of creating a next-generation regional aircraft, and we are proud to be the first company to have selected this game-changing engine. This achievement is the latest in an ongoing series of development milestones and tests that the MRJ has conducted and we are looking ahead to the next phase of testing." (Photo Mitsubishi Aircraft Corporation)



## Airbus Deliveries



*Etihad Airways has taken delivery of its tenth and final Airbus A380. Employees from airline and Airbus gathered at the European manufacturer's Hamburg/Finkenwerder facility on May 25, where the aircraft, A6-APJ (c/n 237), was officially handed over to the UAE national carrier.*

ETIHAD AIRWAYS

Airbus delivered the following aircraft during May:

A320ceo	17	Allegiant Air, BOC Aviation (China Eastern Airlines), CALC (Spring Airlines), China Development Bank Finance, Chengdu Airlines, easyJet (2), International AirFinance Corp (Saudia), Lion Air (Batik Air) (3), Loong Air, Lufthansa (2), Qingdao Airlines, Spirit Airlines, Spring Airlines
A320neo	11	AerCap (Interjet), AirAsia, BOC Aviation (Citilink), BOC Aviation (Vistara), Frontier Airlines, Garuda Indonesia (Citilink), GECAS (Air India), GECAS (Avianca Brazil), IndiGo (2), Scandinavian Airlines
A321ceo	17	Aerospace Trading Holding (Aeroflot) (2), Air Lease Corporation (WOW air), American Airlines (2), BOC Aviation (Finnair), CALC (Nordwind Airlines) (2), China Southern Airlines, Delta Air Lines, JetBlue Airways, Spirit Airways, VietJet Air (3), Wizz Air, WOW air
A321neo	1	GECAS (Virgin America)
A330-200	2	Airbus Defence (ROKAF), Capital Airlines
A330-300	4	Aer Lingus, Cebu Pacific, China Eastern Airlines, International AirFinance Corp (Saudia)
A350-900	5	Cathay Pacific, China Airlines, Qatar Airways, Singapore Airlines (2)
A380	3	Emirates, Etihad Airways, Qatar Airways
Total	60	



## New Fire Fighting Platform

COULSON AVIATION of Port Alberni, British Columbia is adding seven air tankers to its aerial firefighting fleet, including a new aircraft type. The company currently operates three Lockheed C-130 Hercules' and is in the process of converting another example, but explained it was finding it difficult to locate additional aircraft from the civilian market. When Coulson executives noted Southwest Airlines was considering

retiring its Boeing 737-300s an idea began to germinate. Because the FAA only allows Southwest pilots to fly two variants of the 737 with the same type rating, the introduction of the 737 MAX later this summer meant there was no room for the Classics in its fleet anymore. So, they decided to dispose of these surplus airframes, despite having relatively low flying hours. Coulson has purchased six -300s and intends to convert them into

4,000 US gal Fireliner air tankers. The first aircraft, N617SW (c/n 27700), is already being converted and was rolled out of International Aerospace Coatings paint shop in Spokane, Washington State at the end of May in its new livery. It will now be fitted with gravity-feed tanks in the cargo holds below the main cabin floor, using the same technology as installed on the company's C-130s. The 737 air tankers will serve as multi-use aircraft and will

have seating for up to 63 passengers. Even with a full load of fire retardant and 4.5 hours of fuel, the aircraft is well below its maximum gross take-off weight, so there has been no need to change the cabin interior. The company expects the first aircraft to be completed by December, when it will undergo supplemental type certification before tackling its first wildfires. (Photo Joe G Walker)



## Boeing Deliveries



Chinese carrier Hebei Airlines took delivery of this Boeing 737-800 on May 13. The aircraft, B-1445 (c/n 42973), will be used on its expanding domestic network that currently stands at 27 destinations. JOE G WALKER

Boeing delivered the following aircraft during May:

737 MAX 8	2	Lion Air (Malindo Air)
737-800	31	Air China, Air Lease Corporation (2), American Airlines (2), Avia Capital Leasing, BOC Aviation (2), China Development Bank Finance, China Eastern Airlines, China Southern Airlines, EgyptAir, Hebei Airlines, Japan Transocean Air, Norwegian (3), Pegasus Airlines (TAROM) (2), Ryanair (7), Southwest Airlines (2), SunExpress Airlines (2), Transavia
737-800A	1	Australian Air Force
737-900ER	2	Alaska Airlines, Delta Air Lines
747-8	1	Korean Air
767-300F	1	FedEx
777-300ER	6	China Eastern Airlines, Emirates, Kuwait Airways, Turkish Airlines, Unidentified Customer, United Airlines
787-8	3	Air Europa, Ethiopian Airlines, Scoot
787-9	9	Air Canada (2), CIT Aerospace, Etihad Airways, Hainan Airlines, International Lease Finance Corporation, Saudi Arabian Airlines, TUI Travel, Vietnam Airlines
Total	56	

## ATR Offers More

FRANCO/ITALIAN TURBOPROP manufacturer ATR has created a new leasing, asset management and freighter department to manage sales to the leasing community and facilitate the placement of new or used aircraft by lessors. The company will also provide a full range of asset management services, including support for freighter conversions of its turboprop family. The department will function as a 'one-stop shop' within ATR to define, develop and make proposals for ATR's leasing, asset and freighter solutions. Christian Scherer, ATR's CEO, commented: "As market leaders, we feel we can do a better job working with the important leasing companies in the market. Lessors constitute valuable partners that require specific and dedicated interaction with ATR. We expect this new team's effort to result in even stronger asset value performance of our products."

## in brief

Air traffic services provider **NATS** has revealed that improvements to the design of UK airspace have helped to save 55,900 tonnes of CO<sub>2</sub> emissions during 2016. It says during the past year it has implemented amendments to higher airspace levels making routes more direct and vertically efficient, as well as introducing speed control measures to slow aircraft down en route to avoid holding at congested areas close to airports.

**Sukhoi** says it has successfully completed testing of a Superjet 100 wing that will allow the future installation of winglets to enhance the type's take-off and landing performance as well as improve fuel efficiency. The trials were carried out to verify the strength of the wing's structural elements and included a mock-up of the 'Saber' winglet design it proposes to fit. The tests are part of Sukhoi's SSJ100 performance enhancement programme.

**Pratt & Whitney** is celebrating the 30th anniversary of its PW4000-94 engine entering revenue service. More than 70 customers worldwide have selected it to power Boeing 747, 767, McDonnell Douglas MD-11, Airbus A300, A310 fleets and it is also being fitted to the Boeing-built KC-46 Pegasus aerial refuelling and military transporter. Pratt & Whitney says it has delivered more than 2,500 engines to date, these having logged more than 135 million flight hours. (Photo Pratt & Whitney)



Brussels-based International Air Carrier Association has been renamed the **Airlines International Representation in Europe (AIRE)**. The 19 airlines represented by the association agreed to join forces under the new name on June 14 and say the new organisation will offer them more effective representation, better information as well as improved access to European institutions. This, they hope, will speed up delivery of a far more cost-effective business environment for airlines.

**China Aircraft Leasing Group (CALC)** has signed a purchase agreement with Boeing for 50 737 MAX aircraft in a deal valued at \$5.8bn. The aircraft will be delivered in stages up to 2023 the lessor said. With this latest order, CALC's outstanding order book now consists of 139 jets (89 Airbus and 50 Boeing), putting the company on track to have 226 aircraft in service by 2023.

**Investec** has agreed to sell 18 aircraft from its managed leased fleet to Oaktree Capital Management which is working in conjunction with World Star Aviation. The transaction consists of 15 narrowbody – Boeing 737-800 and Airbus A320-200 – aircraft, two 777-300ERs and an A330-300. All the jets are on lease to 12 global airlines including Air China, Air France, Wizz Air and IndiGo.

## Airbus Pioneers Biofuel Deliveries

AIRBUS HAS become the first manufacturer to power delivery flights with biofuel. The arrangement, which is now available to all customers as an option, was pioneered in partnership with Cathay Pacific and has been under trial since the carrier received its first A350 XWB in May 2016. All 15 examples – including the most recent, B-LRP (c/n 101) which was handed over on June 1 – have been powered by a 10% blend of sustainable jet fuel for the ferry

flight from Toulouse to the carrier's Hong Kong base.

Airbus says the biofuel delivery flight concept, originally devised by Cathay Pacific in 2015, is now in full operation and this latest journey confirms that the supply chain established by the manufacturer and partner Total is functioning correctly, from fuel production through to customer delivery.

Frederic Eychenne, Head of New Energies at Airbus, commented: "This

is a major step for Airbus and a first for the regular delivery of new production aircraft. It enables us to demonstrate that aviation biofuels are a reality today. We now aim to expand this initiative to all our delivery sites, close to our customers." The first delivery flights from Hamburg, Germany and Mobile, US, using this type of biofuel are planned for next year. Airbus says it aims to continue reducing the carbon footprint of each flight starting with the aircraft's delivery.

## Maiden Flight for LM-100J Freighter



LOCKHEED MARTIN successfully conducted the first flight of its LM-100J commercial freighter from its Marietta, Georgia facility on May 25. The civil-certified LM-100J, the 17th variant of the C-130J Super Hercules family, is an updated version of the L-100 cargo aircraft that the company manufactured

from 1964 through to 1992, and is being marketed as a commercial multi-purpose air freighter. The aircraft completed initial production flight testing before making the long journey across the Atlantic to attend the Paris Airshow. After its return to Marietta, the aircraft will continue the Federal Aviation Administration (FAA) type

certification process during which it will be joined by a second prototype. Wayne Roberts, Chief Test Pilot for the LM-100J Program remarked: "I was proud to fly the first flight of our LM-100J. It performed flawlessly, as is typical of our military C-130J new production aircraft." (Photo Lockheed Martin)



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# regional

## Niche and Nimble

Europe's commercial aviation scene is characterised by fierce competition as legacy carriers do battle with low-cost behemoths such as easyJet and Ryanair. As a relatively small carrier, bmi regional has had to be clever with its approach. It doesn't enjoy the same economies of scale as larger carriers or the ability to be highly price sensitive. But by targeting underserved regional destinations with strong industrial connections it has successfully transitioned itself from being a small domestic player to a pan-European operator.

**bmi regional operates an all-Embraer fleet, consisting of four ERJ 135s and 15 ERJ 145s.**  
AIRTEAMIMAGES.COM/  
SIMON WILLSON

"We occasionally compete, but the only time we do is if there is a really strong reason to do so, for a really specific business," Jochen Schnadt, bmi regional's Chief Commercial Officer told *Airliner World*. "Otherwise it doesn't make sense because our economics do not stack up with a 180-seat aircraft. We can't compete on cost, so why would we?"

Instead the airline has used its smaller jets to its advantage linking city pairs where demand is smaller but strong. One corporate passenger *Airliner World* spoke to on the airline's inaugural Graz to Birmingham service in February said

the new direct flight would save him several hours' travelling each week. Previously he had flown via Vienna, Frankfurt or Munich.

Schnadt openly admits that while this competition exists and is often cheaper, the direct flight is a huge benefit to business travellers.

"Time is an important factor; if you are a senior engineer with a company you are talking several hundred pounds an hour for your time," he explained. "If it takes you three to five hours longer because you have to connect or fly somewhere else and drive, then that is not the most efficient way; it is a false





How does a small independent airline survive in a market dominated by continental powerhouses? *Airliner World's* **James Ronayne** examines how bmi regional is successfully overcoming this challenge.

economy. When you look at the total value proposition, I think that is where we can be really competitive."

### **Network Planning**

When it comes to looking for new routes bmi regional undertakes a thorough and wide-ranging analysis, what Schnadt calls a "business development approach".

"It's not a case of looking at wide gaps on a map and saying we'll fly there," he explained. "We are doing proper research behind the statistics. Statistics say there are 40,000 potential passengers on this route, but who are

those customers and why are they actually travelling?"

The analysis includes looking at the companies working within the region, how many people they employ, how frequently their staff are travelling and why, and how bmi regional could provide a solution.

"Sometimes it is the other way around, regions or airports approach us and say 'We have this specific need or potential. Is this

something you are interested in?' We're building this reputation that we are a go-to airline for creating specific solutions and it is a very interesting niche for us."

### **Back in Birmingham**

The airline serves 35 destinations in eleven European nations. It has bases in Bristol and Munich as well as flying contract services for Brussels Airlines and Lufthansa from their respective hubs.

In February, bmi regional launched a new base at Birmingham Airport, initially serving the Austrian city of Graz. The service is designed to tap >>







into the strong automotive ties between the two cities, with the schedule built around corporate clients' requirements. After initially operating on Mondays and Fridays, flight BM1401 was increased to four-times weekly in March. This was followed on May 8, with new routes connecting the UK's second city with Gothenburg and Nuremberg, with both destinations served six-times weekly. The airline has historical ties with Birmingham and axed the service to Gothenburg in March 2015, only when it became an independent carrier and couldn't sustain the route.

Schnadt said the carrier's research pointed to an untapped market from Birmingham. "We found frequently that these were unserved markets," he explained. "They might not necessarily be huge markets, but given the size of our aircraft we don't necessarily need huge markets. That's where the research very quickly pointed towards Graz. Nuremberg was hot on its heels in terms of the automotive suppliers based there and Gothenburg has historical ties."

Industry has played a key role in

bmi regional's return to Birmingham and the airline has worked closely with large, locally based corporations to develop a solution to meet their requirements.

"With Graz in particular, we have

Fleet			
Reg	Type	C/N	Config.
G-RJXJ	Embraer ERJ 135ER	145473	Y37
G-RJXK		145494	Y37
G-RJXL		145376	Y37
G-RJXP		145431	Y37
G-CKAF		145047	Y49
G-CKAG	Embraer ERJ 145EP	145777	Y49
G-EMBN		145201	Y49
G-RJXA		145136	Y49
G-RJXB		145142	Y49
G-RJXC		145153	Y49
G-RJXD		145207	Y49
G-RJXE		145245	Y49
G-RJXF		145280	Y49
G-RJXG		145390	Y49
G-RJXH		145442	Y49
G-RJXI		145454	Y49
G-RJXR		145070	Y49
G-EMBI	Embraer ERJ 145EU	145126	Y49
G-EMBJ		145134	Y49
G-RJXM	Embraer ERJ 145MP	145216	Y49

**Passengers board ERJ 145 G-RJXB for the inaugural Graz to Birmingham flight.**

KEY-JAMES RONAYNE

strong engagement with some really key companies. They have also dictated the schedules, to a large extent. I think what is unique to us is that we go to great lengths designing networks and schedules around customers' specific needs. The schedule you see for Graz is a classic example where it is driven by a particular corporate [client]."

### Airline Partnerships

The carrier is also contracted to operate services on behalf of Lufthansa and Brussels Airlines, as well as engaging in codeshare agreements with the two Star Alliance members, giving bmi regional's passengers the opportunity to connect to their global networks.

Schnadt said the arrangement with both airlines was proving beneficial and he sees the potential to continue expanding in this line of business. "Over the last 18 to 24 months the partnerships we have with Brussels Airlines and Lufthansa have both matured and provided some additional growth," he said. "After Bristol, we have grown Munich into a second hub; we essentially have three aircraft deployed there

**The airline's aircraft are configured in a single-class layout, with 49 seats on the ERJ 145s and 37 on ERJ 135s.**

AIRTEAMIMAGES.COM/  
BILL BLANCHARD







## Ownership

The airline originally started out as Business Air and was acquired by British Midland in 1997. When International Airlines Group, the parent company of British Airways, acquired British Midland from Lufthansa in April 2012, it put bmi regional up for sale, selling it to Sector Aviation Holdings (SAH) on June 1 that year. In August

2015 bmi regional joined Scottish carrier Loganair under the Airline Investments Limited (AIL) Group banner. Investors in both SAH and AIL include Stephen and Peter Bond, the former owners of Bond Aviation and investors in Alliance Airlines. The airline's headquarters is at East Midlands Airport and the group's CEO is Peter Simpson.

now and seven routes. It's not much in the context of Lufthansa with 100 aircraft, but for us it is actually a fairly big presence."

"Most of the bigger airlines have abandoned a lot of the smaller aircraft, a lot of markets are unserved or they don't have the cost structures to serve those markets effectively. That's where we see, as a relatively small and nimble airline, the opportunity to develop niches. That's working really well for us. Whether it is for corporates or in partnership with Lufthansa, in the instance of Munich, we definitely see potential."

The Munich hub has enjoyed significant success. The carrier recently added a new service from the Bavarian gateway to Lublin, its first destination in Poland, and increased frequencies on its flights to Rostock, Norrköping and Brno. Milan/Bergamo

and Southampton also enjoy connections to Munich courtesy of the carrier. Schnadt said: "Last year was a period of unprecedented growth for bmi regional in Munich. We are excited to be building on the excellent customer response to these new routes by offering our Munich customers improved convenience."

As it eyes further expansion, the airline is in the middle of a recruitment drive for crew throughout its network. There is also a focus on the Munich hub to increase the number of German crew operating out of the Bavarian airport.

"We are always looking to localise because it is a better customer touch-point thanks to the local language skills," explained Schnadt. "There is also an element of cost efficiency rather than having people [staff] travelling around the network."

*The airline operates flights under contract for Brussels Airlines and Lufthansa.*  
AIRTEAMIMAGES.COM/  
ALUN MORRIS JONES

## Bristol

Bristol is by far bmi regional's biggest base with six aircraft stationed there providing services to Aberdeen, Brussels, Düsseldorf, Frankfurt, Hamburg, Milan/Malpensa, Munich and Paris/Charles de Gaulle. Like Birmingham, the route network and flight schedule is tailored to local demands. For instance the Hamburg connection is particularly useful for Airbus employees travelling between the manufacturer's sites at Filton and Finkenwerder.

Schnadt believes there is potential to expand the Bristol operation further: "It is another one of those markets outside of London that is driven by strong economic activity; it is a fairly prosperous and dynamic region. What we are offering is frequent business links, we're not necessarily doing the trunk routes, but links where you need a small aircraft to offer the frequency."

The airline has also returned to the London market, courtesy of its twice-daily (once daily on Saturday) link between Stansted and Derry in Northern Ireland.

The airline has also worked hard to supplement its scheduled services with ad hoc charter work, particularly at weekends when the fleet isn't as busy.

Schnadt said: "We do a lot of football charters flying the Premier League teams, but equally companies for events such as car launches or movie productions where having the convenience of a 50-seat aircraft to take you directly from A to B is attractive." >>>

*Less than 50% of bmi regional's capacity touches the UK.*  
KEY-JAMES RONAYNE







*The carrier has supplemented its scheduled services with ad hoc charter work, particularly at weekends when the fleet is less busy.*

AVIATION IMAGE NETWORK/  
BAILEY

## Fleet

The airline operates an all-Embraer fleet, consisting of 16 49-seat Embraer 145s and four 37-seat Embraer 135s. The carrier recently introduced two additional ERJ 145s including former HOP! example G-CKAF (c/n 145047, ex F-GRGG).

"I think the '145 is still a quite modern aircraft in many ways, but at the same time it is not the latest design," Schnadt said. "I'm biased, but I think it is more comfortable than an A320 or a 737 because firstly, you don't have the middle seat and the seat pitch is the same, if not better, than you have on most A320s."

Schnadt confirmed that the carrier was also considering introducing larger aircraft to its fleet. It gained some experience with bigger jets earlier this year when it wet leased a Sukhoi Superjet from CityJet to fly services from Bristol and it has also borrowed a People's Viennaline Embraer 170 to serve the Stansted-Derry rotation.

"In the next 12 to 18 months we will look at upgauging," Schnadt revealed.

"One, because we see opportunities to replicate what we are doing with the 50-seaters in 90- to 100-seat markets and secondly, in our existing network, we see an opportunity to upgauge."

The CCO said it was a "question of when and not if" but tempered that by adding that the carrier needed to be able to obtain a critical mass: "We need to see if there are opportunities for us, possibly in partnership with other airlines, to add five or six aircraft to achieve that critical mass."

"The second-generation 100-seaters are now coming through and that will create a market of potentially interesting first-generation aircraft," Schnadt continued. "I wouldn't rule out a second-generation aircraft; it depends on the opportunity, it has to be the right deal."

## Brexit

As a truly pan-continental operator, bmi regional is monitoring discussions regarding the UK's exit from the European Union with interest. Schnadt says it is too early to say what impact Brexit will have on bmi regional

operationally, but the management team is committed to taking a thoughtful approach to the situation.

"Today less than 50% of our capacity is deployed on routes touching the UK," he explained. "Just because we have this Brexit scenario on the cards now, we will not abandon our strategy. I think, in light of more recent developments, we will have to assume that access to the European Common Aviation Area will no longer be guaranteed for UK-registered airlines."

Schnadt said bmi regional will evaluate all avenues, including the possibility of acquiring a second AOC. From a business point of view, the CCO is keen for the airline to seize any opportunities that Brexit may provide, particularly in light of the weak pound.

"I think it is going to be healthy because of the weak pound. Exports are good for us because that means companies are doing business, which

**Schnadt confirmed that the carrier was also considering introducing larger aircraft to its fleet.**

*Embraer ERJ 135 G-RJXX (c/n 145494), moments from touch down at Manchester.*

AIRTEAMIMAGES.COM/  
SIMON WILLSON







ABOVE • **Jochen Schnadt** (second left) joins Austrian dignitaries as they cut a ribbon to celebrate bmi regional's new service between Birmingham and Graz.  
KEY-JAMES RONAYNE

LEFT • **By far the carrier's biggest base is Bristol, where it has six aircraft deployed.**  
AVIATION IMAGE NETWORK/  
SIMON GREGORY

TOP LEFT • **Schnadt says the carrier will look at upgauging its fleet in the next 12 to 18 months.** AIRTEAMIMAGES.COM/RALF MEYERMANN

means they are flying back and forth. I think, as the whole Brexit debate shapes up, what we will see is a hive of activity with people going back and forth, especially global firms working out how they are going to set themselves up in a post-Brexit environment."

## Standing Out

Schnadt and his team are working on product propositions that are "value enhancing". Passengers travelling on an Executive fare are entitled to two

hold bags weighing up to 50.7lb (23kg) and two main pieces of hand baggage weighing up to 26.5lb (12kg), plus an additional personal item, such as a small handbag or briefcase.

Those flying on all the carrier's other fares can bring a single hold bag weighing up to 50.7lb (23kg) and a single piece of hand baggage (26.5lb/12kg) plus a personal item.

Good-quality complimentary snacks and beverages are also provided to all passengers as standard.

"I think having a different, more inclusive, product proposition is something that does stand out these days because it is a race to the bottom at the moment," he said. "We're not necessarily looking at nickel and diming passengers because that is not our proposition. Convenience in this day and age, especially for a frequent traveller, becomes an ever more important item."

As a result, Schnadt says bmi regional is looking at how it can make a passenger's transition through the airport, both before departure and on arrival, a smoother experience. The CCO says the carrier is aiming to catch up with airlines considered "best in class in terms of customer engagement" and is actively studying areas such as apps.

One of the benefits of being a small airline is the ability to react quickly to a situation and Schnadt believes bmi regional will continue to be very opportunistic. "We are led by opportunities, if they are justifiable then we will go after them," he said. "We have a shareholding structure that is very supportive of that and [is] taking us to the next level." **AWA**





# Old Dog, New Tricks



What do you do when the aircraft you operate have plenty of life left in them, but their cockpit technology is becoming increasingly outmoded? Global logistics provider UPS Airlines has devised an innovative solution, as *Airliner World's* **Craig West** finds out...

**T**he rapid advancement of technology means that the average computer is usually out of date almost as soon as it's purchased. The same can also be said of avionics, particularly given the emerging trend of airspace modernisation and the introduction of new communication, navigation and surveillance requirements.

The systems necessary to operate in such environments are installed as standard on new-generation airliners, but those flying older types face a quandary as to how they keep their mature fleets current in the face of such changes. Some carriers opt to phase out their ageing aircraft in favour of more modern technology, but this can be an expensive endeavour and, in certain cases, there simply may not be a viable alternative available on the market.

This is the case for UPS Airlines and its Airbus A300F4-622R freighters. The 52-strong fleet was delivered between 2000 and 2006 and were among the last examples off the production line, but according to the carrier's Avionics and Systems Engineering Division Manager, Kevin O'Hara, they "were already a little behind in terms of the

avionics in the cockpit."

He explained: "[The A300] is a very capable platform used by UPS for medium-range, heavy lift cargo flights transporting express packages. In terms of airframe, it's equivalent to anything we're flying now, including the Boeing 757 and 767, but we determined from the outset that we would need to modernise the avionics."

One of the biggest driving forces for change is the A300's limited on-board navigation database, which is unable to accommodate the US domestic data-base let alone the worldwide equivalent. "This was the straw that broke the camel's back," O'Hara remarked, "And coupled with the emerging next-generation environment, it led us to start investigating various upgrade options."

The company has spent around three years assessing potential solutions for its A300 fleet, including standalone replacements to the aircraft's flight management system (FMS). This was ultimately discounted in favour of an entirely new cockpit which would meet current and future airspace requirements.

"We wanted a long-term solution and long-term support so we went to Airbus," O'Hara said. "They stepped up

and we determined which suppliers were viable against the requirements we have, not just for the FMS but also the cockpit displays."

The outcome is a three-way partnership between UPS, Airbus and Honeywell which will see the A300s retrofitted with the latter's Primus Epic integrated avionics system – an industry first.

"It's a rather innovative solution that will keep the aircraft viable in the long-term," O'Hara remarked. "[In terms of avionics capability, the upgrade] will put our A300s on par

*A close-up of the Honeywell Primus Epic displays. In terms of avionics capability, the upgrade will put UPS' Airbus A300s on a par with the A350 and Boeing 787.* VIA UPS







**UPS expects to retrofit all 52 of its Airbus A300s with Honeywell's Primus Epic cockpit by 2022.**

AIRTEAMIMAGES.COM/  
ANDRE NORDHEIM

manufacturers out there building new freighters," O'Hara reflected. "We like to have the option when we're adding to our fleet to do so in significant numbers, and ideally have the option of a new aircraft, but they're not really available right now."

### An Epic Upgrade

The A300 project, which is due to start in 2019, is extensive. According to O'Hara it will deliver "a major upgrade of the cockpit instruments and functionality". The most significant changes include the installation of a next-generation FMS, replacement of the now obsolete cathode ray tube (CRT) attitude indicator and navigation displays and some electro-mechanical instruments with new, larger LCD screens, and the addition of an integrated standby instrument system. Elsewhere, the A300s will also be equipped with a new 3D weather radar, incorporating predictive hail, lightning and turbulence detection, and a

with the [latest-generation] A350 and Boeing 787 Dreamliner."

It's a bold decision to invest so heavily in a mature type, but as O'Hara observed, UPS has previous form when it comes to long service. "When we purchase a new airframe we usually expect to operate it for 30-35 years. Our 757s are a great example – they were the first new-builds we bought, and even though they're now approaching three decades of service we have no intention of replacing them."

There is also the issue of a lack of viable alternatives. "There aren't many

Central Maintenance System (CMS). The aircraft communication and addressing reporting system (ACARS) and Enhanced Ground Proximity Warning System (EGPWS) will also be overhauled.

Honeywell's President Electronics Solutions, Carl Esposito, reflected on the project: "We're taking our Primus Epic product into a retrofit application. It will provide advanced navigation, flight planning and next-generation air traffic control capabilities, while pilots will also benefit from synthetic vision, which provides a 3D out-of-the-window view of the surrounding terrain, along with airspace and runways, improving situational awareness and safety."

Importantly for UPS, the modernisation programme will significantly extend the service life of its A300 fleet up to at least 2035 if not later again. Work is already under way to identify which of the aircraft's systems will require modification and engineering work, with the first example expected to arrive for rework in Toulouse in 2019 for upgrades and testing. Certification is anticipated for 2020 with the last of

UPS' 52 Airbuses due to be completed in August 2022.

#### UPS A300 Fleet

<b>Fleet size</b>	52
<b>First delivery</b>	2000
<b>Final delivery</b>	2006
<b>Maximum payload</b>	120,000lb (54,431kg) – approximately 14,000 Next Day Air packages
<b>Container positions</b>	22 main deck, 7 lower deck
<b>Range at gross weight</b>	2,000nm (3,700km)

### Maintaining a Classic

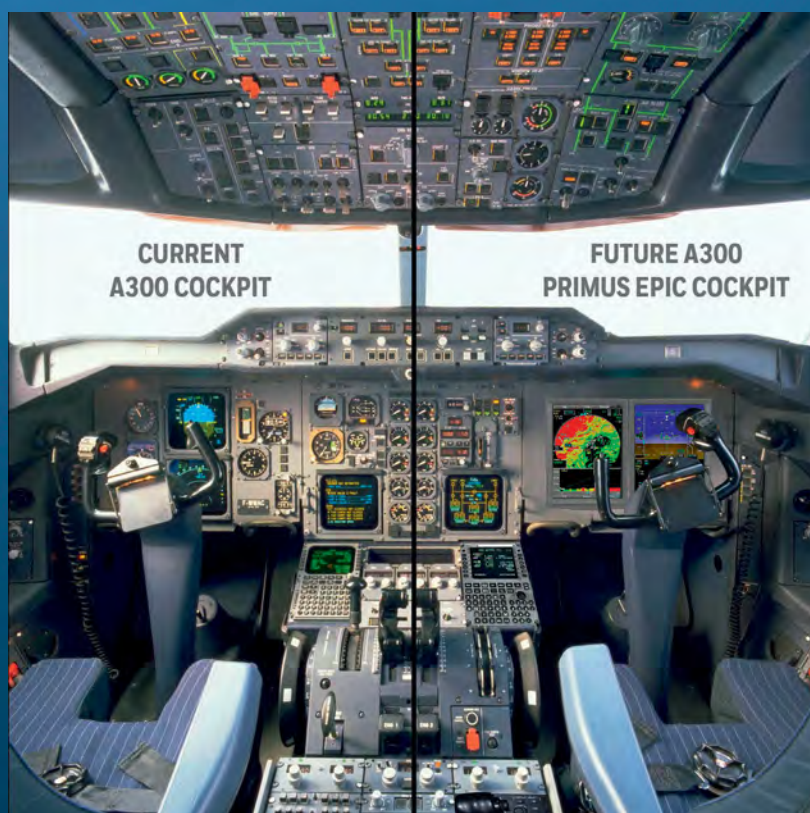
As the primary integrator for the project, responsibility for planning and undertaking the modifications now rests with Airbus. It's an unusual undertaking for the European aerospace giant, but bearing in mind that the last A300s rolled off the production line in 2007, it represents a firm commitment to deliver long-term support to its global fleet.

Olivier Criou, Head of A300/A310 Programme, Airbus Customer Services reflected: "Our work doesn't stop after certification or even after delivery of the final aircraft – we are always looking for further improvements."

He added: "The A300 is a very durable aircraft with a robust structure and is well suited to operations such as those with UPS, not just today but also in the foreseeable future. This justifies the decision to upgrade the avionics."

The project covers the modification of the lateral cockpit panels as well as replacing some of the systems (with associated changes to the wiring and avionics racks). Criou said Airbus's initial priority will be to define the revised avionics architecture and the final cockpit layout, before working on the various interfaces to ensure the new and existing systems function smoothly together.

Notably, the manufacturer is also responsible testing and certification, meaning the upgrades can be offered to other operators of both the A300 and the A310. **VIEW**



**Before and after: The modification programme includes replacing the now-obsolete CRT displays with new LCD screens, while some of the electro-mechanical instruments will be upgraded with an integrated system.**

VIA UPS



*LaudaMotion  
Bombardier Challenger  
300 OE-HDC (c/n  
20310) glistens  
against the backdrop  
of a low sun.*



*BELOW • Gulfstream  
G550 N510SR (c/n  
5021) arrived from  
Milan/Linate on the  
Friday, making an  
overnight stop.*



Cardiff hosted this year's UEFA Champions League Final between Real Madrid and Juventus on June 2, bringing an array of unusual traffic to the Welsh capital.

**Phil Woods** was at Cardiff Airport to capture the action as the airlift unfolded.

# Football hits Fever Cardiff

*Alitalia provided the  
bulk of the flights  
bringing Juventus  
fans to the game.*  
ALL PHOTOS PHIL WOODS







Iberia Airbus A321-212 EC-IXD (c/n 2220) climbs away from Cardiff, having brought a group of Real Madrid fans in for the game.



Cardiff also hosted the UEFA Women's Champions League Final between Lyon and Paris St Germain. The former arrived in Wales on board ERJ 135ER F-GRGP (c/n 145188).



New Italian charter operator Ernest Airlines was one of the more unusual visitors. The carrier's sole Airbus A319-111 EI-FVG (c/n 1362) departs Cardiff after operating a flight from Milan/Malpensa.



AlbaStar has leased Air Explore Boeing 737-86J OM-NAS (c/n 32920), which operated an early morning flight from Bergamo on the morning of the match.



Due to the substantial number of supporters needing transport to Cardiff, Alitalia and Iberia used widebody aircraft. Airbus A330-202 I-EJGA (c/n 825) visited the Welsh airport on the Saturday morning.



*Carpatair Fokker 100 YR-FZA (c/n 11395) tidies away its landing gear on departure from Cardiff. The aircraft brought Juventus fans to Cardiff from Milan/Malpensa.*



*The Real Madrid squad arrived in Wales on board Iberia Airbus A321-212 EC-HUH (c/n 1021).*



*Twin Jet flight 670A, operated by Beech 1900D F-GRYL (c/n UE-301), was a Saturday morning arrival from Brussels.*



*The game also attracted a broad selection of private jets, including Cessna 560 Citation Encore+ I-ZACK (c/n 560-0767).*



*Aviro Air's eye-catching British Aerospace 146-300 YR-AVR (E3193) operated a charter flight from Milan/Malpensa.*





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Adolfo Suárez Madrid Barajas handled more than 50m passengers last year, placing it sixth in Europe and 25th in the world. Renato Serra Fonseca explores the airport and the large-scale redevelopment it has undergone in recent years.

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FROM **THE COCKPIT**   
Britten-Norman BN-2 Islander

# Versatility Personified

**T**here are very few types that remain in production more than 50 years after they first flew. But Britten-Norman's (BN) Islander is not only an iconic machine, it's also one of the most successful British aircraft ever made. Designed by John Britten and Desmond Norman, it was initially intended for short-haul, high-frequency commuter operations but has subsequently been adapted for a wide variety of roles, both civilian and military. The BN-2 has proven itself to be an excellent feeder liner and has long been a favourite with freight companies, parachute schools, air ambulance operators and the military.

UK-based BN has built and delivered more than 1,250 Islanders since the type took to the air for the first time in June 1965, with examples now operating in over 120 countries. It is currently available in several different variants and powered by either 260 or 300hp Lycoming piston engines, or Rolls-Royce (320 or 400hp) turboprops.

## **Function Over Form**


Presented with a most welcome opportunity to put the Islander through its paces, I find myself at BN's Lee-on-the-Solent assembly facility in the company of highly experienced test pilot Simon Hargreaves. Our steed for today's trip is the latest example off the production line. It will

soon be delivered to a regional carrier in mainland Europe and is configured as a feeder-liner capable of carrying up to nine passengers.

The first port of call is a busy hangar, where Hargreaves points out the aircraft's salient features.

In many respects, the Islander can be compared to a flying Land Rover, even down to the boxy cabin. Bereft of frills or superfluities (except for the Executive version, which is quite





An aircraft that's as suited to flying regional passenger and freighter services as it is paradropping or serving as a special mission platform – it can only be the Britten-Norman Islander.

**Dave Unwin** puts the venerable workhorse through its paces.

In many respects, the Islander can be compared to a flying Land Rover, even down to the boxy cabin. Bereft of frills or superfluities, it's a functional, utilitarian machine.

rather noisy.

Power on this example comes from a pair of Lycoming IO-540 air-cooled flat-sixes, which produce 300hp and turn Hartzell constant-speed fully feathering 'Scimitar' props. They are fed from wing fuel tanks (one in each wing) with a combined capacity of 108.2 imp gal (492 lit). Tip tanks can be fitted as an optional extra, increasing capacity to 179 gal (814 lit).

For those of you wondering why a brand-new aircraft is fitted with piston engines, the answer is simple. Turbines are wonderfully reliable powerplants, but they do have one significant drawback – it's not the hours that wear them out, but the cycles (being started up and shut down). Like

many Islanders, this particular aircraft will be used mostly on short, high-frequency services, hence its operator has opted for the Lycomings.

The Islander is certified to fly from >>

*Britten-Norman has built and delivered more than 1,250 Islanders since the type took to the air for the first time in June 1965, with examples now operating in over 120 countries.*

ALL PHOTOS  
BRITTEN-NORMAN

*The author runs through the pre-flight checklist in the company of highly experienced test pilot Simon Hargreaves.*

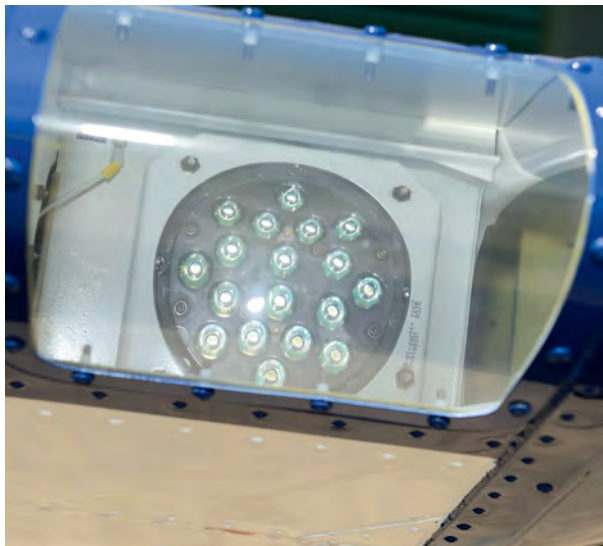
luxurious), it's a functional, utilitarian machine. An all-metal high wing monoplane of entirely conventional design and construction, the one-piece cantilever wing is riveted to the spar torsion box structure and has no dihedral and just two degrees of incidence, while the wingtips have a slight upsweep. The trailing edge consists of cable-operated slotted Frise ailerons fitted with mass balances and large electrically actuated slotted flaps which have three settings; Up, T/O

(take-off, 25°) and Down (56°).

An excellent example of the design logic applied to the Islander, where form clearly followed function, is in the location of its engines. As they're mounted up on the high wing, prop clearance is excellent, while being close to the aircraft's centreline means the minimum controllable airspeed on one engine (Vmca), is very low. This is a good thing for the pilot, but the proximity of the engines to the fuselage means the cabin can be







unimproved landing strips (including beaches!), and consequently the fixed undercarriage is every bit as rugged as you'd imagine. It consists of a large single nosewheel, while the twin mainwheels are attached to a streamlined strut that connects to the wing behind each engine nacelle.

Parker Hannifin disc brakes are fitted to the mainwheels and all three undercarriage units have oleo-pneumatic shock absorbers. Notably, all five wheels use the same sized tyre – ideal for use from rudimentary airstrips where access to spares may be limited.

Interestingly, although the nose-wheel steers through the rudder pedals, beyond 45° it automatically disengages and becomes free-castoring, giving the aircraft an incredibly tight turning radius of under 33ft (10m). The wheel track is also commendably wide, giving good stability on the ground, but the main undercarriage struts are quite long and, although they would clearly soak up vertical and longitudinal loads with aplomb, they're possibly not quite so tolerant of lateral loads. I make a note that it's probably best not to land with any drift on.

The tail consists of a big, slightly swept fin and large rudder, fixed tail-

plane and mass-balanced elevator. The rudder and elevator are actuated by a combination of pushrods and cables and both are fitted with trim tabs. The elevator feels very heavy on the ground, but soon lightens up when the air starts flowing over it.

The square-section cabin and flat floor allow the aircraft to be quickly reconfigured for different roles. It can even be used as a crop-sprayer or for oil dispersal, as underwing hardpoints allow spray booms or external pods to be carried.

Access to the cabin is via doors on both sides of the fuselage, with an additional cargo door to port. Sliding doors – for special missions, paratropping or simply for improved access – are an option, while low door sills make loading freight easy.

The cabin doors are complemented by a pilot's door on the port side, an arrangement I like for several reasons. If you're using the aircraft as a freighter you can fill the cabin to capacity without having to leave space for an aisle. The cabin is 184cu ft (5.2m<sup>3</sup>) and can accommodate up to a tonne of freight but, like most small freighters, it will often 'bulk out' (run out of space) before it 'grosses out' (runs out of

weight-carrying capacity). Secondly, in situations without ground crew, pilots prefer to personally check that the doors have been shut and locked correctly.

### Glass Cockpit

With Hargreaves in the other seat I take stock of the cockpit. The seat and pedals both adjust (which I like), but the harness is of the three-point type (which I don't). A four-point harness is an option, but I feel quite strongly that the pilot's seat should always be fitted with adequate restraints – in severe turbulence, a three-point inertial-reel system simply isn't enough.

Overall, I like the cockpit layout. The instrument panel is clean and uncluttered – the dual screens of the

**TOP LEFT • Three-bladed, constant-speed, fully feathering Hartzell Scimitar propellers are offered as standard on new-build Islanders.**

**TOP • The aircraft is available with a choice of powerplants including either 260 or 300hp Lycoming piston engines, or 320 or 400hp Rolls-Royce turbines.**

**ABOVE LEFT • One of the two fully enclosed landing lights, which are housed in each wingtip.**

**ABOVE • Although the nosewheel steers through the rudder pedals, beyond 45° it automatically disengages and becomes free-castoring, giving the aircraft an incredibly tight turning radius of under 33ft (10m).**

**It can even be used as a crop-sprayer or for oil dispersal, as underwing hardpoints allow spray booms or external pods to be carried.**

Garmin G600 multi-function display (MFD) are directly in front of the pilot, with the excellent JP Instruments (JPI) EDM 960 engine monitoring system in the centre of the panel and the GTN 650 and 750 navigation/communications unit on the right. As the Islander is very much a single-pilot aircraft I think the latter should be mounted in such a way that it's angled slightly towards the pilot. This would reduce parallax while also making the touch-screen easier to operate in turbulence.

The standby analogue airspeed indicator (ASI), attitude indicator and altimeter are arranged in a row beneath the G600, and while this layout is acceptable I think they'd be better in a column to the left of the MFD. An even better solution would be an Aspen Avionics EFD-1000 'Evolution' standby instrument or similar, an entirely self-contained unit





*The cockpit can be accessed via a dedicated door on the port side, allowing the cabin to be filled to capacity without having to leave an aisle. It also allows pilots to personally check the aircraft's doors are shut and locked correctly – useful in situations without ground crew.*



*The Islander is certified to fly from unimproved landing strips and, consequently, the fixed undercarriage is every bit as rugged as you'd imagine. It consists of a large single nosewheel, while the twin mainwheels are attached to a streamlined strut that connects to the wing behind each engine nacelle.*

(it even has an integral battery) that provides airspeed, altitude, attitude and navigation information. As well as being an easier system to use, it would also allow BN to delete the vacuum pump, suction gauge and associated plumbing.

To the right of the altimeter is an annunciator panel, while above the G600 are digital displays for each engine's manifold pressure and RPM. This seemed a little excessive to me as this information is clearly presented on the EDM 930 display, but it's part of the standard JPI set-up.

A large central pedestal carries the throttle, prop and mixture levers for each engine, with the flap switch directly underneath and then the park brake and (redundant) carb heat controls. Interestingly, the Islander is not equipped with cowl flaps – used to aid engine cooling on high-performance piston aircraft.

The large elevator trim wheel is curiously mounted on the starboard side of the pedestal (ie away from the pilot), while the rudder trimmer is in the roof. Both are purely manual. Three lights between the G600 and JPI screens show flap position.

I like the layout of the electrical switches, with the magnetos, boost pumps and starter switch all contained in a neat panel above the windscreen, and all the others below the pilot's dash-mounted yoke. The switches, which are mostly large toggles, are robust – another plus point – but I did wonder if perhaps they would be better colour-coded (they're all a somewhat anonymous silver). All the circuit breakers are on the other side of the panel, easy to see and – more importantly – reach.

## Airborne

Having settled into my seat I notice that the rudder pedals seem ever-so-slightly offset in relation to the control yoke. Both engines start readily and we're soon taxiing out. The throttle levers are surprisingly stiff, and I automatically check the friction lock, even though Hargreaves already explained that they aren't set up quite right. In fairness, this particular aircraft is still in pre-delivery flight test, and I'm sure that it will be sorted before being released to service. It's a little surprising that such items still need tweaking despite BN having produced more than 1,250 Islanders over the last five decades, though it's worth highlighting that each example is hand-built.

The field of view is excellent, and the combination of powerful progressive brakes, differential thrust and a steerable nosewheel make the Islander very easy to manoeuvre on the ground. Hargreaves encourages me to force the nosewheel into 'caster' and then, with a dab of brake and some >>





differential thrust, the aircraft simply pivots around the mainwheels. I'm quite timid with this (as I don't want to scrub the tyres) but can clearly see just how easy a 180° turn on a narrow airstrip could be.

Having ensured that the nosewheel steering has automatically re-engaged I carry on to Solent Airport's Runway 23. With only Hargreaves and I aboard and full fuel we are around 1,543lb (700kg) below the maximum all-up weight (MAUW) of 6,600lb (2,994kg).

As the airfield is essentially at sea level and the temperature is 63°F (17°C) the ambient conditions are very close to International Standard Atmosphere (ISA) with a gentle breeze down the runway.

The pre-take-off checks are very straightforward, so I carefully position the Islander on the centreline and push the too-stiff throttles open. The acceleration is excellent and as the speed sweeps imperiously past 55kts I initiate a gentle rotation – the Islander practically leaps off the runway and climbs away at just over 1,200ft/min and 70kts.

During the pre-flight briefing Hargreaves explained we'd probably get a 'propeller overspeed' caution just after take-off, and we did. This wasn't a malfunction – in order to keep the noise down, the system is designed to warn the pilot when the RPM goes above 2,600 and, in this instance, the governors which maintain a given RPM were yet to be set up correctly for the Scimitar propellers.

Retracting the flaps causes just a very subtle change in pitch which is easily trimmed out and we soar up into the summer sky above the sparkling Solent.

*The wheel track is commendably wide, giving good stability on the ground.*

*The Islander's glass cockpit features the dual screens of the Garmin G600 multi-function display (MFD) directly in front of the pilot, a JPI EDM 960 engine monitoring system in the centre and the GTN 650 and 750 navigation/communications unit on the right.*

As we climb I try a few gentle turns and this confirms what I'd expected – this is a very stable aeroplane. The ailerons are actually a little heavy, although I soon get used to them.

Levelling out at 4,000ft I begin to examine the Islander's forte – slow flight and stalls. The wing retains a tenacious grip on the air and, with flaps selected up, the aircraft stalls at a creditable 44kts. This drops to a remarkable 36kts with the flaps down. The stall warner (there's a horn and a light) activates about 5kts above critical alpha (angle of attack), and when the wing finally does quit flying it always breaks straight ahead. For the final stall I set take-off flap, open the

throttles and just keep hauling the nose up... and up... and up! A full power departure stall can often bring out the worst in an aeroplane, but the Islander is so well mannered that even when it is being roundly abused in this fashion, nothing unpleasant happens. The ASI's speed tape sinks to just 33kts (and remember, our weight is still around 4,850lb [2,200kg]) before the Islander reluctantly pitches down and the wing instantly starts flying again. This is an incredibly docile aircraft.

Moving onto the stability and control confirms that, although there is plenty of control, the designers have placed even more emphasis on stability. The Islander's stick-free >>











*The magnetos, boost pumps and starter switch are all contained in a neat panel above the windscreen.*

stability is strongly positive longitudinally and directionally, and weakly neutral laterally. Overall it is very docile, and it would not be a hard aircraft to fly on instruments. Having spiralled down to 3,500ft Hargreaves sets zero thrust on the port engine to simulate a feathered prop and I assess the single-engine performance and controllability. At 65kts, half a ball out on the turn and slip indicator and a few degrees of bank into the 'live' engine, the climb rate is a perfectly acceptable 300ft/min (remember we are at 3,500ft) and the aircraft is eminently controllable. I'll confess that I don't find the operation of the roof-mounted rudder trimmer intuitive initially, but

soon get the hang of it.

Having slowly brought the power back up on the port engine I set 24/24 (24in of manifold pressure and 2,400rpm), trim forward carefully and concentrate on holding the aircraft exactly level at 2,500ft while Hargreaves helpfully notes down the speed and fuel flow. The indicated airspeed (IAS) of 128kts means a true airspeed (the aircraft's speed relative to the airmass in which it is flying – TAS) of 133kts, while the fuel flow is 9.9 gal (45 lit) per hour on each side. Pulling the power back to 21/21 the speed dips to 114 IAS (119 TAS) while the total fuel flow reduces to around 17.6 gal (80 lit) per hour.







*The wing retains a tenacious grip on the air and, with flaps selected up, the aircraft stalls at a creditable 44kts. This drops to a remarkable 36kts with the flaps down.*

As the circuit direction for Runway 23 is right hand and I'm in the left seat, positioning could be a little tricky in some aircraft, but the field of view is excellent and I have no problem judging when to turn base. For my first landing I fly a conventional approach, ensuring that I keep the speed above 65kts (V<sub>mc</sub>) until very short final. I select the first stage of flap on base and full flap on final, but delay pushing the props up to 'Max RPM' to keep the noise down.

Speed control is easy all the way round the circuit but I flare slightly too high and the touchdown is 'firm but fair'. "The undercarriage struts are long, but not that long" laughs Hargreaves, before allowing that the Islander is a little "stiff-legged". As briefed this is a 'touch and go' and almost as soon as the throttles hit the stops we're airborne again.

As the second landing is a significant improvement on the first I elect to retract the flaps fully for the next departure. Such is the Islander's excellent performance that I really can't discern any noteworthy

BELOW LEFT • A large central pedestal carries the throttle, prop and mixture levers for each engine, with the flap switch and park brake directly underneath.

The EDM 960 shows a variety of parameters, including engine temperatures and pressures, fuel quantity and flow rate in a single integrated display. Manifold pressure and RPM are repeated on small digital displays above the G600.

## Approaching Solent

With everything else on the flight test card ticked off, it's time to head back to Solent Airport for some circuits. As the runway here is 4,295ft (1,309m) of smooth tarmac, it's not really representative of an Islander's natural environment, and I really wish we could try a few farm strips, but there just isn't time.





## Britten-Norman BN-2 Islander

### Dimensions

Length	36ft (10.97m)
Height	12ft 5in (3.78m)
Wing span	49ft (14.93m)
Wing area	325sq ft (30.19m <sup>2</sup> )

### Weights and loadings

Empty weight	4,114lb (1,866kg)
Max AUW	6,600lb (2,994kg)
Useful load	2,287lb (1,128kg)
Fuel capacity	108.2gal (492lit)

### Performance

Vne (never exceed speed)	183kts
Cruise	142kts
Stall	40kts
Climb rate	1,130ft/min
Service ceiling	17,200ft

Engines	2 x Lycoming IO-540 fuel-injected air-cooled flat-sixes, producing 300hp each at 2,700rpm, turning Hartzell Scimitar composite three-blade constant-speed fully feathering propellers.
---------	--

difference in the take-off run.

Turning downwind Hargreaves briefs me to make this a STOL (short take-off and landing) approach, which entails getting full flap down a little earlier and trimming for 56kts on final. We are now using a 'back side' technique, where speed is controlled completely with pitch, while power controls the descent rate.

Hargreaves emphasises that accurate speed control is very important, and that I might just need a suggestion of power in the flare to cushion the

touchdown. The aircraft is so speed-stable that I have no trouble at all nailing the speed tape to 56, but the touchdown point is further up the runway than I intended. It almost feels as if it could use a little more flap, but there is practically no wind. Landing in a strong headwind must be great sport, and I imagine you can practically hover the Islander onto the runway (which is quite apposite, bearing in mind Hargreaves's impressive CV – he spent 20 years in the Royal Navy flying the V/STOL Sea Harrier and, as a test pilot, was involved in the fifth-generation Lockheed Martin X-35 programme).

Round we go again, and this time on very short final I sense the sink rate building so try to add just a squeeze of throttle as Hargreaves says, "a little power". The throttles don't move and as Hargreaves says "power" with a bit more urgency, I push the levers harder, the engines roar and in a heartbeat we're flying again – damn those stiff throttles!

**Landing in a strong headwind must be great sport, and I imagine you can practically hover the Islander onto the runway...**

*It's hard not to be impressed by the Islander, and easy to see why it's still in production more than 50 years after it first flew. It may look like a very simple aircraft, but this belies a very clever design.*

My next attempt is much better, so as soon as the wheels touch I lower the nose and brake firmly to a stop. We don't use much runway, and it's worth mentioning that I only had an hour on type. A bit more practice and a decent wind on the nose and I'm sure I could get the Islander down and stopped in a very short distance – the pilot's operating handbook claims a stopping distance of only 980ft (299m) when landing over a 50ft (15m) obstacle.

Now for a STOL take-off, so with flaps set to 25° I run the engines up to full power against the brakes, and then release them. The acceleration is excellent and as the speed tape hits 50 I pull the nose up and the Islander leaps off the ground, after a surprisingly short ground run. On the following landing I hold the nose up for aerodynamic braking and roll almost to the end of the runway with the nosewheel still in the air, such is the power of the elevator.

It's hard not to be impressed by the Islander, and easy to see why it's still in production more than 50 years after it first flew. It may look like a very simple aircraft, but this belies a very clever design. As Leonardo da Vinci observed "simplicity is the ultimate sophistication" – and for a short-haul feederliner or a freighter hopping from island to island, it's hard to imagine a more capable machine. **AWA**





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*Kalitta Air's  
Boeing 747-  
446(BCF), N744CK  
(c/n 26353), seen  
on short-finals  
to Ramstein  
Air Base,  
Germany.*

PHOTO • RAINER BEXTEN









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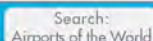
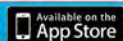
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*This Jet Air Jetstream 32, SP-KWF (c/n 845) makes its final approach into Warsaw/Chopin International in March 2010. AIRTEAMIMAGES.COM/JAN OSTROWSKI*

British Aerospace inherited several developing commercial turboprop aircraft programmes in 1977, which brought mixed fortunes to the then newly created company, as **Barry Lloyd** recounts.

# Turboprop Tribulations



*Avro 748 prototype, G-APZV was displayed for the first time at the 1960 Farnborough Airshow, just two months after its maiden flight. AIRTEAMIMAGES.COM/BOB O'BRIEN COLLECTION*

The Labour Government's decision to nationalise the UK aerospace and shipbuilding industries through the Aircraft and Shipbuilding Act 1977, saw British Aircraft Corporation, Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Scottish Aviation all merged into the new British Aerospace on April 29, 1977. The consolidated company benefited from many projects already under development, not least a family of turboprop airliners that served the 18 to 58-seat market.

## The Feederliner

The British Aerospace Jetstream, as it is known today, originally started life as the Handley-Page HP.137 and was fitted with the then revolutionary Turbomeca Astazou turboprop engine, developed largely for the helicopter market. The first production model Jetstream 1 flew on December 6, 1968, but Handley Page was unhappy with the engine performance. Instead it installed the more powerful Astazou XVI and re-designated it as the Jetstream 2. The re-engining decision brought a significant increase >>





in development expenditure, which in turn caused delays to deliveries, driving costs up from the original £3m to more than £13m. Production was halted and the assembly line was eventually shut down after just three examples had been completed. It spelled the end for Handley Page, which went into voluntary liquidation in March 1970, and was wound up after 61 years of trading.

Prestwick Airport-based Scottish Aviation purchased the design rights shortly afterwards and formed Jetstream Aircraft to relaunch production. Following its absorption into British Aerospace, development continued and a Mark 3 variant was proposed, equipped with the then Garrett (later Honeywell) TPE 331 turboprop engines, to improve sales prospects in North America. The aircraft was designed as an 18-seater, with six rows of 2+1 seats. To ease pressurisation the fuselage had a circular cross-section,

**The third Handley Page HP 137 Jetstream 1, G-ATXJ (c/n 200), is parked on the grass at London/Luton after the manufacturer went into voluntary liquidation in March 1970.**

AIRTEAMIMAGES.COM/  
CARL FORD

**Humberside Airport-based Eastern Airways has become one of the largest operators of the BAe Jetstream 41. It flies the 29-seat regional commuter aircraft across its domestic network.** AIRTEAMIMAGES.COM/STUART LAWSON

however one drawback of this design meant the cabin floor had to be lowered to allow passengers head room for entry and egress through the rear door. This resulted in the main spar running across the cabin, causing a trip hazard. The design team also felt the Jetstream's overall appearance needed to be streamlined, which led, amongst other things, to the distinctive longer nose.

**The aircraft didn't have a sparkling take-off performance from short runways or high airfields at maximum weights, but it was well matched to short-haul commuter flights from established airports.**

There were two principal markets in the designers' minds, North America and Australia, and indeed the Jetstream 31 (J31), as it was renamed, became very popular in the US as a feederliner – transporting passengers from smaller airports into larger carriers' hubs – while many were also sold to and flown in Canada and Australia. These countries are largely blessed with long runways and relatively low-level facilities, which were ideally suited to J31 operations. The aircraft didn't have a sparkling take-off performance from short runways or high airfields at maximum weights, but it was well matched to short-haul commuter flights from established airports. With this in mind, a further engine upgrade was proposed and designated the Jetstream 32 (J32). This variant entered service in 1988 and increased the type's sales significantly, however the amount of baggage space on board





had always been limited. Its success as a feederliner, chiefly in the US market, led to fuller cabins. Many of the passengers carried unchecked luggage, which would not fit in the cabin, so a pannier beneath the fuselage was developed to accommodate increased baggage loads.

More than 310 Jetstream 31/32s had been delivered by 1987, with 80 per cent of them in North America, operating with feeder carriers such as Flagship Airlines (American Eagle), Pan Am Express, Presidential Airways (United Express), Wings West Airlines (American Eagle), Air BC (Air Canada) and Ontario Express (Canadian Airlines). A few also flew in Europe with Birmingham Executive Aviation, Netherlines and Sun-Air, among others. The turboprop saw military service with the Royal Air Force and Royal Navy, while Saudi Arabia acquired two J31s as navigator trainers for Tornado squadrons, and several VIP versions were produced, usually seating 10 passengers. Production of the Jetstream 31/32 ended in 1993 with 380 aircraft completed, of which 320 were delivered to the USA.

### Increasing Capacity

Following the achievements of the J32, new entrants to the market, such as the Embraer Brasilia, Dornier 328 and Saab 340, forced BAe to look at a stretched version, with develop-



*This Jetstream 31 owned by Argentinian carrier Macair Jet, shows off the type's sprightly performance.*

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SEBASTIAN FERNANDEZ  
BIELKIEWIC

*French company Aviation Defense Service (AVdef) delivers air defence training using this BAe Jetstream 41, F-HAVD (c/n 41022).*

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JONATHAN ZANINGER

*Links Air flew scheduled regional and charter services using this Jetstream 31 until the Civil Aviation Authority suspended its operating certificate in October 2015. AIRTEAMIMAGES.COM/ALUN MORRIS*

ment work on the Jetstream 41 (J41) announced in mid-1989. The 29-seat prototype G-GCJL (c/n 41001) made its first flight on September 25, 1991. However, the J41 failed to meet the manufacturer's sales expectations as its rivals gained a foothold in the market. Less than six years later, BAe announced it was terminating J41 pro-

duction after 104 examples had been produced.

There are still many J31/32s in service all over the world, both with short-haul, military and corporate users, but perhaps the most interesting is flown by Cranfield Aerospace and the National Flight Laboratory Centre at Cranfield University. The >>







*The strength of the HS 748's airframe made it ideal for use on unprepared airstrips such as the arctic ice and snow runways of northern Canada.* AIRTEAMIMAGES. COM/SIMON WILLSON



*The HS 748 proved very adaptable and served in many roles. California-based firefighting specialists MacAvia International contracted Cranfield Aeronautical Services to convert this aircraft into an aerial tanker. However, sales failed to materialise and the project was abandoned.* AIRTEAMIMAGES. COM/ATI COLLECTION

aircraft, G-BWWW (c/n 614), was originally owned by The Distillers Company, but has been converted to fly autonomously – without anybody onboard. The team has flown a series of missions proving the concepts of unmanned air systems technology, which includes the installation of a high-tech sensor suite. Despite the initial trial accomplishment, there is a considerable amount of work still to do before pilotless commercial airliners become a reality.

## Enter the Avro

Another programme BAe inherited was the versatile multi-role Hawker Siddeley 748. It had its origins in the 1957 Defence White Paper, which rather optimistically stated that future aircraft for the Royal Air Force would not need to be manned. This took many people by surprise, not least at Avro, whose output to that date had included famous military types, such as the Lancaster, Shackleton and the Vulcan. The manufacturer initiated a series of

marketing studies, during which it discovered there were more than 3,000 Douglas DC-3s still in service and they needed replacing soon. A more in-depth review was actioned to identify the design features required for a DC-3 replacement. A low wing design meant that there would be no restrictions on cabin headroom and this, together with a sturdy undercarriage to allow the turboprop to land on unprepared strips, formed the basis of the initial design.

In January 1959, board approval was given to begin construction, with the prototype making its maiden flight on June 24, 1960. The aircraft, G-APZV (c/n 1534), was airborne for almost three hours, then a record for a civil airliner. Buoyed by this, the design department quickly started working on a Series 2 variant, equipped with the higher-powered Rolls-Royce Dart 7 engines, which increased both payload and range. The second prototype, G-ARAY (c/n 1535), flew for the first time on April 10, 1961. It should have taken to the skies earlier, but a disastrous fire in October 1959 at the company's Chadderton factory – one of several that occurred over a 12-month period – caused a roof girder to fall onto the fuselage, delaying production.

Avon used the fire damage to turn adversity into an advantage. The opportunity was taken to convert G-ARAY to a Series 2 model, and by November 1961 it was flying again. Soon the type was being seen all over the world, undertaking sales tours on several continents, but another challenge was not far away. In January 1962 Avro was asked to prove its claim the 748 could operate from any surface in a fly-off with the Handley-Page

*Mount Cook Airline helped pioneer New Zealand's domestic 'tourist trail' using its fleet of HS 748s. The first aircraft arrived in 1968 and the type served with the carrier until October 1995 when it was replaced by ATR 72-200s.* AIRTEAMIMAGES. COM/BOB O'BRIEN COLLECTION







**In January 1962 Avro was asked to prove its claim the 748 could operate from any surface in a fly-off with the Handley-Page Dart Herald**

Dart Herald at RAF Martlesham Heath in Suffolk – with a contract for 31 military freighters at stake. The army had been brought in to plough up part of the airfield, and rain had also fallen, which did not improve the deeply-rutted surface. But despite the mud and stones, the 748 performed its task and remained undamaged, whereas, its rival did not fare so well. Avro were awarded the contract.

The variant, designated the Avro 780 initially, was modified to accommodate an upswept rear fuselage, allowing a rear loading ramp to be fitted, together with a 'kneeling' undercarriage arrangement to facilitate loading. It was fitted with a more powerful version of the Dart engine and larger-bladed propellers. Renamed the 748MF, its maiden flight took place at the end of 1963 and production aircraft followed in 1965, the first four being delivered to Boscombe Down for evaluation. It entered RAF service as the Andover C.1 the following year. The design spawned two further versions – the Andover CC.2 VIP transport and the Andover E.3 electronic calibration version.

**ABOVE** • Today, there are still a handful of 748s left flying in Canada and one or two in Africa – a testament to the type's build quality and longevity. AIRTEAMIMAGES.COM/CARL FORD

**TOP** • By snapping up second-hand examples when they became available, Dan-Air operated one of the largest fleets of the HS 748 on its extensive network. AIRTEAMIMAGES.COM/BOB O'BRIEN COLLECTION

**Even former Trans World Airlines (TWA) owner Howard Hughes took a shine to the 748 and bought an example after taking a demonstration flight. He didn't fly it again and after his death the aircraft was sold to Mount Cook Airlines. WIKIMEDIA COMMONS-ROB HODGKINS**

## Improving the Design

Meanwhile, 748 demonstration tours continued and orders followed. The design department did not rest on its laurels and was working on another up-rated version, the 748 2A. This would feature an improved version of the Dart 7, which gave a significant improvement in performance. The sales successes with early VIP versions

prompted Hawker Siddeley to produce a version with an improved range specifically for this market and these were supplied to no less than 15 heads of state around the world, including the UK's Royal Flight. It was used in several other roles, such as evaluating and calibrating radio navigation systems and instrument landing systems (ILS) with the Civil Aviation Authority, the BFS (German Flight Safety Unit), and several well-known oil companies, as well as other corporate organisations.

By the mid-1970s, the 748 could be seen on five continents. Its reliability and ability to operate from hot and high unpaved airfields, had clearly been a significant selling point, opening routes that would not previously have been possible, especially in less-developed nations. By this time, second-hand examples were also coming onto the market and there was no shortage of buyers, with Dan-Air acquiring 18 examples, while Canadian carriers found the 748's ruggedness suited their operations extremely well and an increasing number of the type, especially those equipped with large freight doors, found their way north.

In India, Hindustan Aeronautics built 89 Series 1 and 2s under licence, with 72 delivered to the air force and 17 joining Indian Airlines. The first six were supplied in kit form, the remainder were built in Kanpur. One 748 made it back to its original home in 1966 for performance trials and a cabin re-fit. None of the others saw service outside India and its air force continues to use the type today.

In the early 1980s, the Series 2B was launched with an upgraded Dart >>

## A Famous Owner

Perhaps the most unusual sale came from what began as a phone call to the chief test pilot at Woodford, Tony Blackman, one day in the summer of 1972, asking him to undertake a demonstration flight in Hatfield. Nothing unusual in that, except Blackman was amazed to find that the person he would be demonstrating to was Howard Hughes. At the time, Hughes was practically a recluse and detested appearing in public, so a clandestine meeting took place in a nearby hotel car park and Hughes was brought into Hatfield via a side entrance. The aircraft chosen was company demonstrator G-AYYG (c/n 1697), towed into the flight-test hangar at Hatfield amid

great secrecy. Most of the staff were deployed elsewhere for the duration of his visit. Hughes flew the demonstrator and liked it so much he decided to buy it almost immediately, following which it was flown back to Woodford. However, Hughes never took delivery of the aircraft and it spent most of its time in the hangar. It never flew again until after Hughes' death in 1976, although it was regularly inspected and had engine runs from time-to-time. It was eventually sold to Mount Cook Airlines in New Zealand in late 1976 and then returned to the UK as part of the Dan-Air 748 fleet. It ended its life as G-OSOE with Emerald Airways.







engine fitted with improved hush kits, extended wing-tips, a modernised flight deck and a revised galley. The upgrades also offered an improved take-off performance and it achieved moderate sales success. But increased competition from the ATR 42, Fokker 50 and the de Havilland Canada Dash 8 affected sales and orders began to slow. The newer designs benefited from more economic Pratt & Whitney

*The 748 was also used to evaluate and calibrate radio navigational systems and instrument landing systems (ILS) for the Civil Aviation Authority and the German Flight Safety Unit. AIRTEAMIMAGES.COM/CARL FORD*

(P&W) engines and with Rolls-Royce unwilling to invest further in turboprop engines, production of the 748 ended in 1988, by which time 380 examples had been delivered.

There are still a handful of 748s flying today. Apart from the Indian-built models, a few earn their keep in Canada, and one or two in Africa are believed to be still airworthy. Given the conditions under which the 748

has operated around the world, from the tropics to the cold extremes of northern Canada, it simply serves to show that the aircraft was designed and built to last.

### **A Final Stretch**

By the mid-1980s, sales of the 748 were drying up and BAe designers' thoughts turned to a completely updated design, the advanced turbo-





prop (ATP), in response to increasing demand for larger regional aircraft. Rival ATR was already working on the ATR 72, an extended version of the ATR 42, and Bombardier's Dash 8-300 was at an advanced design stage. Both were chasing the 60 to 70-seat market and BAE wanted a slice of this action.

The 748-design was tried and trusted, and there was the ability to easily stretch the fuselage to accommodate more seats, but more powerful engines were required. Propeller technology was improving so the company decided to adopt a Hamilton Standard six-bladed model mated to the P&W PW126 engine. With the advent of improved electronic systems, the opportunity was seized to install an electronic flight instrument system (EFIS) in the cockpit, rather than the electro-mechanical systems previously used. The thinking was to reduce pilot workload, which tends to be high on short-haul routes.

The first ATP, G-MATP (c/n 2001) flew from Woodford on August 6, 1986. The test flight went very well and hopes were high that Manchester had designed another winner. Initial interest was encouraging, with an order for ten coming from Wings West Airlines, then part of AMR Corporation and based in San Luis Obispo,



California. British Airways and the British Midland Group were also showing interest in the type, and although the first production aircraft were allocated to Wings West they were never delivered, and were transferred to the two British airlines instead.

British Airways originally planned to use the ATP on its Scottish routes, taking advantage of some of the landing and take-off characteristics retained from the 748, which were well suited to the Highlands and Islands operation. In practice though, British Airways used them on wider domestic services, with several based at Manchester. The British Midland Group allocated



several ATPs to each of its subsidiaries, British Midland itself, Isle of Man-based Manx Airlines and Loganair of Glasgow.

The ATP achieved only limited overseas sales with small numbers sold to carriers in Indonesia, Bangladesh and Portugal, but problems with the type, particularly its undercarriage, began to emerge and soon it had earned the sobriquet 'another technical problem'. News of the problems circulated quickly and salesmen had an increasingly difficult job to persuade airlines to buy the ATP. This was coupled with a sense, both inside and outside the company, that senior management was losing interest in its Commercial Aircraft Division.

In 1992 BAE closed its Hatfield facility, and 146 production was moved north to Woodford. This had the knock-on effect for the ATP, which in turn moved to Prestwick, alongside Jetstream production. While jigs and tooling were being moved over the border, some improvements were made to the airliner, including a more powerful P&W engine and increased operating weights, to allow >>

**ABOVE • Despite the ATP's lack of sales, it has found a new niche role as a freighter aircraft. West Air Sweden has 33 examples in service (and others in store), which it operates on an extensive network across Northern Europe.** AIRTEAMIMAGES.COM/TIM DE GROOT

**TOP • Having enjoyed success with the Jetstream 31/41 in the US, British Aerospace had high hopes for the ATP in the same market. However, the only sale was for ten examples to Air Wisconsin which operated the type under the United Express brand.** AIRTEAMIMAGES.COM/BOB O'BRIEN

**Sweden's largest domestic carrier, NextJet, continues to operate four ATPs on domestic passenger services.** AIRTEAMIMAGES.COM/PAUL BUCHROEDER







higher speeds, a longer range and an increase to 70 seats – six more than the original. It was re-marketed as the Jetstream 61, and the first example – the modified ATP prototype – was re-registered as G-PLXI (using the Roman numerals LXI for 61) and test flown in May 1994. However, it seemed that its declining reputation had gone before it, and airlines were showing little interest. Marketing efforts were final-

**British Aerospace only built 64 ATPs before cancelling the programme.** AIRTEAMIMAGES.COM/RUDI BOIGELOT

**In a bid to increase sales, British Aerospace remodelled the ATP with uprated engines, six more seats and a new name, the Jetstream 61.** BAE SYSTEMS

ly abandoned following the absorption of the Commercial Aircraft Division into the Airbus Industries (Regional) unit in Toulouse. Clearly the ATR had achieved greater sales and there was little point in attempting to market the ATP alongside the ATR 72. Only four J61s were completed at Prestwick, the remainder of the part-built fuselages were broken up, with just 64 ATPs being completed.

In recent years, the ATP has found a new, albeit niche, market. West Air Sweden has shown faith in the type, with no less than 33 examples in service, and a number stored. A freighter version of the ATP had never been considered at the design stage, primarily because towards the end of its life there was no customer interest in a large freight door being fitted to 748s, however, West Air decided to fit them to its aircraft with the work undertaken by Bucharest-based Romaero. These are now flying an extensive network across northern Europe as freighters. NextJet, the biggest domestic carrier in Sweden, also has four ATPs, still operated in a passenger configuration.

The ATP's lack of sales brought the reputation of BAe's civil aircraft division to a somewhat ignominious end. Previous successes in the turbo-prop market had been significant and there were constant demands for its products, which were respected worldwide, but it seemed the ATP was just a step too far, and those who were signing the cheques decided enough was enough. **W**





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# Cabin Design

## Striking a Balance

Many of the world's leading carriers are raising the seating capacity of their aircraft in a bid to maximise revenue, but what impact does this have on passenger comfort? **Dr Nicola Davies** investigates how manufacturers and airlines are turning to smart cabin design to meet the needs of the traveller and the business.

**T**he business-to-business nature of airline manufacturing can be challenging in that it must consider the delicate balance between customer satisfaction (airline) and passenger satisfaction.

"Our customers are the airlines. Our customers' customer is the passenger. We need to provide flexibility for the airlines to create the passenger experience that fits their brand and business model," Blake Emery, Director of Differentiation Strategy for Boeing Commercial Airplanes, told *Airliner World*.

The comfort and service needs of

passengers – the end users – must also be taken into account: "We test ideas with them to make sure they have an improved experience. Everything we design and integrate into our cabin is done intentionally and by design – nothing is random," Emery added.

Cabin design is ultimately a balance between the business needs of an airline and the comfort requirements of its customers. But a growing trend in the industry – the accommodation of more seats inside the aircraft – has the potential to erode passenger comfort.

It's an area that major manufacturers such as Airbus and Boeing are keen to address.

*Many legacy carriers have adopted a decidedly two-tier strategy, adding more seats into the rear of the cabin while installing increasingly comfortable and spacious offerings 'up front' for those who are willing to pay extra.*

AVIATION IMAGE NETWORK/  
BAOLUO





*Over the past decade, generating revenue for client airlines has been the overriding role: hence, one of the most significant areas of cabin development has been densification or space maximisation.*

AIRBUS

## More Seats

According to Airbus, revenue maximisation for airlines has been the most important focus for manufacturers. Speaking to *Airliner World*, Airbus' Head of Design and Brand Management, Paul Edwards, explained: "The biggest change I see within cabin design over the last decade or so starts with a change in perception. The cabin of the past was often viewed as an engineering product, whereas today it's much closer to a consumer good."

"This change was influenced by airlines which, in an increasingly competitive market, needed to differentiate their customer experience from the competition."

Over the past decade, generating revenue for client airlines has been the overriding role: hence, one of the most significant areas of cabin development has been densification or space

>>

**"The cabin of the past was often viewed as an engineering product whereas today it's much closer to a consumer good."**

Airbus' Head of Design and Brand Management, **Paul Edwards**







**Having successfully rolled out its Sky Interior on its Next-Generation 737s, Boeing now offers the product as standard on its new 737 MAX family.**  
BOEING

**Many airlines argue that space densification is necessary to keep their businesses competitive and sustainable. But more seats in the cabin reduce personal space for passengers, meaning some carriers are effectively trading comfort for profit.**  
AIRTEAMIMAGES.COM/  
SARMAD AL-KHOZAIE

**Air Canada is reconfiguring some of its Boeing 777s from a nine- to a ten-abreast layout, an increasingly common move among operators. This, the carrier said, is helping to reduce the cost per seat by 15%.**  
KEY-CRAIG WEST

maximisation.

Legacy carriers, which are generally regarded as having a more premium offering, now also provide products at fares and qualities indistinguishable from those served up by their low-cost counterparts.

Many legacy airlines have abandoned benefits such as complimentary in-flight catering and free checked baggage, particularly on their short-haul services. Instead, such services are now used as a means of generating ancillary revenue, and it's increasingly common for carriers to charge for catering, hold baggage and even seat selection.

Like their no-frills rivals, legacy carriers have also had to maximise cabin space and add more revenue-generating seats, which has led some observers to question whether they should still be considered as premium service providers.

Cathay Pacific, for example, has outlined plans to increase economy seating in its widebody aircraft by 10%, while Air Canada is reconfiguring some of its Boeing 777s from a nine- to a ten-abreast layout. These carriers are not alone – at the turn of the millennium, just 5% of the 777s being delivered by the US manufacturer featured



high-density, ten-abreast seating in Economy. Today, the figure is more than 50%.

The Canadian flag carrier said the decision to change its layout had helped reduce the cost per seat by 15%. When combined with increasing operating costs and fierce competition between airlines, seat maximisation becomes a highly viable business model to integrate.

More to the point, if rivals can

accommodate more passengers in the same aircraft type, achieving lower per unit cost and effectively earning a higher income per flight, the carrier that doesn't follow this route would be left at a disadvantage.

But there's more to space densification than the number of seats, and manufacturers are now turning their attention to other areas of the cabin. For example, smaller or repositioned lavatories and galleys, or alternative designs for overhead stowage bins, can help maximise available space inside the cabin.

## Passenger Comfort

Many airlines argue that space densification is necessary to keep their businesses competitive and sustainable. But more seats in the cabin reduce personal space for passengers, meaning carriers are effectively trading comfort for profit.

In some instances, it's seat width that's eroded – as is the case for operators moving from nine- to ten-abreast layouts in their 777s. More often it's seat pitch – and legroom – that's squeezed to make room for additional rows.

With American Airlines, for example, the addition of ten more seats in Economy led to a reduction in pitch from 30in (76.2cm) to 29in (73.7cm), putting it almost on par with ultra-low-cost rivals such as Spirit Airlines.





Boeing said passenger research heavily influenced the cabin design of the 787 Dreamliner. This included the installation of bigger overhead bins, large dimmable windows and customisable LED lighting. BOEING



One solution to mitigate passenger comfort erosion is to provide customers with more seating options. Premium Economy, for example, bridges the ever-increasing gap between Business and Economy Class products, and serves travellers who want to pay close to an Economy fare but also seek a little more space and comfort than what's offered 'down the back'. This, Airbus says, is one of fastest growing revenue areas, especially on widebody aircraft.

The addition of new seating options has been supported by smart cabin segmentation, which gives airlines greater variety and flexibility in how their aircraft are divided between various fare classes and even from one

flight to another.

At a basic level, carriers can adjust the number of Business or Premium seats to suit the traffic on a given service or route. But such technology has also enabled airlines to create needs-driven zones that don't follow the traditional approach to seat segmentation.

Some carriers, such as AirAsia and IndiGo, have incorporated a 'Quiet Zone', which is off-limits to children under the ages of ten and 12 respectively. Others offer a 'Connectivity Zone', where passengers can access in-flight Wi-Fi for an additional fee.

Increasing seat class variety is just one of the ways manufacturer are giving airlines the opportunity to cater for the different needs of their passengers. This strategy can help maximise space, generate revenue and give greater

flexibility to passengers.

Emery explained: "One important principle in space densification is that, as a passenger, you can have all the space and comfort you are willing to pay for."

Nonetheless, the introduction of these new cabin layouts can lead to problems. They can affect the time and sequence of when and how passengers will board the aircraft – potentially causing delays, confusion and customer dissatisfaction, especially for those seated in the aft section of the aircraft.

In such situations, the quality of service delivered by the airline and the level of training of its staff should become key sources for differentiation. A well-trained crew can reduce boarding delays by efficiently guiding passengers to their assigned seat and >>

The move towards cabin densification is typified by the A380plus launched by Airbus at the recent Paris Air Show. The manufacturer will utilise space created by new forward and aft staircases, revamped storage bins and a redesigned crew rest area to add a further 80 seats, while the layout will be increased to nine- and 11-abreast respectively for the upper and lower Economy cabins.

KEY-CRAIG WEST

**Many airlines argue that space densification is necessary to keep their businesses competitive and sustainable.**







*One solution to mitigate passenger comfort erosion is to provide customers with more seating options. Premium Economy, for example, bridges the ever-increasing gap between Business and Economy Class products.*

AIRBUS



*The Residence by Etihad Airways illustrates the idea that space and comfort in the cabin are available for those who wish to pay for it. The three-room suite – designed for two passengers – features a lounge, bedroom and shower area.*

AIRBUS

*Cabin design is evolving from an engineering output to a key component of the customer experience and manufacturers, such as Airbus, are working closely with customers to create bespoke offerings.*

AIRBUS

using two aircraft doors for boarding.

And to avoid confusion, customers can be informed about flight updates, check-in time details, baggage tracking and information on value-adding services offered via digital outlets. For example, carriers such as Emirates, Singapore Airlines and the Lufthansa Group have partnered with Airbus and content platform merchandiser Routehappy to support passenger flight shopping on various channels.

Emery noted: "By creating and integrating the right cabin design and features, we give airlines the tools that enable them – and especially their cabin crew – to provide the best service."

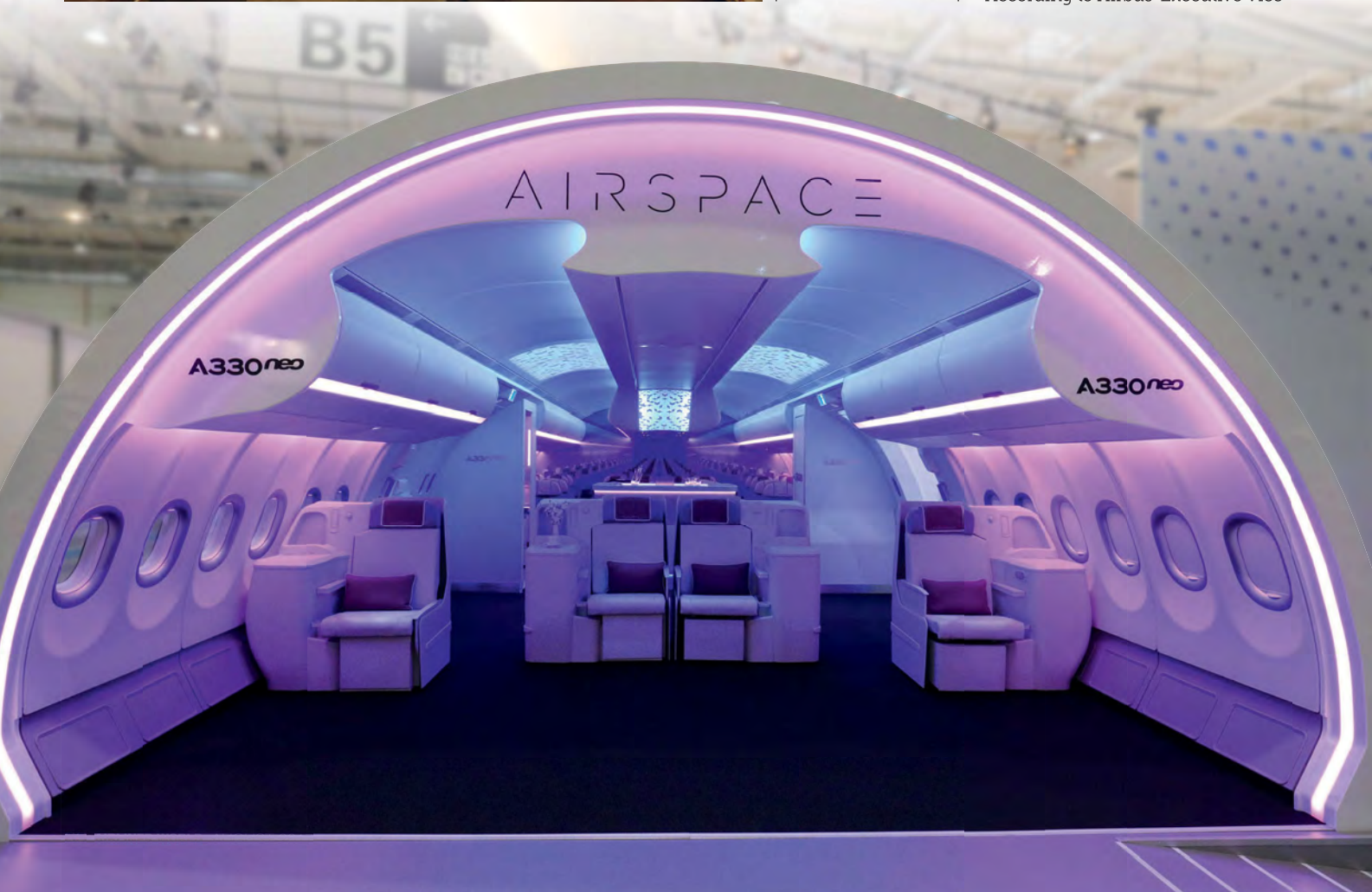
## Airspace

Cabin design is not only important in helping airlines maintain a competitive cost advantage, it also offers them an opportunity to create points of differentiation from their rivals.

Edwards said: "At Airbus we saw this change coming – the evolution of cabin design from being an engineering output to being a component of the consumer experience – and it's one of the reasons we created our Airspace cabin brand."

Airspace is built on four pillars – Comfort, Service, Ambience and Design – and uses design elements such as wider seats, larger overhead storage bins, spacious lavatories, a customisable welcome area at the main passenger boarding door and LED ambient lighting.

According to Airbus' Executive Vice

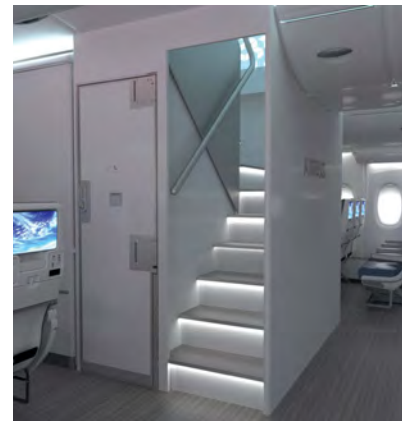






ABOVE AND ABOVE LEFT • **Airbus says its Airspace brand serves as a “blank canvas” for customers, drawing on elements such as wider seats, larger overhead storage bins, spacious lavatories, a customisable welcome area at the main passenger boarding door and LED ambient lighting.**

AIRBUS



LEFT AND RIGHT • **Part of Airbus’ strategy includes the use of “cabin enablers”, such as redesigned staircases and smaller lavatories, to free up floor space inside the aircraft.**

AIRBUS

President of Marketing and Strategy, Kiran Rao, this “adds to passengers’ enjoyment of flight, while offering a flexible canvas to which the airlines can project their own brand”.

### The Role of Cabin Design

With the need to maximise space potentially compromising the comfort of passengers, manufacturers must go beyond seating and consider other cabin design factors.

Emery observed: “It’s true that, due to basic economics, airlines have installed more seats. However, having more seats doesn’t have to mean less comfort. Space is more than just inches.

“Excellent cabin design involves efficient use of available physical space and the careful consideration of the psychological space.”

Considering the psychological space means designing a cabin that presents a sense of spaciousness and creates a welcoming environment.

“A very important element is to have the design of the seat compatible with, and complementary to, the design of the rest of the cabin,” he added. “Psychologists say this eases the amount of stress and cognitive dissonance our brains sometimes need to deal with while being in an airplane.”

Though Boeing doesn’t build or design its own seats, it collaborates closely with various suppliers that

**“Creating an environment that client airlines can work with also includes elements not seen...”**

Boeing Commercial Airplanes’  
**Blake Emery**

develop furnishings specifically tailored to the company’s aircraft configuration and cabin aesthetics.

Referring to Airbus’ Airspace, Edwards noted: “We have spacious cabins that give as much space to the passenger as possible, and specifically designed overhead stowage big enough to accommodate bags while still being as lightweight and reliable as possible.”

Besides a sense of spaciousness, manufacturers have also brought lighting and other environmental aspects to the forefront. Airbus suggests proper lighting can contribute to ambience, increase passenger comfort and reduce jetlag, especially on long-haul flights.

“Airspace makes use of state-of-the-art LED technology that can recreate millions of colours and generate superb ambience and mood – as well as having a positive effect on jet lag,” Edwards emphasised.

The European aerospace giant now installs LED cabin lighting as standard

on all current Airbus models.

Specific design elements are tools for manufacturers and airlines to create a passenger-friendly and brand-friendly environment; Boeing’s services are limited to designing the shell, with responsibility for seat installation lying elsewhere.

Emery explained: “The client airline must decide which seats to use within the environment we create. That environment should include elements that are seen, such as dynamic lighting, larger stow bins and larger windows.”

This isn’t necessarily limited to what is easily detectable to the passenger’s eye. “Creating an environment that client airlines can work with also includes elements not seen, such as cabin airflow, temperature, cabin altitude and humidity,” Emery added.

Edwards makes a similar point: “It’s not just about the things that you can see. Our engineers work hard to ensure our cabins are as quiet and relaxing as possible.

“In reality it’s how all the environmental benefits interact with each other that creates great value. For me, what brings all these elements, both seen and unseen, together is good design.”

The services available to passengers also contribute to their level of comfort and convenience. Airbus says airlines are now exploring digital business models that can generate revenue >>



*Services, such as connectivity, are playing an increasingly important role in the passenger experience and can also provide another ancillary revenue stream for carriers.*

AIRBUS

and help them respond to the growing expectation for seamless connectivity during their travel experience.

Edwards explained: "Passengers can make use of the latest in-flight technology and connectivity to work, rest or play."

According to Airbus, on-board connectivity is reaching critical mass and moving towards full broadband capability. Traditionally, connectivity has been limited to widebody types, but as the weight and costs of the technology reduce, it's becoming increasingly viable for short-haul aircraft.

Connectivity also includes power-charging capabilities, multi-device interfaces and availability of content, making it and in-flight entertainment key service differentiators that passengers value.

### ***The Models of the Future***

While a final cabin layout is ultimately dictated by a customer airline, failure to consider passenger comfort can have a hugely negative impact on the manufacturer's brand.

So new designs must be constructed with the assurance that both the flight needs of passengers and the business needs of airlines are met. The ability to balance both sides of the coin can, and will, impact on the manufacturer's brand and business.

Emery explained: "Our focus at Boeing is always on providing a differentiating cabin design that assures expression of our design vision and quality while at the same time enabling, supporting and facilitating the airline brand.

"Much of this is about taking the time to really understand the airlines' brand and mission and working with them to



help them take advantage of the features we provide."

The 787 Dreamliner, Boeing's newest widebody type, is a case in point, Emery noting: "Passenger research influenced the design of this, including features such as more intuitive bins that provide space for the items passengers carry on board these days; large dimmable windows; and lighting closely integrated with the architecture enabling multiple lighting scenes."

This approach will be further refined on the forthcoming 777X, which, Emery says, will introduce "a bold and dramatic new cabin design with enhanced bin

capacity, easier to use doors and latches and more extensive and immersive light effects – along with a host of small details that will delight passengers and crew".

Airbus too is improving the on-board experience across all classes. Under its Airspace brand, some tangible examples of the drive to increase passenger comfort are larger overhead stowage spaces, wider seats, no more bulky in-flight entertainment boxes under the seats, ambient lighting, a quiet cabin, Wi-Fi and lavatories with touchless features.

Aircraft cabin design continues to evolve and successful airlines are incorporating innovative features to ensure passenger comfort and promote a positive flight experience.

While competition among carriers is in many cases leading to narrower seats and shrinking legroom, manufacturers and airlines can work together to minimise negative impacts and create sustainable business models that promote passenger comfort in alternative and meaningful ways. **AVI**

**Besides a sense of spaciousness, manufacturers have also brought lighting and other environmental aspects to the forefront.**

*The Airbus Concept Cabin looks decidedly different from what is available today, but it illustrates what the future of flight might look like from the passengers' perspective. The manufacturer speculates that traditional partitioned classes may give way to themed zones offering relaxation, connectivity or interaction with others.*

AIRBUS





# Airliner World

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## Flight Sims

What's new  
in flight  
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# The Queen Returns

The Boeing 747-400 is the most popular variant of this iconic aircraft, with 694 examples delivered to airlines around the world.

PC Pilot's  
**Richard Benedikz**  
runs the rule over the latest product from the PMDG stable – the Boeing 747-400 Queen of the Skies II.

### At a Glance

PMDG's new flagship 747-400 Queen of the Skies II is packed with options. The depth of the systems modelling will keep experienced virtual airline pilots happy for months.

**Developer:** PMDG Simulations

**Price:** Prepar3D: \$134.99 (£108 approx.); FSX: \$89.99 (£72 approx.)

**Web:** [www.precisionmanuals.com](http://www.precisionmanuals.com)

**T**he 1960s was the first full decade of the Jet Age and the future path of commercial airliner evolution was unwritten. The British and French were pumping their resources into the joint development of the supersonic Aérospatiale/BAC Concorde, a sleek delta-wing design that would be capable of crossing the Atlantic in just three hours. The Americans adopted the 'bigger is better' mentality, focusing on economy of scale and efficiency. Pan American World Airways (Pan Am) had arguably embraced the jet age more than any other carrier of the era, with an eventual fleet of almost 130 707s and a vast network spanning five continents. By 1965 the airline was predicting 35 million people would be flying international routes, a figure that rose by 200% over the next 15 years. The need for a bigger

aircraft was obvious, and Boeing agreed. An epoch-making moment came about during a fishing trip, when Pan Am founder and President Juan T. Trippie threw down the gauntlet to Boeing President William M. 'Bill' Allen as they discussed a new supersized people mover, "If you build it, we'll buy it," to which Allen replied "If you buy it, we'll build it."

This led to the creation of the biggest civil aircraft the world had ever seen – the 747. There is little doubt the jumbo jet was, quite literally, a huge gamble – it stood six storeys high and was 225ft-long, dwarfing its rivals and stablemates in both size and expense.

Booming demand and emerging technologies saw the 747 updated through several models, the most popular of which was the -400 series. Officially launched

in 1985, the variant featured more efficient high-bypass engines, additional fuel tanks, distinctive winglets and a modern two-crew glass cockpit, which reduced the 971 knobs, dials, switches and gauges found in earlier models to a more user-friendly 365. The type was quickly adopted as the flagship of major carriers around the world, and remains in use today in passenger and freighter form.

### Queen of the Skies II

A new product release by the Precision Manual Development Group (PMDG) doesn't happen very often, so when it does, it's usually a rather significant event in the flight simulation community. Queen of the Skies II is no exception. Following on from its successful 747-400 package, first issued in 2007, this



latest product is the result of more than three years of work by the Virginia-based developer and is, according to PMDG: "our most magnificent creation yet". It draws from a plethora of coding advances introduced on PMDG's other critically acclaimed products: the 737 NGX and 777. And when it comes to the features, the company has really gone to town. The new add-on incorporates all major sub-variants of the 747-400 family, among them the basic passenger model, the high-density -400D used predominantly on domestic services in Japan, and the long-range -400ER, along with

four different varieties of freighter. Each type includes accurate weight and performance data as well as engine options covering Rolls-Royce, Pratt & Whitney and General Electric powerplants.

### Walkaround

In typical PMDG fashion, the build quality is immediately apparent with the external model recreated in stunning detail. On the trailing edge of the wings, the flap mechanism can be seen in motion as can the motors and hydraulic lines in the wheel wells. The aircraft also fea-

tures transparent windows, while objects such as pitot tubes, hatches and aerials are all visible. Even the warning labels on the fuselage are clear and readable. However, while the external model is superb, the texturing of the rear cabin is average – I don't have a problem with this personally as I prefer to see the focus placed on the cockpit, and on the aircraft's flight dynamics and systems.

### The Office

The real magic in Queen of the Skies II takes place on the flight deck. Up front, the spacious cockpit is a very accurate replica of the real thing showing signs of general wear and tear as well as finger prints and dust on displays, capturing the feel of a well-used aircraft. The captain's and first officer's Primary Flight Display and Navigational Displays operate independently and the two engine indication and crew alerting system (EICAS) screens, used to show the status of the engine and various aircraft systems, are highly detailed and functional. Similarly, the overhead panel and centre console have been faithfully replicated, including the avionics, fire test and

suppression, electrical busses, hydraulic, pressurisation, air conditioning and fuel pumps, while the Ground Proximity Warning System (GPWS), terrain and weather radar will keep you out of trouble. Note that Active Sky Next/Active Sky 2016 is required for the weather radar to work. The cockpit is further enhanced by custom lighting, which adds to the sense of immersion. In short, no detail has been spared in recreating an authentic cockpit environment.

### Setting Up

The three independent flight management computers (FMCs) have been modelled in minute detail, enabling you to enter or import flight plans and performance data. Even the processing speed of the FMCs has been replicated – computer systems on the real aircraft were fitted with 1990s-vintage technology. Consequently, when entering data, the screens take a while to update. The FMC can also be used to specify payload and fuel, while other pages make it possible to fine-tune the aircraft with various equipment options, the colours on the cockpit displays, thrust management, auxiliary fuel tanks,

## Flight Sims



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#### Aircraft variants

747-400 passenger version
747-400F (Freighter)
747-400 BCF (Boeing Converted Freighter)
747-400M (Combi)
747-400D (Domestic)
747-400ER (Extended range)
747-400ERF (Extended Range Freighter)

#### Engine options

Rolls-Royce RB211-524G
Pratt & Whitney PW4056
Pratt & Whitney PW4062
General Electric CF6-80C2B1F
General Electric CF6-80C2B5F

*Animated service vehicles bring the 747 to life.*

*The level of detail is extremely high, extending to animated flap and spoiler mechanisms and hydraulic lines on the undercarriage.*



>>





*Up front, the flight deck has been recreated in incredible detail with wear and tear indicating decades of long-haul service.*

*Signs of wear and tear on the centre pedestal capture the feel of a well-used aircraft.*

*A working weather and terrain radar is just one of the many systems that enable the 747 to operate in the most hostile of environments.*

verbal callouts and a vast selection of airline-specific customisations. Ground operations are also set from the FMC with turnaround time management, servicing, real-time refuelling and push-back. The list of features is endless, but they work flawlessly. As with the 777, PMDG has implemented time compression for long-haul flights, which constantly adapts to the processing demands of the simulator and adjusts the rate of acceleration accordingly. For instance, flying in a straight line over water, the aircraft may be pushed to 16x acceleration. If there is a change of direction or attitude, it will automatically slow down to normal speed before automatically re-accelerating.

### Safety First

Another notable feature of Queen of the Skies II is the inclusion of Runway Awareness and Advisory System (RAAS)

licensed from FS2Crew. This electronic detection system, which debuted with Alaska Airlines in 2008, monitors the aircraft's position and is aimed at reducing the risks of runway incursions and incorrect runway use, particularly during periods of low visibility. As in real-life, it generates audible callouts at critical points on the ground and on final approach, telling you which runway you're aligned with, advising if you inadvertently attempt to take-off from a taxiway, and giving a running commentary of the remaining runway length after touchdown.

### Animations

PMDG has pulled out all the stops with the model animation, particularly when it comes to ground equipment. When summoned, you can see service vehicles race up to the aircraft, including stairs, a fuel truck, ground power cart, cargo loaders and maintenance vans. You can even

call cabin cleaning, or request catering trucks to top up the galley. Vehicles take time to arrive, adding to the realism. Elsewhere, all the 747's doors and cargo hatches are animated, and freighters feature a lifting nose and a support jack as per the real aircraft.

### Special Ops

As with the 737NGX and the 777, Queen of the Skies II is shipped with the PMDG Operations Centre. This is used to install the huge selection of historic and current airline liveries, including real-world operators with verified equipment, enabling you to fly aircraft in the same configuration as the airlines.

New or updated colour schemes also automatically become available as they are released. Finally, the Operations Centre regularly checks if your installation is up to date (and gives the option to download and install any patches) as well





as providing links to a plethora of documentation.

On the latter, the package comes with official Boeing manuals (in PDF format) covering the 1,600-page FCOM (Flight Crew Operations Manual) and 550-page QRH (Quick Reference Handbook), along with a 168-page introduction to the 747-400 and a 113-page tutorial covering a virtual flight from Denver to San Francisco. Combined, the manuals provide detailed information on the inner workings of the 747 as well as an in-depth description on how to operate the aircraft. The documentation is superb, albeit slightly overwhelming, requiring months of hard study if one is to truly master the 747.

## Flight Test

Overall, PMDG has done a superb job in reproducing the characteristics of the 747. The area that surprised me the most was how differently the aircraft handles at different weights. While the jet has a lot of reserve power, thanks to its four massive turbofans, it can also carry a huge payload. When lightly loaded, it climbs like a homesick angel and can easily reach 45,000ft, but at high gross weights it feels more like a beached whale, needing a lot of runway to get airborne and struggling to get much

above FL300.

Taxiing the 747 also takes some getting used to. The cockpit sits 30ft above the ground and well ahead of the nosewheel, so it can be difficult to gauge your speed accurately. It's also easy to inadvertently run a main gear bogey off the taxiway! The unusual perspective can make landings a little tricky so it's best to get some practice in before loading your 747 up with virtual passengers. The jumbo jet's vast size means it is stable during the approach phase with only small pitch changes as the flaps and gear come down, but if you are flying manually, keeping the speed under control is important to ensure a smooth touchdown.

The look and feel of the package is further enhanced by a custom sound set. No individual switch sounds the same and everything, from the auxiliary power unit (APU) coming online, to the engines or air conditioning packs spinning to life, all add to the experience. On the ground, you can hear the undercarriage rumble and, when flying through turbulence, the airframe rattles and creaks. The roar of the engines is simply divine, especially at high power, while each type has a markedly different sound.

## Performance

Overall, frame rates are very good. On a mid-range system, I achieved around 30 frames per second (fps) at detailed

airports, and around 50fps in the cruise (at sensible detail settings). As for Virtual Address Space (VAS) usage, I did initially run out of memory. The aircraft uses around 1GB of VAS, which is understandable given it's a very complex piece of software. This is increasingly becoming an issue when using high-fidelity aircraft in combination with detailed scenery and there is no solution except to reduce memory usage. We have been sailing very close to the 32-bit limit and while developers have gone to extreme lengths to optimise their products, we have simply come to the limits of what is possible with the 4GB of addressable memory, particularly for Microsoft FSX. Prepar3D is slightly better when it comes to memory management but it is not infallible. With a bit of tweaking I could reduce memory usage significantly so it is possible to use Queen of the Skies II without too much compromise elsewhere. Notably, this package is now compatible with the recently released 64-bit Prepar3D v4, which all but eliminates the out-of-memory problem.

## Summary

When it comes to high-fidelity jetliners, PMDG is 'Queen'. The company does make us wait, but when new aircraft are eventually released, the quality is superb and the bar is consistently raised with each product. In my opinion, PMDG has taken this up another level again with the 747-400 Queen of the Skies II. However, it is not cheap: the FSX version retails at \$89.99 increasing to \$134.99 for Prepar3D. Though this is at the top end of the scale, it is in line with the earlier 777. And you get a lot more for your money with the 747. In terms of completeness and features, I believe this is the best package PMDG has released so far. Visually, the aircraft is stunning, the flight model feels right and the light deck is outstanding. In short, PMDG has created a truly authentic study level simulation.

*PMDG has included all major 747-400 variants including passenger and cargo models. The -400F freighter also features an animated nose door as per the real aircraft.*

### System Requirements

**Platform:** FSX/FSX: Steam Edition or Prepar3D v4

**Processor:** Dual Core, 2.5GHz or faster

**RAM:** 4GB, Graphics: 1GB of VRAM, DirectX 9 compatible Nvidia or ATI card. Onboard motherboard or CPU video is not supported

**OS:** Windows 7 64-bit

### Recommended

**Processor:** Quad Core, 3.0 GHz or faster

**RAM:** 8GB of RAM or higher Graphics: DirectX 11-capable video card with at least 4GB of memory

**Operating System:** Windows 10 64-bit

*Northwest Airlines was the launch customer for the 747-400 and took delivery of its first example on February 9, 1988.*





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# Airliner Deliveries

The latest commercial aircraft deliveries from manufacturers and lessors.

*Saudia continues to grow its Boeing 787-9 Dreamliner fleet with HZ-ARF (c/n 41549), the seventh example to join the carrier.*

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## Shaheen Air International [NL/SAI]

AP-BKL	A330-301	55	ret to AerCap after lease & st TrueAero for parting out
AP-BNL	A319-132	2631	ex TC-JLO, dd 29.04.17, lsd fr AerCap

## REALtonga [RLT]

A3-SKY	Jetstream 3201	974	ret IAP Group after lease, rr VH-ACV to IAP Group Australia 11.05.17
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## Oman Air [WY/OMA]

A40-SD	787-9	38892	ex N9672M, dd 20.04.17, lsd fr CIT Aerospace, Charleston # 171
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## Emirates [EK/UA]

A6-EBD	777-31HER	33501	lrf 25.03.17, std Dubai DXB, all white no titles
A6-EMN	777-31H	29063	lrf 19.02.17, ferried Dubai DXB – Dubai DWC 21.02.17 for storage
A6-EMX	777-31H	32702	lrf 15.02.17, ferried Dubai DXB – Dubai DWC 03.03.17 for storage

## flydubai [FZ/FDB 'Sky Dubai']

A6-FDH	737-8KN	31716	ferried Dubai – Norwich 05.04.17, ret to Babcock & Brown 05.17 after lease
A6-FDI	737-8KN	31765	as A6-FDH
A6-FGJ	737-800(8KN)	60963	dd 12.04.17

## Qatar Airways [QR/QTR 'Qatari']

A7-AMC	A350-941	48	ex PR-XTE, dd 24.04.17, lsd fr LATAM Airlines Brasil
A7-AMD	A350-941	45	corrects reg'n
A7-APJ	A380-861	237	st AA4P Kappa on delivery & lsd back

## Air China [CA/CCA]

B-1416	737-800(89L)	43423	ex N1796B, dd 24.04.17, lsd fr GECAS
B-2063	777-2J6	29156	lrf 30.12.16, ferried Beijing – Marana 20-21.04.17 for storage
B-8689	A330-343E	1786	ex F-WWYV, dd 28.04.17
B-8743	A320-232	7442	ex B-000M, corrects reg'n
B-8745	A320-232	7497	ex B-000G, dd 14.04.17

## Air Guilan [GT/CGH 'Welkin']

B-8663	A320-232	7356	ex D-AAAP, dd 25.04.17 Singapore XSP – Guilan, lsd fr BOC Aviation
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## Chengdu Airlines [EU/UEA 'United Eagle']

B-8610	A320-214	7314	ferried Tianjin – Chengdu 12.04.17 for eis, was dd 15.12.16
B-8877	A320-214	7485	ex B-000C, dd 11.04.17

## China Eastern Airlines [MU/CES]

B-5083	737-89P	30691	lrf 06.02.17, ret to AerCap after lease, rr 2-TBXR
B-7868	777-300ER(39P)	43283	dd 27.04.17
B-8562	A321-211	7628	ex D-AVYB, dd 11.04.17
B-8566	A320-214	7633	ex F-WWVU, dd 25.04.17, lsd fr BOC Aviation
B-8975	A320-214	7654	ex D-AUBX, dd 12.04.17
B-8978	A321-211	7641	ex D-AVYF, dd 21.04.17

## China Express Airlines [G5/HXA 'China Express']

B-3231	CRJ900LR	15419	ex G-GZSQ, dd 18.04.17
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## China Postal Airlines [CF/CYZ 'China Posta']

B-2823	757-21B	25888	cnvrt'd to 757-21B(F) 05.17 by Ameco at Chengdu
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## China Southern Airlines [CZ/CSN]

B-1582	737-81B	63237	ex N1798B, dd 26.04.17
B-1585	737-81B	63242	dd 26.04.17

## China United Airlines [KN/CUA 'Lianhang']

B-1425	737-800(89P)	61686	dd 05.04.17, lsd fr China Eastern Airlines
B-1426	737-800(89P)	61696	dd 12.04.17, lsd fr China Eastern Airlines

## Chongqing Airlines

B-6761	A320-232	4696	ex F-WWDM, reg'd 12.04.17
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## Fuzhou Airlines [FU/FZA 'Strait Air']

B-1435	737-8EH	40739	ex N653BC, dd 16.05.17, lsd fr GECAS
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## GX Airlines (Guangxi Beibu Gulf Airlines) [GX/CBG 'Green City']

B-8388	A320-214	4970	ex B-LPB, dd 01.05.17 Guangzhou – Tianjin
B-5062	737-76N	28585	ferried Haikou – Greenwood 19-20.04.17 & pwfu
B-6089	A330-243	919	ret fr Tianjin Airlines lease
B-7379	737-800(84P)	44391	dd 25.04.17
B-7398	737-800(86N)	60702	ex N1786B, dd 13.04.17, lsd fr GECAS

## Joy Air [JR/JOY]

B-5002	Xian Y7-MA60	1202	dd 01.04.17
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## Loong Air (Zhejiang Loong Airlines) [GJ/CDC 'Loong Air']

B-8983	A320-214	7542	ex B-000V, st CDB Aviation Lease Finance on delivery & lsd back
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## SF Airlines [O3/CSS 'Shun Feng']

B-1432	757-21K(F)	28674	ex N553CC, reg'd 10.04.17, ferried Xiamen – Shenzhen 16.04.17
B-1463	757-220	27260	ex N574BC, reg'd 10.04.17, not yet cnvrt'd to frt

## Shandong Airlines [SC/CDG 'Shandong']

B-7808	737-800(85N)	60163	dd 07.04.17, lsd fr CDB Financial Leasing
B-7809	737-800(85N)	61432	dd 26.04.17

## Sichuan Airlines [3U/CSC 'Sichuan']

B-8962	A330-243	1780	ex F-WWCJ, dd 19.04.17
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## Tianjin Airlines [GS/GCR 'China Dragon']

B-3238	E190-200LR	19000727	ex PR-EYS, dd 21.04.17
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## Tibet Airlines [TV/TBA 'Tibet']

B-8842	A320-214	7361	ferried Tianjin – Chengdu 26.04.17 for entry into service, dd 29.12.16
B-8843	A320-214	7527	ex B-000J, dd 20.04.17
B-8951	A330-243	1785	ex F-WWKG, dd 28.04.17

## Xiamen Airlines [MF/CXA 'Xiamen Air']

B-7838	787-9	63322	ex N8290V, dd 03.04.17, Charleston # 168
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## China Airlines [CI/CAL 'Dynasty']

B-18606	737-809	28405	lrf 28.02.17, N262MA is assigned
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## EVA Air [BR/EVA]

B-16410	747-45E	29061	ferried Taipei TPE – San Bernardino 24.04.17 & pwfu
B-16737	777-300ER(3AL)	61770	ex N55061, dd 27.04.17, lsd fr BOC Aviation

## Advantage Helicopters

C-FADV	Bell 204B	2016	st Eclipse Helicopters
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## Air Canada rouge [RV/ROU 'Rouge']

C-GBZR	767-38EER	25404	dd 31.03.17, lsd fr AerCap & reg'd 19.05.17
C-GSCA	767-375ER	25121	lsd fr Avolon, entered service 12.05.17

## Air Transat [TS/TSC]

C-GUBD	A330-243	536	ex F-WTBF, reg'd 12.05.17, lsd fr DAE Capital
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## Alberta Central Airways

C-GACA	Beech B200	BB-1309	st Ashe Aircraft Enterprises & reg'd 05.05.17
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## Blue Water Aviation

C-FDPW	DHC-2 Mk.I	1339	st MHA Enterprises & reg'd 19.05.17
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## Cargojet Airways [W8/CJT]

C-GCJT	757-223	24605	cnvrt'd to 757-223(F) at Cecil Field, ferried Cecil Field – Hamilton 04.05.17
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## Eclipse Helicopters

C-FADV	Bell 204B	2016	ex N73280, reg'd 01.05.17
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## Great Slave Helicopters

C-GJKN	Bell 205A-1	30091	reg'n canx 25.05.17, exported to USA
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## Guardian Helicopters

C-GKCK	Bell 412EP	36090	ex JA6750, reg'd 15.05.17
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## Island Express Air

C-FSWN	Pa.31-350	31-7952182	ex C-GREP, reg'd 04.05.17
C-GIAE	Beech B100	BE-8	ex (N45LU), reg'd 08.05.17

## Jazz Aviation (Air Canada Express) [JQ/JZA 'Jazz']

C-FSRY	DHC-8 402	4174	reg'd 09.05.17
C-FSRZ	DHC-8 402	4176	reg'd 26.05.17

## Kenn Borek Air [4K/KBA 'Borek Air']

C-GKBQ	DHC-6 300	447	ex 8Q-IAF, reg'd 18.05.17
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## Morningstar Air Express [MAL 'Morningstar']

C-FEXN	Cessna 208B	208B0038	ex N938FE, reg'd 25.05.17
C-	Cessna 208B	208B0056	ex N950FE

## North Star Air

C-FKAL	DC-3C Turbo	28285	ex N8187E, reg'd 03.05.17
C-GKKB	DC-3C Turbo	20494	ex N1427, reg'd 03.05.17

## Northway Aviation [NAL]

C-GNWZ	PC-12/45E	1067	ex N138JR, reg'd 05.05.17
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## Perimeter Aviation [PAG]

C-GPAL	DHC-8 102	157	ex N824PH, dd 02.03.17 & reg'd 09.05.17
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## Plumridge Air

C-FLPL	DHC-2 Mk.I	1313	ex CF-LPL, reg'd 08.05.17
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## Portland Creek Aviation

C-FMPR	DHC-2 Mk.I	971	ex CF-MPR, reg'd 15.05.17, bf Aviation Seapass
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## R1 Airlines [TSH]

C-FIDL	DHC-8 314	305	ex V2-LFW, reg'd 11.05.17, lsd fr Avmax Aircraft Leasing
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## Sky Regional Airlines (Air Canada Express) [RS/SKV]

C-FROK	E170-200LR	17000126	cnvrt'd to E170-200SU & reg'd 20.04.17
C-FROM	E170-200LR	17000137	ferried Porto Alegre – Trois Rivières 05-06.05.17 for painting
C-FRON	E170-200LR	17000147	cnvrt'd to E170-200SU & reg'd 04.04.17
C-FRQW	E170-200LR	17000154	ex SP-LIF, reg'd 28.04.17, lsd fr GECAS, ferried Warsaw – Trois Rivières 06-07.05.17 for painting

## Summit Air Charters

C-FPSA	Do.228-202	8122	ex D-CLUU, reg'd 25.05.17, was canx 24.06.14
C-FPSH	Do.228-201	8071	ferried Iqaluit – Brize Norton 19-20.05.17 for use by RAF Falcons parachute team

## Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	colours
cn	manufacturer's construction/serial number
cnvrt'd	converted
dbf	destroyed by fire
dbf	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	sold to
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed





We welcome any feedback on this listing.

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

## Summit Helicopters

C-GKWT	S-76A++	760295	reg'n canx 04.05.17, exported to South Korea
<b>Voyageur Airways [VC/VAL]</b>			
C-FABA	DHC-8 102	92	reg'd 18.05.17, bf Jazz Aviation (reg'n was canx 23.02.17)

## Wabusk Air

C-GJUT	Beech 200	BB-828	ex N62GA, reg'd 04.05.17
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## Wasaya Airways [WSG 'Wasaya']

C-GANF	DHC-8 102(F)	42	dd 11.05.17
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## WestJet Encore [WR/WEN 'Encore']

C-GENV	DHC-8 402	4553	dd 21.04.17
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## BoA – Boliviana de Aviación [OB/BOV]

CP-2852	CRJ200LR	7545	ex N545AV, dd 11.02.16
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CP-3077	737-36N	28563	ex N836CC, dd 12.04.17 Tucson – Cochabamba
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## EcoJet [BJ/ECO]

CP-3082	BAe Avro RJ85	E2292	ex G-CHDT, dd 26.10.17 ex-Cranfield
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## Hi Fly Transportes Aéreos [5K/HFY]

CS-TFZ	A330-243	1008	ferried Cambridge – Brussels 29.04.17 after painting into SriLankan cls
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## Omni Aviation [OAV]

CS-TMU	Beech 1900D	UE-335	ferried Cascais – Yangon 21-23.03.15, st Myanmar Air Force
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CS-TMC	Beech 1900D	UE-341	ferried Cascais – Yangon 19-21.03.15, st Myanmar Air Force
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## Portugália (TAP Express) [NI/PGA]

CS-TTZ	ERJ190-200AR	19000628	ex PR-AXV, dd 04.17, lsd fr Azul, updates last month's section
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## TAP Portugal [TP/TAP]

CS-TJH	A321-212	2270	ex EC-JNI, dd 04.05.17, named 'Manuel de Oliveira'
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CS-TOT	A330-243	372	lrf 05.05.17, ferried Lisbon – Belo Horizonte CNF 15.05.17 for ret to Azul
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CS-TOV	A330-343E	1006	ex 9V-STE, dd 22.05.17 all white, lsd fr Aircastle, to be painted into retro cls
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## Nauru Airlines [ON/RON 'Oscar November']

VH-NLK	737-33A	23635	reg'n canx 25.05.17, see last month's section
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## airberlin [AB/BER]

D-ABDW	A320-214	3945	BOC Aviation st Sky Aviation Leasing lnt! 05.17 & lsd back to airberlin
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D-ABHM	A320-214	4594	ex OE-LEH, dd 09.05.17, lsd fr GECAS
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D-ABHN	A320-214	4368	ferried Düsseldorf – Hamburg 08.05.17, lsd to/op for Eurowings
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D-ABXE	A330-223	968	ferried Abu Dhabi – Berlin SXF 16.05.17 prior to eis
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HB-IOQ	A320-214	3422	ex D-ABDT, dd 14.05.17 Zürich – Munich, lsd fr AerCap
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I-ADLW	ATR 72-212A	707	ex F-WWEG, dd 12.04.17 Ancona – Düsseldorf, lsd fr Mistral Air
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## Condor [DE/CFG]

LY-VEE	A321-212	827	ex F-WTDW, dd 11.05.17 Madrid – Stuttgart, lsd fr Avion Express
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## Germanwings [9U/GWI]

D-AGWP	A319-132	4227	lrf 27.05.17, ferried Cologne – Norwich 28.05.17 for painting into Eurowings cls
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## Lufthansa [LH/DLH]

D-AIUZ	A320-214	7625	ex D-AUBS, dd 10.04.17
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## Lufthansa CityLine [CL/CLH 'Hansa Line']

D-AEBH	E190-200LR	19000447	lrf 31.03.17, ret to Lufthansa after lease
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## SunExpress Deutschland

D-ASXU	737-8FH	29671	ex TC-SNI, dd 05.17, lsd fr SMBC Aviation Capital
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## TUIfly.com [X3/TUI]

D-ATYC	737-8K5	37259	ex SE-RFU, dd 16.05.17, lsd fr SMBC Aviation Capital
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## Aeronova (Air Europa Express) [X5/OVA]

EC-KRJ	E190-200LR	19000196	ex PT-SGE, lsd fr GOAL
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EC-KXD	E190-200LR	19000244	ex PT-SIP, lsd fr GOAL
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EC-KYO	E190-200LR	19000276	ex PT-TLQ, lsd fr GOAL
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EC-KYP	E190-200LR	19000281	ex PT-TLV, lsd fr GOAL
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EC-LCQ	E190-200LR	19000303	ex PT-TZR, lsd fr Nordic Aviation Capital
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EC-LEK	E190-200LR	19000344	ex PT-XQG, lsd fr Nordic Aviation Capital
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EC-LIN	E190-200LR	19000401	ex PT-XUG, lsd fr Nordic Aviation Capital
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EC-LKX	E190-200LR	19000437	ex PT-TCX, lsd fr Nordic Aviation Capital
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EC-LLR	E190-200LR	19000452	ex PT-TCW, lsd fr Nordic Aviation Capital
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## AlbaStar [AP/LAV]

EI-GAT	737-86J	32920	ex TC-TJL, dd 28.04.17 Istanbul SAW – Palma, lsd fr Apollo Aviation
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EI-IAS	737-8K5	27992	ex VQ-BJC, dd 05.05.17 Shannon – Palma, lsd fr AS Air Lease
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## Iberia [IB/IBE]

EC-MOU	A330-202	1777	ferried Madrid – Manchester 07.05.17 for painting into LEVEL colours
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EC-MOY	A330-202	1784	ex F-WWYV, dd 28.04.17, op for LEVEL
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## Volotea [V7/VOE]

EI-FXN	A319-111	1684	ex N906FR, dd 12.05.17 Ostrava – Nantes, lsd fr GECAS, named 'Rock & Vol'
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EI-FXP	A319-111	2258	ex N932FR, dd 16.05.17 Ostrava – Nantes, lsd fr GECAS, named 'Cielito Lindo'
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9H-AHA	737-505	24647	ex N647EL, dd 24.05.17 Bournemouth – Nantes, lsd fr Air X Charter
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9H-OME	737-505	24274	ex N274EL, dd 14.05.17 Bournemouth – Nantes, lsd fr Air X Charter
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## Vueling [VY/VLG]

EC-MQE	A320-232	7585	ex F-WWDO, dd 30.03.17, lsd fr BOC Aviation
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EC-MQL	A321-231	7621	ex D-AVZP, dd 24.04.17, named 'Klaus' Angels'
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## Aer Lingus [EI/EIN 'Shamrock']

EI-EZW	A320-214	1983	ferried Dublin – Prague 19.05.17 after painting into Brussels Airlines cls
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EI-GAL	A320-214	3789	ex VQ-BAZ, dd 05.05.17 Ostrava – Dublin, lsd fr GECAS
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## ASL Airlines Ireland [ABR 'Contract']

EI-HAA	737-4Y0(F)	25177	ex N760SL, dd 25.05.17 & reg'd 26.05.17 to ASL Aircraft Investment (No 2)
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EI-STL	737-42C(F)	24231	ex OY-JTL, reg'd 12.05.17 to ASL Airlines (Ireland), lsd fr Kahala Aviation Leasing
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## CityJet [WX/BCY 'City Ireland']

EI-FWE	RRJ-95B	95117	ex I-PDWW, reg'd 05.05.17, lsd to Brussels Airlines
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LY-ARI	ATR 42-300	012A	ex SX-GRY, dd 09.04.17 Billund – Antwerp, lsd fr DOT LT
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## Norwegian Air International [D8/IBK 'Nortrans']

EI-PVO	737-800(8JP)	42278	dd 06.04.17, tail motif 'Anders Celsius – Swedish astronomer'
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EI-FVP	737-800(8JP)	42086	dd 20.04.17, tail motif 'Santiago Ramón y Cajal – Spanish scientist'
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## Ryanair [FR/RYR]

EI-FZI	737-800(8AS)	44782	ex N1786B, dd 18.04.17
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EI-FZJ	737-800(8AS)	44788	dd 12.04.17
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EI-FZK	737-800(8AS)	44783	ex N1786B, dd 19.04.17
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EI-FZL	737-800(8AS)	44784	dd 20.04.17
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EI-FZM	737-800(8AS)	44785	dd 21.04.17
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EI-FZN	737-800(8AS)	44786	dd 25.04.17
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EI-FZO	737-800(8AS)	44787	dd 27.04.17
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## Iran Air [IR/IRA]

EP-ITA	ATR 72-600	1386	ex F-WWEX, dd 16.05.17
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EP-ITB	ATR 72-600	1389	ex F-WWEC, dd 16.05.17
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EP-ITC	ATR 72-600	1390	ex F-WWED, dd 16.05.17
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EP-ITD	ATR 72-600	1391	ex F-WWEE, dd 16.05.17
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## Iran Aseman Airlines [EP/IRC 'Aseman']

EP-ZAR	A320-231	476	rr EP-API 04.17
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## Zagros Airlines [ZV/IZG 'Zagros']

UR-CPY	A321-231	1977	rr EP-ZGA 04.17
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UR-CQB	A321-231	2055	rr EP-ZGB 04.17
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## Aerotrans Cargo [F5/ATG 'Moldcargo']

ER-BBJ	747-412F	26558	ex 9V-SFG, dd 04.17, lsd fr Avolon
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## Air Moldova [9U/MLD]

ER-AXM	A319-112	1786	ex EI-GAS, dd 20.05.17 Montpellier – Chisinau, lsd fr Apollo Aviation
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## Fly One [5F/FIA 'Fia Airlines']

UR-CII	A320-212	466	ex 2-SRCB, dd 01.05.17, lsd fr Dart Airlines
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## Ethiopian Airlines [ET/ETH]

ET-ATH	787-8	38475	ex N1020L, corrects reg'n
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ET-AUA	A350-941	103	ex F-WZFD, dd 28.04.17, st Ping An Aircraft Leasing on delivery & lsd back, named 'Simien Fox'
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## Eritrean Airlines [B8/ERT 'Eritrean']

SU-KHM	737-5C9	26438	ex JY-JAL, dd 18.04.17, lsd fr/op by Alexandria Airlines
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## Air France [AF/AFR]

F-HRBB	787-9	42495	ex N8572C, dd 18.04.17, st DIA Marianne & lsd back to Air France, Charleston # 170
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## Hop! [A5/HOP 'Airlinair']

F-GRZD	CRJ.701	10016	ferried Morlaix – Ljubljana 26.09.16 for storage, reg'n canx 10.10.16, exported to US, seen still parked at Ljubljana 20.05.17
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F-HOPA	ATR 72-600	1042	ex OE-LID, reg'd 12.05.17 to AS Air Lease XXVII (Ireland)
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## Air Caraïbes [TX/FWI 'French West']

Croatia Airlines has leased a pair of Air Nostrum Bombardier CRJ-1000s for the summer season, including EC-MLO (c/n 19050). The aircraft wear 'Croatia' titles on the forward fuselage.

PEDRO BAPTISTA

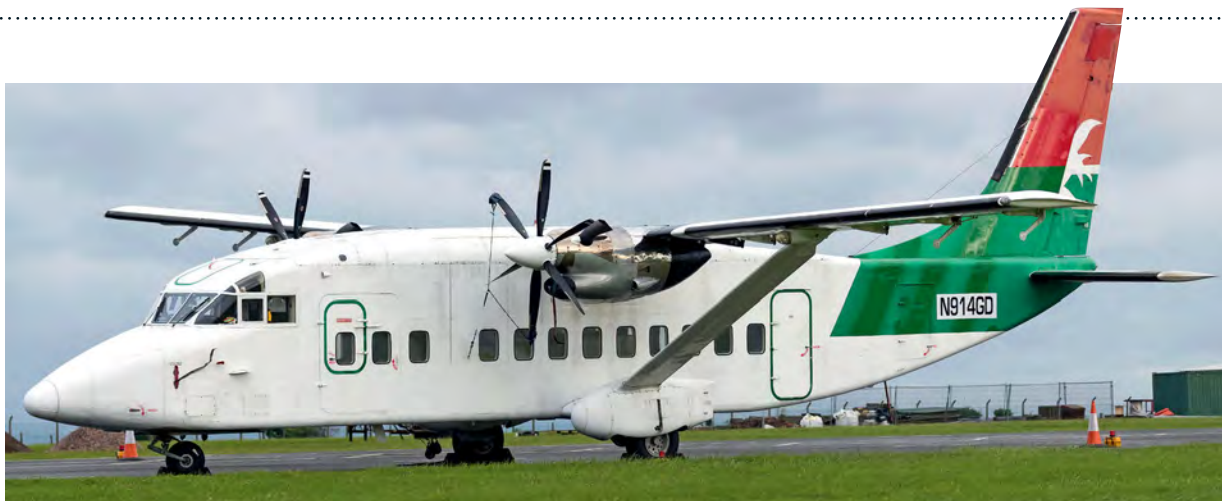






**Former Air Seychelles Shorts 360 N914GD (c/n SH3724, ex S7-PRI) passed through Cardiff en route to its new owner, Air Flamenco.**

PHIL WOODS



F-OGES	DHC-6 300	254	reg'n canx 22.11.16, was w/o 24.03.01
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<b>Tahiti Air Charter</b>			
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F-O	Cessna 208	20800591	ex N591FP, dd 09.05.17
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<b>Atlantic Airlines [NPT 'Neptune']</b>			
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G-JMCS	737-4Y0(F)	24903	ex OY-JTK, reg'd 17.05.17, ret fr Jet time lease, lsd fr Vx Capital Partners
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<b>Aurigny Air Services [GR/AUR 'Aylene']</b>			
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G-RLON	BN2A Mk.III	1008	lrf 28.02.17, to be displayed at Solent Sky Museum
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<b>bmi regional [BM/BMR 'Kittiwake']</b>			
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G-CKAF	ERJ 145LU	145047	ex F-GRGE, reg'd 25.05.17
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<b>CHC Scotia [GCY 'Helibird']</b>			
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G-OAGE	EC-225LP	2949	ret to lessor after lease & reg'd to Wilmington Trust SP Services (Dublin) 09.03.17
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<b>easyJet Airline [U2/EZY 'easy']</b>			
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G-EZRB	A320-214	7637	ex D-AUBT, dd 18.04.17
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G-EZRC	A320-214	7637	ex D-AUBU, dd 03.04.17
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G-EZRD	A320-214	7660	ex D-AUBY, dd 28.04.17
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YL-LCU	A320-214	1762	ex HB-LX, dd 11.05.17, lsd fr SmartLynx Airlines
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<b>Flybe [BE/BEE 'Jersey']</b>			
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G-PRPO	DHC-8 402	4214	ex N214WQ, reg'd 12.05.17, lsd fr Nordic Aviation Capital
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<b>Jet2.com [LS/EXS 'Channex']</b>			
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EC-IDT	737-85P	30281	dd 29.04.17, lsd fr Air Europa,
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G-JZHY	737-800(8MG)	63155	dd 18.04.17, named 'Jet2 Malta'
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G-JZHZ	737-800(8MG)	63156	ex N1786B, dd 28.04.17
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G-VYGL	A330-243	1555	ex ZZ341, dd 16.05.17, lsd fr AirTanker
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<b>JOTA Aviation [ENZ 'Enzo']</b>			
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G-JOTS	BAe Avro RJ100	E3355	ex OO-DWJ, dd 29.03.17, lsd fr Falko Regional Aircraft
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<b>Loganair [LC/LOG]</b>			
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LY-DAT	ATR 42-500	445	ex F-WKVF, dd 09.04.14, lsd fr DOT LT
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<b>Monarch Airlines [ZB/MON]</b>			
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G-ZBAV	737-82R	40874	ex TC-AAY, reg'd 18.05.17, lsd fr Pegasus
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<b>Thomas Cook Airlines [MT/TCX]</b>			
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D-ABOI	757-330	29018	ex N1002R, dd 01.05.17, lsd fr Condor
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G-VYGM	A330-243	1601	ex EC-332, dd 28.04.17, lsd fr AirTanker
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LY-VEH	A321-231	1366	ex 2-ATCD, dd 01.05.17, lsd fr Avion Express
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YL-LCQ	A321-231	2211	ex SE-RDN, dd 30.04.17, lsd fr SmartLynx Airlines
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<b>Thomson Airways [BY/TOM]</b>			
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C-FEAK	737-86Q	30292	ex N292AG, dd 18.05.17, lsd fr Sunwing Airlines
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C-FFPH	737-81D	39440	dd 01.05.17, lsd fr Sunwing Airlines
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C-FWGH	737-86J	37752	ex D-ABMC, dd 28.04.17, lsd fr Sunwing Airlines
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G-FDZD	737-8K5	35132	ex C-FTZD, ret fr Sunwing Airlines lease
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G-FDZF	737-8K5	35138	ex C-FEZF, ret fr Sunwing Airlines lease, reg'd 03.05.17
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G-TAWK	737-8K5	37239	ex C-FQWK, ret fr Sunwing Airlines lease, reg'd 03.05.17
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<b>Virgin Atlantic Airways [VS/VIR]</b>			
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G-VWIN	A340-642	736	ferried Lourdes – Heathrow 23.05.17 for return to service after temp storage
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<b>Wizz Air [W6/WZZ]</b>			
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HA-LXQ	A321-231	7623	ex D-AVYA, dd 07.04.17
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<b>Belair [4T/BHP]</b>			
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HB-JOV	A321-211	6629	ex D-ABCP, dd 11.05.17, lsd fr BoCom Leasing
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HB-JOX	A321-211	6639	ex D-ABCO, reg'd 02.05.17 to Avolon Aerospace Leasing
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<b>Swiss European Air Lines [LX/SWU 'Euro Swiss']</b>			
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HB-IYQ	BAe Avro RJ100	E3384	lrf 30.04.17, ret to Falko Regional Aircraft after lease
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<b>Swiss International Air Lines [LX/SWR]</b>			
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HB-JMM	A340-313	154	lrf 01.05.17, ferried Zürich – St Athan 08.05.17 & pwfu
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<b>Sky High Aviation Services</b>			
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HI1017	Beech 1900D	UE-137	ex N81533, reg'd 18.04.17 (N81533 is still on US Register, not canx)
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<b>Aerosucre Colombia</b>			
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HK-5216	727-227(F)	21996	ex CX-CLB, reg'd 22.02.17
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<b>Colcharter</b>			
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N133BB	SA226-AT	AT-032	reg'n canx 19.05.17, rr HK-5226
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N582JF	SA226-AT	AT-027	reg'n canx 19.05.17, rr HK-5225
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<b>EasyFly [VE/EFY]</b>			
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HK-5219	ATR 42-500	561	ex XA-TKJ, lsd fr Nordic Aviation Capital
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<b>Pacifica de Aviación</b>			
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HK-4895	Let 410UVP-E	892343	ex YV2144, reg'd 25.04.17
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<b>Transcarga International Airways</b>			
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HK-4972	Cessna 402B	402B1234	ex YV-276T, reg'd 17.06.16
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<b>Asiana Airlines [OZ/AAR]</b>			
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HL8078	A350-941	94	ex F-WZNY, dd 24.04.17, st SMBC Aviation Capital & lsd back
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<b>Jeju Air [7C/JJA]</b>			
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HL8089	737-8AS	37543	reg'd 21.04.17
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<b>Korean Air [KE/KAL]</b>			
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HL7642	747-8(8B5)	60409	ex N5513H, dd 27.04.17 & reg'd same day
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HL8082	787-9	34811	dd 25.04.17
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<b>uSky Air [URI 'Uri Air']</b>			
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HL8040	CRJ200ER	7572	reg'n canx 25.04.17, ret to Avmax Aircraft Leasing after lease, rr C-FURC 02.05.17
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<b>Air Panama [7P/PST 'Turismo Regional']</b>			
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HP-1921	Fokker 50	20135	ex OO-VLM, dd 01.17
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<b>Uniworld Air Cargo [U7/UCG 'Uniworld']</b>			
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HP-1813UCG	DC-9 33F	47384	st Frontera Flight Holdings & rr N33CJ 23.05.17
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<b>Bangkok Airways [PG/BKP]</b>			
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HS-PZH	ATR 72-600	1377	ex F-WWEN, dd 08.04.17
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HS-PZJ	ATR 72-600	1392	ex F-WWEE, dd 13.04.17
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<b>Thai Airways International [TG/THA]</b>			
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HS-THD	A350-941	95	ex F-WZNZ, dd 21.04.17, named 'Uthumphon Phisai'
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<b>Saudia – Saudi Arabian Airlines [SV/SAV]</b>			
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HZ-AK42	777-300ER(368)	62762	dd 26.04.17
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HZ-AQ24	A330-343E	1781	ex F-WWYC, dd 27.04.17, lsd fr International Airfinance Corp
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HZ-ARF	787-9	41549	ex N1791B, dd 06.04.17
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<b>Mistral Air [M4/MSA 'Mistral Wings']</b>			
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OY-YAE	ATR 72-212A	705	lrf 09.04.17, lsd to airberlin 12.04.15.05.17
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<b>ANA – All Nippon Airways [NH/ANA]</b>			
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JA891A	787-9	40751	ex N1015B, dd 17.04.17
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JA8304	A320-211	531	lrf 28.04.17, ferried Tokyo HND – Victorville 10-11.05.17 & pwfu
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JA8609	A320-211	501	lrf 02.04.17, ferried Tokyo HND – Victorville 12-13.04.17 & pwfu
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<b>ANA Wings [EH/AXX 'Alfa Wing']</b>			
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JA8195	737-54K	27433	lrf 09.05.17, st Unical Aviation 25.05.17 & rr N679UA, pwfu
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<b>First Flying</b>			
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JA201D	DHC-6 400	915	ret to Viking Air for rebuild after accident, rr C-GWA 01.05.17
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<b>J-Air [JL/JLJ 'Jal Bird']</b>			
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JA246J	ERJ190-100STD	19000728	ex PR-EYY, dd 12.04.17
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<b>Japan Air Commuter [3X/JAC 'Commuter']</b>			
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JA842C	DHC-8 402	4073	lrf 30.04.17, st Unical Aviation 25.05.17 & rr N577UA
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<b>Norwegian Air Shuttle [DY/NAX 'Nor Shuttle']</b>			
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LN-KHA	737-31S	29100	st unknown, reg'n canx 05.04.17, is std at Sofia
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LN-KHB	737-31S	29264	as LN-KHA
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LN-KHC	737-31S	26265	as LN-KHA
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LN-KKX	737-33S	29072	as LN-KHA
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LN-NGK	737-8JP	39022	reg'n canx 25.04.17, trf to Norwegian Air International
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LN-NGL	737-8JP	39023	reg'n canx 26.04.17, trf to Norwegian Air International
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<b>Norwegian Long Haul [DU/NLH 'Nor Star']</b>			
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EI-LNJ	787-9	37308	rr LN-LNJ 04.04.17
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<b>Aerolineas Argentinas [AR/ARG]</b>			
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LV-CVX	737-708	30641	lrf 02.04.17, ret to AerCap after lease, rr N7859B 16.05.17
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LV-GUC	737-800(8SH)	41358	ex N1786B, dd 18.04.17, lsd fr Air Lease Corp
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<b>Andes Lineas Aéreas [OY/ANS 'Aerandes']</b>			
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LV-GWL	737-85F	30007	ex 9M-FFD, dd 17.05.17, lsd fr Macquarie AirFinance
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<b>KlasJet [KLJ 'Class Line']</b>			
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LY-KLJ	737-524	28923	ex VP-BYJ, dd 30.01.17
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<b>Air Lugo/ALK Airlines [VBB 'Air Lugo']</b>			
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LZ-DEO	DC-9 82	49552	ex YR-OTL, corrects previously published info, c/n plate checked
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<b>BH Air [8H/BGH 'Balkan Holidays']</b>			
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LZ-AOA	A319-112	3139	lrf 08-09.03.17, for Germania
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LZ-BHI	A320-232	3125	lrf 02.05.17, lsd to/ret fr SmartLynx Airlines Estonia
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<b>Cargo Air [CGF 'Clever']</b>		
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We welcome any feedback on this listing.

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

N914GD	Short 360-200	SH3724	ex S7-PRI, reg'd 09.05.17
<b>Air Transport International</b>			
N396AX	767-319ER	26264	ex N411LF, d 28.04.17, lsd fr Cargo Aircraft Management, lsd to/op for Amazon Prime Air, rr N347AZ 08.05.17
<b>Alaska Airlines [AS/ASA]</b>			
N272AK	737-900ER(990)	44112	ex N1786B, dd 21.04.17
N756AS	737-490	25097	lrf 11.01.17, ret to lessor & st ASL Aircraft Investment (No 3) 21.04.17
<b>Allegiant Air [G4/AAV]</b>			
N231NV	A320-214	1171	ferried Greensboro – Sanford 18.04.17 for eis
N233NV	A320-214	2001	ferried Dublin – Goodyear 03.05.17 prior to eis
N309NV	A319-111	3084	ferried Southend – Oklahoma City 09.05.17 prior to eis
<b>Alpine Aviation [5A/AIP 'Alpine Air']</b>			
N716MJ	Beech 1900D	UE-16	reg'd to Alpine Aviation Express 25.05.17
<b>American Airlines [AA/AAL]</b>			
N900UW	A321-231	7617	ex D-AVZL, dd 05.04.17, fleet # '900'
N901AA	A321-231	7636	ex D-AVDY, dd 20.04.17, fleet # '901'
N934AA	A321-231	7500	ex F-WZMZ, dd 25.04.17, fleet "934"
N317PG	737-800(823)	33344	dd 07.04.17, fleet # '3PG'
N819AN	787-8	40637	dd 07.04.17, fleet # '8AW'
<b>Asia Pacific Airlines (Aero Micronesia) [P9/MGE 'Magellan']</b>			
N757MQ	757-230	25436	st Alpar I 12.04.17 & lsd back, reg'd 01.05.17, still std at Goodyear
<b>Catalina Flying Boats [CBT]</b>			
N9187	Cessna 208B	208B0948	ex EC-IKM, reg'd 08.05.17 to Catalina Air Transport, bf IAL.
<b>Columbia Helicopters</b>			
N239CH	Boeing 234LR	MJ-006	ex P2-CHK, reg'd 04.05.17
<b>Compass Airlines [CP/CPZ]</b>			
N751CZ	E170-100LR	17000247	lrf 30.04.17, ferried Minneapolis – Nashville 01.05.17 & ret to Delta Air Lines after lease
N752CZ	E170-100LR	17000255	as N751CZ
<b>Coulson Aviation/Flying Tankers</b>			
N608SW	737-3H4	27928	ferried Portland PDX – Nanaimo 25.05.17 for conversion
N617SW	737-3H4	27700	ferried Spokane – Nanaimo 26.05.17 after painting for conversion
<b>Delta Air Lines [DL/DAL]</b>			
N319DN	A321-211	7479	ex F-WZMY, dd 13.04.17, fleet # '3019'
N831NW	A330-302	1783	ex F-WWKA, dd 27.04.17, fleet # '3331'
N377DE	737-8EH	39632	ferried San Salvador – Detroit 18.05.17 for eis
N876DN	737-900ER(932)	31987	dd 07.04.17, fleet # '3876'
N877DN	737-900ER(932)	31988	dd 26.04.17, fleet # '3877'
<b>Envoy Air (American Eagle) [MQ/ENY]</b>			
N253NN	E170-200LR	17000649	ex PR-EZH, dd 12.04.17 & reg'd to American Airlines
N254NN	E170-200LR	17000650	ex PR-EZI, dd 28.04.17 & reg'd to American Airlines
N537EA	CRJ.702ER	10316	lrf 01.04.17, ret to American Airlines after lease
N626AE	ERJ 145LR	145117	lrf 17.04.17, ret to American Airlines after lease
N672AE	ERJ 145LR	145794	ex PT-SMV, dd 26.04.17, lsd fr American Airlines
N675AE	ERJ 145LR	14500806	ex PT-SNI, dd 25.05.17, lsd fr American Airlines
N676AE	ERJ 145LR	14500807	ex PT-SNJ, dd 21.04.17, lsd fr American Airlines
N680AE	ERJ 145LR	14500820	ex PT-SNU, dd 22.05.17, lsd fr American Airlines
<b>ExpressJet Airlines [EV/ASQ 'Acey']</b>			
N451CA	CRJ200ER	7562	reg'n canx 22.05.17, pwfu 2013 unk location
N672AE	ERJ 145LR	145794	ret to American Airlines after lease
N675AE	ERJ 145LR	14500806	lrf 04.04.17, ret to American Airlines after lease
N676AE	ERJ 145LR	14500807	ret to American Airlines after lease
N680AE	ERJ 145LR	14500820	lrf 04.04.17, ret to American Airlines after lease
N865AS	CRJ200ER	7507	reg'n canx 04.05.17, was dbr 17.07.12
N12922	ERJ 145LR	145338	lrf 09.08.17, ret to United Airlines & st Victory Air
N13994	ERJ 145LR	145291	lrf 24.03.17, ret to United Airlines after lease & st Regional
N16502	ERJ 135LR	145166	ret to United Airlines after lease
<b>FedEx Express [FX/FDX 'Fedex']</b>			
N950FE	Cessna 208B	208B0056	st Federal Express Canada Corp 23.05.17 & reg'n canx same day
<b>Frontier Airlines [F9/FFT]</b>			
N209FR	A320-214	4641	lrf 11.02.17, ret to lessor after lease, reg'n canx 17.05.17
N308FR	A320-251n	7538	ex D-AVYV, dd 03.04.17, named 'Flo the Flamingo'

N309FR	A320-251n	7555	ex F-WWDE, dd 11.04.17, named 'Weston the Woodpecker'
N928FR	A319-111	2236	lrf 09.02.17, ret to Macquarie AirFinance after lease & pwfu
<b>Horizon Air [QX/QXE]</b>			
N622QX	E170-200LR	17000651	ex PR-EZK, dd 11.04.17, Alaska Airlines cls
N623QX	E170-200LR	17000652	ex PR-EZL, dd 19.04.17, Alaska Airlines cls
<b>Island Air (Hawaii Island Air) [WP/MKU 'Moku']</b>			
N339NG	DHC-8 402	4339	rr N685WP 12.05.17
N683WP	DHC-8 402	4554	ex C-FTWU, dd 28.04.17, named 'Kulana Polo'
<b>JetBlue Airways [B6/JBU]</b>			
N979JT	A321-231	7627	ex D-AVXX, dd 13.04.17 & reg'd same day
<b>Kalitta Air [K4/CKS 'Connie']</b>			
N496BC	747-4B5(BCF)	26396	ex HL7486, dd 29.04.17 Marana – Oscoda, bf Boeing
N701CK	747-4B5F	26416	ex HL7448, dd 17.05.17, lsd fr AFS Investments 68 (GECAS)
N793CK	747-228B(F)	23736	lrf 20.04.17, ferried Seattle – Oscoda 21.04.17 & pwfu
<b>Kalitta Charters II</b>			
N849NX	737-436	25849	ex G-DOCO, bf Classic 400 Holdings (Automatic), ferried Victorville – Miami 13.05.17 for cargo conversion
<b>Pacair (Pro Aire Cargo &amp; Consulting) [WIS 'Wisair']</b>			
N799TS	Beech 99	U-57	ex C-GNAL, reg'd 26.05.17 to Pro Aire Cargo & Consulting
<b>Piedmont Airlines [PT/PDT]</b>			
N626AE	ERJ 145LR	145117	dd 22.05.17, lsd fr American Airlines
<b>PSA Airlines (American Eagle) [TF/JIA 'Blue Streak']</b>			
N537EA	CRJ.702ER	10316	ex C-GIAP, dd 27.04.17, leased from American Airlines
<b>Republic Airlines [YX/RPA 'Brickyard']</b>			
N741YX	E170-200LR	170000653	ex PR-EZM, dd 20.04.17, lsd fr United in United Express cls
N751CZ	E170-100LR	17000247	ex PT-SFY, dd 02.05.17, lsd fr Delta Air Lines, rr N880RW 15.05.17
N752CZ	E170-100LR	17000255	ex PT-SJG, dd 02.05.17, lsd fr Delta Air Lines, rr N882RW 15.05.17
N746CZ	E170-100LR	17000180	rr N875RW 03.05.17
N747CZ	E170-100LR	17000187	rr N876RW 02.05.17
<b>Shoreline Aviation</b>			
N887ME	Cessna 208	20800402	ex N719MS, bf Osprey Express 01.05.17 & reg'd 11.05.17
<b>Sky Lease Cargo [GG/KYE]</b>			
N908AR	747-412F	28026	ex 9V-SFF, dd 30.04.17 Singapore – Miami
<b>SkyWest Airlines [OO/SKW]</b>			
N207SY	E170-200LR	17000643	ex PR-EYZ, dd 06.04.17, United Express cls
N208SY	E170-200LR	17000644	ex PR-EZA, dd 06.04.17, United Express cls
N256SY	E170-200LR	17000647	ex PR-EZF, dd 19.04.17, Delta Connection cls
N257SY	E170-200LR	17000648	ex PR-EZG, dd 19.04.17, Delta Connection cls
N715SK	CRJ.701ER	10179	repainted into American Eagle cls, was United Express
N718SK	CRJ.701ER	10184	as N715SK
N732SK	CRJ.701ER	10194	as N715SK
N755SK	CRJ.702ER	10220	as N715SK
N756SK	CRJ.702ER	70221	as N715SK
N900EV	CRJ200ER	7608	ferried Tucson – Salt Lake City 09.05.17 for eis
N906EV	CRJ200ER	7642	ferried Tucson – Chicago ORD 09.05.17 for eis
N907EV	CRJ200ER	7648	ferried Roswell – Clarksburg 09.05.17 prior to eis
N914EV	CRJ200ER	7752	ex C-FMND, dd 08.05.17
N919EV	CRJ200ER	7780	ex C-FMOW, reg'd 16.05.17
N984CA	CRJ100ER	7171	reg'n canx 03.05.17, pwfu at Marana
<b>Southwest Airlines [WN/SWA]</b>			
N608SW	737-3H4	27928	lrf 09.04.17, st Coulson Aviation (USA) 02.05.17
N7853B	737-708	30707	ferried Paine Field – Dallas DAL 18.04.17 for eis
N7854B	737-71B	29372	ferried Paine Field – Phoenix 05.04.17 for eis
N8529Z	737-800(8H4)	36974	ex N1786B, dd 17.04.17
<b>Spirit Airlines [NK/NKS 'Spirit Wing']</b>			
N535NK	A319-133	4403	ex EI-FVC, dd 13.02.17, lsd fr Avolon, ferried Tampa – Baltimore 24.05.17 for eis
N536NK	A319-133	4422	ex EI-FVD, dd 13.02.17, lsd fr Avolon, ferried Tampa – Baltimore 23.05.17 for eis
N647NK	A320-232	7635	ex F-WWDS, dd 06.04.17
N648NK	A320-232	7636	ex F-WWIA, dd 25.04.17
<b>Transair (Trans Executive Airlines of Hawaii) [MU]</b>			
N326TR	737-210C	20917	ex ZS-IAB, reg'd 16.05.17 to Trans Executive Airlines of Hawaii



*Lessor Apollo Aviation has provided Boeing 737-8EH UR-PSX (c/n 34280) to Ukraine Air International. The aircraft was delivered from Boeing Field to Kiev via Dublin.*  
AIRTEAMIMAGES.COM/  
CARL FORD





Russia's Redwings has leased Airbus A321-231 VP-BRS (c/n 1843) from Aviation Capital Group. The airline now has two A321s at its disposal.

AIRTEAMIMAGES.COM/  
ARTYOM ANIKEEV



**United Airlines [UA/UAL]**  
N892UA A319-132 2940 ferried Victorville – San Francisco 20.04.17 for eis

**Victory Air**  
N12922 ERJ 145LR 145338 ex PT-SNE, reg'd to DAS Plane 23.05.17

**Virgin America [VX/VRD 'Redwood']**  
N921VA A321-253n 7589 ex D-AYAL, dd 19.04.17, lsd fr GECAS

**Vision Air [V2/RBY 'Ruby']**  
N768VA 767-222 21869 st Jetran 13.04.17

**Wings of Alaska**  
N331AK Cessna 208B 208B0739 st Aircraft Structures International 03.05.17  
N332AK Cessna 208B 208B0779 as N331AK

**Peruvian Airlines [P9/PVN]**  
OB-2138-P 737-530 24945 ex N945AU, updates March section

**Star Perú [2I/SRU 'Star-up']**  
OB-2130-P CRJ-200LR 7379 ex N874TM

**Wings of Lebanon [W7/WLB]**  
SX-BHN A319-112 1612 ex 5N-FNF, dd 22.04.17 Craiova – Beirut, lsd fr Olympus Airways  
SX-BXT A321-211 666 ex EI-ESI, dd 12.04.17 Athens – Beirut, lsd fr Olympus Airways

**Austrian Airlines [OS/AUA]**  
OE-LWF E190-200LR 19000447 ex D-AEBH, dd 11.05.17, lsd fr Lufthansa

**Niki [HG/NLY 'Flynik!']**  
OE-LCH A321-211 4728 ex D-ABCH, dd 12.04.17

**Finnair [AY/FIN]**  
OH-LWH A350-941 97 ex F-WZFO, dd 03.04.17  
OH-LZO A321-231 7611 ex D-AYAX, dd 06.04.17, lsd fr BOC Aviation

**Travel Service [QS/TVS 'Sky Travel']**  
OK-TSP 737-8KN 31716 ex A6-FDH, dd 04.05.17, lsd fr Babcock & Brown  
OK-TSQ 737-8KN 31765 ex A6-FDI, dd 05.05.17, lsd fr Babcock & Brown  
OK-TVK 737-86N 32740 lrd 10.04.17, ret to Celestial Aviation Trading 17 (GECAS) after lease, rr N346PH 26.05.17  
SX-ORG A320-232 1407 ex XY-AGS, dd 18.07.17, lsd fr orange2fly for SmartWings operations

**AirExplore [ED/AXE 'Galileo']**  
OM-JEX 737-8AS 29932 ex VQ-BCJ, dd 05.05.17, lsd fr Avolon

**Brussels Airlines [SN/BEL 'Beeline']**  
EI-FWE RRJ-95B 95117 ex I-PDWW, dd 08.05.17 Venice – Brussels, lsd fr CityJet in full colours  
OO-DWL BAe Avro RJ100 E3361 lrd 01.05.17, ferried Brussels – Norwich 17.05.17 for lease return

**TUI Airlines Belgium [TB/JAF 'Beauty']**  
ES-SAP A320-232 1183 ex SE-RJE, dd 10.05.17, lsd fr SmartLynx Airlines  
OO-JJI 737-752 33793 ferried Woensdrecht – Brazzaville 02.05.17 for ret to ECAir service

**TUI Airlines Netherlands [OR/TFL 'Orange']**  
HB-JUF 767-316ER 27613 ex CC-CBJ, dd 08.05.17, lsd fr Privatair

**Transavia Airlines [HV/TRA]**  
PH-HXI 737-800(8K2) 62151 dd 11.04.17  
PH-HXJ 737-800(8K2) 62159 ex N1786B, dd 21.04.17  
PH-HXK 737-800(8K2) 62157 dd 28.04.17

**Air Born**  
PK-BAR DHC-6 400 857 ex N108MG, dd 05.17, lsd fr CAAMS

**Batik Air [ID/BTK]**  
PK-LUS A320-214 7640 ex F-WWIV, dd 07.04.17, lsd fr Lion Air

**Jayawijaya Dirgantara [JWD 'Wijaya Air']**  
PK-JRW 737-210C 21822 ex PK-YGF, seen Jayapura 12.04.17

**TransNusa Aviation Mandiri [BB/TNU 'TransNusa']**  
PK-TNG ATR 72-212A 689 ex OY-YBV, dd 06.05.17, lsd fr Nordic Aviation Capital

**Colt Transportes Aéreos [XCA 'Colt']**  
PR-XCA 757-28A(F) 24235 ret to lessor & rr N235WD 24.05.17

**GOL Transportes Aéreos [G3/GLO]**

PR-GXZ 737-8EH 40739 ret to Celestial Aviation Trading 23 (GECAS) after lease & rr N653BC 08.05.17

**LATAM Airlines Brasil [JJ/TAM]**  
PR-MYN A320-214 4953 lrd 25.03.17, ferried São Paulo GRU – Abu Dhabi 13-15.04.17 for lease return

PR-MYO A320-214 4974 lrd 20.04.17

PT-MOH 767-316ER 27615 ret to AerCap 05.17 after lease

**Sideral Linhas Aéreas [SID]**  
PR-SDW 737-31L 27273 ex N273VS, dd 04.17

**Aeroflot Russian Airlines [SU/AFL]**  
VP-BFA A320-214 7561 ex F-WWIE, dd 28.04.17, st AviaAM Financial Leasing China & lsd back, named 'F Shalyapin'

VP-BFE A320-214 7593 ex D-AUBJ, dd 28.04.17, st AviaAM Financial Leasing China & lsd back, named 'I Levitan'

VP-BFG A320-214 7646 ex F-WWIP, dd 28.04.17, st AviaAM Financial Leasing China & lsd back, named 'G Flerov'

VP-BML 737-800(8MC) 44434 dd 10.04.17, lsd fr Sberbank Leasing, named 'A Khachatryan'

VP-BMM 737-800(8MC) 44439 ex N1795B, dd 17.04.17, lsd fr Sberbank Leasing, named 'V Kandinsky'

VP-BRX A320-214 3063 lrd 19.03.13, ferried Moscow SVO – Mineralnye Vody 20.03.17 for end of lease checks

VQ-BAZ A320-214 3789 lrd 05.12.16, ret to GECAS 04.17 after lease

**AirBridgeCargo Airlines [RU/ABW 'AirBridgeCargo']**  
VP-BBP 747-8F(83Q) 63695 ex N6018N, dd 05.04.17

**Nordwind Airlines [N4/NWS]**  
VP-BHN A321-231 3106 ex 4R-MRC, corrects c/n

**Red Wings [WZ/RWZ 'Remont Air']**  
VP-BRS A321-231 1843 ex EI-FSU, dd 21.04.17, lsd fr Aviation Capital Group

**Rossiya Airlines [FV/SDM]**  
VQ-BCJ 737-8AS 29932 lrd 06.12.16, ret to Avolon 05.17 after lease

VQ-BJC 737-8K5 27992 ret to AS Air Lease 04.17 after lease & rr EI-IAS to AS Air Lease III (Ireland) 28.04.17

**VIM Airlines [NN/MOV 'Mov Air']**  
VP-BLI 777-21HER 27253 ex 2-RLAL, dd 20.04.17

VQ-BMI A330-203 655 ex B-16308, dd 18.05.17, lsd fr AerCap

VP-BMR 777-21HER 29325 ex 2-RLAN, dd 05.05.17

**AirAsia Philippines [Z2/EZD]**  
RP-C8977 A320-216 2816 ex 9M-AFG, dd 30.03.17

RP-C8978 A320-216 2989 ex 9M-AFO, dd 23.04.17

**Pan Pacific Airlines**  
RP-C7932 A320-232 1422 ex CS-TKV, dd 18.04.17

**Nova Airlines [N9/NVR 'Navigator']**  
SE-RDO A321-231 2216 lrd 26.03.17

**SAS Scandinavian Airlines [SK/SAS]**  
LN-RPB 737-683 28294 lrd 14.04.17, ret to Petrus ACS Aircraft MSN28294 after lease & pwfu

SE-DOY A320-251n named 'Markus Viking'

**TUIfly Nordic [6B/BLX 'Bluescan']**  
SE-RFU 737-8K5 37259 lrd 27.04.17, reg'n canx 16.05.17, trf to TUIfly.com

**Enter Air [E4/ENT]**  
LZ-MDO A320-214 879 ex SX-BDS, dd 19.05.17, lsd fr Air Via

SP-ESA 737-8AL 35075 ex B-5331, dd 23.05.17, lsd fr BOC Aviation

SP-ESB 737-86N 35641 ex B-5432, dd 23.05.17, lsd fr Macquarie AirFinance

**LOT Polish Airlines [LO/LOT]**  
SP-LRF E170-200LR 17000154 lrd 27.02.17, ret to GECAS 04.17 after lease

SP-LWA 737-89P 30682 ferried Lasham – Warsaw 09.05.17 for eis

SP-LWB 737-89P 32800 ferried Lasham – Warsaw 14.05.17 for eis

**EgyptAir [MS/MSR]**  
SU-GCE A330-243 600 lrd 28.02.17, ferried Cairo – Dresden 18.04.17 for cargo conversion

SU-GEH 737-800(866) 63800 dd 28.04.17, st DAE Capital on delivery & lsd back

**Sky Express [GQ/SHE 'Air Crete']**

## Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	colours
cn	manufacturer's construction/serial number
cnvrt'd	converted
dbf	destroyed by fire
dbf	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrd	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	sold to
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed

Thanks to Dave Richardson and LAASI Aviation for the above





We welcome any feedback on this listing.

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

SX-ONE	ATR 72-212A	553	ex F-GVZL, dd 07.04.17
SX-TWO	ATR 42-500	516	ex F-GVZC, dd 11.05.17
<b>Bora Jet [YB/BRJ]</b>			
TC-YAG	ERJ190-100LR	19000263	lrf 23.04.17, std Adana
TC-YAH	ERJ190-100LR	19000264	lrf 23.04.17, std Cologne
TC-YAI	ERJ190-100LR	19000201	lrf 18.12.16, std Ankara ESB
TC-YAO	E190-200LR	19000069	lrf 08.01.17, std Istanbul SAW
TC-YAP	E190-200LR	19000084	lrf 11.04.17
TC-YAR	E190-200LR	19000093	lrf 03.04.17, std Istanbul SAW
TC-YAT	ERJ190-200AR	19000067	lrf 15.04.17, std Istanbul SAW
TC-YAU	ERJ190-200AR	19000088	lrf 03.04.17, ret to GECAS after lease, rr EI-FLR & ferried Istanbul SAW – Clermont Ferrand 18.05.17 for storage
<b>Corendon Airlines [XC/CAI]</b>			
TC-TJG	737-86J	29120	lrf 06.05.17, lrf to Corendon Airlines Europe
TC-TJL	737-86J	32920	lrf 01.01.17, ret to Apollo Aviation 04.17 after lease, rr EI-GAT to SASOF III (A8) Aviation Ireland DAC 26.04.17
<b>Freebird Airlines [FH/FHY]</b>			
TC-FHB	A320-214	3025	lrf 10.04.17, lsd to VietJet Air
<b>Onur Air [8Q/OHY]</b>			
TC-OBN	A320-232	2571	lrf 23.01.17, seen Woensdrecht in full Yamal Air cls
TC-OB0	A320-232	2688	seen Woensdrecht in full Yamal Airlines cls
<b>Pegasus Airlines [PC/PGT 'Sunturk']</b>			
TC-AAZ	737-82R	40875	ferried Istanbul SAW – East Midlands 03.05.17, repainted into SmartWings cls
TC-IZB	737-86J	37743	lrf 15.01.17, ret to SMBC Aviation Capital after lease & rr M-IRIC
<b>SunExpress [XQ/SXS]</b>			
TC-SOE	737-800(8HC)	61177	ex N1799B, dd 11.04.17
TC-SOF	737-800(8HC)	61191	dd 21.04.17
<b>Turkish Airlines [TK/THY]</b>			
TC-JPU	A320-214	3896	lrf 30.10.16, std Istanbul SAW, HK-5221 is reserved
TC-JPV	A320-214	3931	lrf 23.12.16, std Istanbul SAW, HK-5223 is reserved
TC-JPY	A320-214	3949	lrf 24.01.17, std Istanbul SAW, HK-5222 is reserved
TC-LOB	A330-343E	1491	ex EI-FNZ, dd 18.05.17, lsd fr Intrepid Aviation Partners
<b>WOW air [WW/WOW]</b>			
TF-NEO	A320-251n	7560	ex D-AUBC, dd 21.04.17, lsd fr Air Lease Corp
<b>Sunkar Air</b>			
UP-B	737-330	26428	ex N642AU, dd 05.05.17, bf Automatic
<b>Dart Ukrainian Airlines [D4/DAT 'Dart Limited']</b>			
UR-COG	A319-112	1916	ex 2-VKWC, dd 13.04.14, lsd fr Babcock & Brown
<b>Ukraine International Airlines [PS/AUI]</b>			
UR-PSX	737-8EH	34280	ex EI-FXX, dd 28.04.17, lsd fr Apollo Aviation
UR-	737-408	26320	ex N133WF, dd 15.05.17, lsd fr Vallair
<b>Air Frontier</b>			
VH-JMD	Pa.31	31-7401260	ex N61463, reg'd 04.05.17
<b>Australasian Jet</b>			
VH-WGS	Cessna 404	4040686	lsd to Handel Aviation 26.05.17
<b>Aviair</b>			
VH-TQU	Cessna 208B	208B2396	ex N3296A, reg'd 23.05.17, lsd fr Acena Nominees
<b>Bayswater Road</b>			
VH-TTK	Cessna 404	4040423	ex ST-AMA, reg'd 24.05.17
<b>CHC Helicopters Australia</b>			
VH-NVE	Agusta AW139	31610	ex G-SARE, reg'd 27.04.17 to CHC Cayman ABL Borrower
<b>Desert-Air Safaris</b>			
VH-OMN	Pa.31 350	31-8252056	ex N4108G, reg'd 09.05.17
<b>Express Freighters Australia [EFA 'Express Freight']</b>			
VH-XNH	737-4S3(F)	24796	ex N43XA, reg'd 26.04.17 to Qantas Airways, see last month's section
<b>Shrine Aviation</b>			
VH-OMN	Pa.31 350	31-8252056	st Desert-Air Safaris Pty
<b>Virgin Australia Airlines [VA/V0Z 'Kanga']</b>			
VH-YFE	737-800(8FE)	41013	dd 17.04.17, named 'Mackenzie Bay'
<b>VietJet Air [VJ/VJC]</b>			
TC-FHB	A320-214	3025	ex D-AAAP, dd 05.17, lsd fr Freebird Airlines
VN-A630	A321-211	7655	ex D-AVYL, dd 28.04.17, st Avolon on delivery & lsd back

<b>Air India [AI/AIC]</b>			
VT-GIE	A320-251n	7526	ex F-WWIH, dd 03.04.17, lsd fr CIT Aerospace
VT-EXG	A320-251n	7568	ex F-WWDR, dd 24.04.17, lsd fr ALAFCO
VT-EXT	A320-251n	7559	ex F-WWIN, dd 10.04.17, lsd fr GECAS
<b>AirAsia India [I5/IAD 'Red Knight']</b>			
VT-CCU	A320-214	4641	ex N209FR, dd 17.05.17, lsd fr Macquarie AirFinance
<b>IndiGo [6E/IGO 'Ifly']</b>			
VT-IHD	A320-232	2914	ex LZ-AWH, dd 04.17, lsd fr AWAS
VT-ITV	A320-271n	6829	ex F-WWIU, dd 10.04.17
<b>Spice Jet [SG/SEJ]</b>			
VT-SUV	DHC-8 402	4340	ex N34NG, dd 17.05.17, lsd fr Nordic Aviation Capital
VT-SUW	DHC-8 402	4345	ex N345NG, dd 28.05.17, lsd fr Nordic Aviation Capital
<b>Aerolitoral (Aeroméxico Connect) [5D/SLI]</b>			
XA-AEE	ERJ190-100AR	19000036	ex N675BC, updates last month's section
XA-AEF	ERJ190-100AR	19000041	ex N673BC, dd 22.05.17, lsd fr Nordic Aviation Capital
<b>Aeroméxico [AM/AMX]</b>			
N438AM	787-9	43862	dd 06.04.17 & reg'd to BC2 43862, Charleston # 169
<b>Estafeta Carga Aérea [E7/ESF]</b>			
XA-EMX	737-375(F)	23707	N290PH is assigned
XA-	737-490(F)	28894	ex N706AS, dd 08.05.17, lsd fr Vx Capital Partners
<b>Interjet [40/AIJ 'ABC Aerolineas']</b>			
XA-AP0	A320-251n	7576	ex F-WWDJ, dd 28.04.17
XA-JRM	A320-251n	7523	ex F-WWBC, dd 11.04.17, lsd fr AerCap
<b>Safi Airways 40/SFW]</b>			
ZS-TRJ	DC-9 87	49829	ex EC-GRM, dd 10.04.17, lsd fr Gryphon Airlines
<b>Blue Air [0B/BMS 'Blue Messenger']</b>			
YR-BMJ	737-82R	40696	ex TC-AAV, dd 03.05.17
YR-BMK	737-82R	40876	ex TC-ABP, dd 17.05.17
<b>Star East Airlines</b>			
YR-SEA	A320-231	357	ex ER-AXO, dd 04.17
<b>Airlink (SA Airlink) [4Z/LNK 'Link']</b>			
ZS-	ERJ190-100AR	19000193	ex N193NC, dd 24.04.17, lsd fr Nordic Aviation Capital
<b>Solenta Aviation [SET]</b>			
ZS-XCI	ATR 42-500	428	ex C9-SAM, reg'd 06.02.17
ZS-XCJ	ATR 72-201(F)	381	ex HB-AFP, reg'd 22.02.17
<b>SriLankan Airlines [UL/ALK]</b>			
4R-ABK	A320-214	2584	lrf 31.12.16, ferried Colombo – Jakarta CGK 15-16.04.17 for lease return
4R-MRF	A319-132	1893	lrf 26.02.17, ferried Colombo – Tupelo 25-26.04.17 & pwtu
<b>Air Tanzania [TC/ATC 'Tanzania']</b>			
ZS-CMH	CRJ100ER	7292	ex N595SW, dd 19.05.17, lsd fr CemAir
<b>Airworks Kenya</b>			
5Y-NXZ	Cessna 208B	208B0357	st Parachutisme Adrenaline & rr C-GYRQ 03.05.17
<b>Fly540.com [5H/FFV 'Swift Tango']</b>			
5Y-CGH	DHC-8 314	525	ex PH-ADD, dd 20.05.17, lsd fr Castletlake
<b>Jetways Airlines [JWX 'Jetways']</b>			
5Y-JWX	Fokker 50	20209	ex SX-DMS, dd 13.04.17
<b>RAM Air Services</b>			
5Y-FSI	Saab 340B+	340B-457	ex N457XJ, dd 17.05.16
<b>Skyward International [OW/SEW 'Skyward Express']</b>			
5Y-SMS	Fokker 50	20112	ex PH-KPB, dd 10.04.17
5Y-	Fokker 50	20207	ex SX-BRM, dd 04.17
<b>Felix Airways [FO/FXX]</b>			
4L-IMA	737-322	24717	rr TT-DHC
<b>Flyme (Vila Air) [VP/VQI]</b>			
8Q-VAX	ATR 42-500	647	ex F-WNUH, dd 29.05.17
<b>Croatia Airlines [OU/CTN]</b>			
EC-MLO	CRJ1000	19050	ex C-GIAV, dd 18.05.17, lsd fr Air Nostrum
<b>Corendon Airlines Europe</b>			
9H-TJG	737-86J	29120	ex TC-TJG, dd 23.05.17 Istanbul SAW – Malta
<b>Congo Airways [8Z]</b>			
ET-APK	737-860	40964	ex N1786B, dd 16.04.17, lsd fr Ethiopian Airlines
<b>Scoot [TZ/SCO 'Scooter']</b>			
9V-OFH	787-8	37124	dd 18.04.17, named 'Scooti-mite'
<b>Singapore Airlines [SQ/SIA]</b>			
9V-SYG	777-312	28528	st CSDS Aircraft Sales & Leasing, rr N7773A 04.05.17



RwandAir's newest Boeing 737-8SH, 9XR-WR (c/n 41357), was delivered to the carrier's Kigali base on May 25. The aircraft has been sourced from Air Lease Corporation. KEY-CRAIG WEST



**The latest news from maintenance, repair and overhaul providers**

## Romanian Growth

Bacau-based Aerostar says it is in the final stages of negotiations with the airport authorities at Lasi in northern Romania (81 miles [130km] north of Bacau) regarding the construction of a new four-bay MRO hangar. Providing approval is given, Aerostar expects the new facility to open for business by the summer of 2019, when overhaul work on Airbus A320 Family and Boeing 737

Classic/NG aircraft will start. Since diversifying into commercial aviation MRO activities 12 years ago, Aerostar has steadily built up a strong and growing customer base from airlines in Europe, the Middle East and Africa. During 2016, the company completed 80 C and D checks at its Bacau facility. (Photo Key-Barry Woods-Turner)

## Magnetic GoldCare Partner

Estonian integrated services provider, Magnetic MRO has signed a multi-year agreement with Boeing to provide the US manufacturer's GoldCare maintenance services to customer airlines. The flexible suite of services has been designed to help airlines improve operations and includes customised engineering and maintenance options. These are tailored to the individual airline, from start-ups with limited maintenance and engineering experience to traditional network carriers with established support functions. As a line and base maintenance GoldCare partner, Magnetic MRO will be able to offer a package of solutions for airline customers covering all Boeing types at its facilities and outstations. Risto Mäeots, CEO of Magnetic MRO, commented: "We are very proud and excited to be endorsed as a partner by the world's leading aeroplane designer and manufacturer. Our relationship with Boeing has evolved over the last two decades due to an increasing number of satisfied customers and the variety of their fleets."



## SR Technics Extends Capabilities

SR Technics is expanding its line maintenance capabilities to accommodate two new Airbus Families. Since April 1, its Zürich line station and from May 1, the Geneva station have been servicing the A350 and both are now also equipped to handle everything from routine checks to major overhauls on the A320neo (Leap engine variant). Later this summer, its largest line station at Gatwick Airport will also start offering services for both types.

## Wamos Air Contract Extension

Lufthansa Technik and Spanish charter specialist Wamos Air have extended their existing co-operation for a further two years. The German MRO provider has supplied components for Wamos Air's fleet of Boeing 747-400s since 2003. Under the terms of this extension, it will now include warehousing and pooling of spare parts at the airline's Madrid hub as well as providing component repairs and overhauls. Under a five-year total component support contract agreed last year, the carrier's two Airbus A330s are also

being looked after by the German company. A third A330 is about to enter service with Wamos under a lease agreement from AerCap which has seen the scope of the contract and the spectrum of components covered being extended significantly. Enrique Saiz, Wamos Air CEO, said: "We have been working with Lufthansa Technik since 2003 and the company has proven to be a reliable partner for component support for our fleet. We are pleased to continue to rely on their support in the future because they are part of our success."



## New Freightier Conversion Facility

Bedek Aviation of Israel Aerospace Industries (IAI) is opening a new aircraft conversion site in Mexico City. The facility will be operated by Mexicana MRO Services as Bedek's sub-contractor and will convert Boeing 767-300 into freighters. The first aircraft was expected to be delivered to the facility at the end of June and it will be worked on by dozens of Mexicana employees who have undergone additional training at IAI.

In line with market forecasts of continuing growth in the demand for passenger to freighter conversions, IAI estimates that this collaboration with Mexicana will yield projects worth tens of millions of dollars over the coming years. As owners of the supplementary type certificate for the conversion, IAI will retain engineering authority and overall responsibility for conversions performed in Mexico. (Photo Bedek Aviation)





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## Hong Kong Airlines Launches Cadet Programme

Hong Kong Airlines has launched a fully funded cadet pilot programme in partnership with L3 Commercial Training Solutions (CTS) through its Airlines Academy. The programme aims to provide eight to 15 candidates this year, putting them through an 18-month training course at the L3 Airline Academy Training Center in New Zealand. Successful graduates will become fully employed Second Officers flying across the airline's route network. Tang King Shing, Vice Chairman of Hong

Kong Airlines, said: "The launch of the cadet programme forms a remarkable milestone for Hong Kong Airlines in nurturing and grooming our own talent, and ties in with the company's commitment to the local aviation industry." Hong Kong Airlines has enjoyed impressive growth in recent years and is set to take delivery of its first Airbus A350 in Q3 as part of a fleet expansion programme that will see the airline operate more than 50 aircraft by the end of 2019. In addition, the Hong Kong Airlines Aviation Training Centre is set to be completed by the end of 2018, housing 12 full flight simulators. Alan Crawford, President of L3 CTS, added: "This programme will support Hong Kong Airlines' resourcing demands as it continues to experience rapid expansion. This award demonstrates recognition of our status as a trusted provider of high-calibre aircrew and our ongoing commitment to supporting the global demand for highly skilled, qualified commercial pilots." Hong Kong Airlines cadet pilot programme is open for applications until July 31. Interested parties can apply through the airline's website. (Photo L3 CTS)



## Cabin Safety Training

DaVinci Inflight Training Institute will provide a comprehensive package of cabin safety training for business aviation crew at its new facility at Fort Lauderdale Executive Airport in Florida. The soon-to-be completed 6,500sq ft (604m<sup>2</sup>) campus will open for tours and classes this summer.

DaVinci Inflight Training Institute is a joint venture between Paula Kraft, founder and President of Atlanta-based Tastefully Yours Catering, and Scott Arnold, a well-regarded business aviation cabin safety trainer. As well as cabin safety training, courses will be run on inflight service, etiquette and career development. The new multi-purpose facility includes a mock flight department area that will test graduates on the entire cabin service experience. Bespoke products and services, including butler training, new galley technology and food packaging and presentation, will also be available. Classes have been capped at 12 students to maximise the training experience for all levels of experience, and focus on the development of each student. Arnold explained: "Every instructor is experienced and working as a corporate flight attendant, cabin crew or caterer. All of our cabin safety courses are CRM [customer relationship management] driven and focus on communication skills and the cabin crew and flight deck experience during an emergency."

## LAT Selects the SR20

Lufthansa Aviation Training (LAT) has chosen the Cirrus SR20 to replace its Beechcraft F33A Bonanza fleet at its academy in Arizona, Phoenix. Delivery of the 25 new aircraft will begin in October with the last one scheduled to arrive at the facility in February. "With the new single motor Cirrus SR

20, the trainees will not only be flying aircraft fitted out with all the latest features, it will also mean a 50% cut in operational and maintenance costs", explained Rainer Hiltbrand, CEO of Lufthansa Aviation Training. Around 350 pilots a year are trained in Phoenix, both for the Lufthansa Group and third parties such as KLM and All

Nippon Airways. LAT has yet to decide on the fate of the Bonanzas. "We will probably offer them for sale to former students of Phoenix," says Hiltbrand. "For many of our former pupils who are now pilots, there is a very high emotional value attached to these aircraft." (Photo Lufthansa Aviation Training)







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## A Room with a View

The former ramp tower at Stockholm/Arlanda Airport, which has stood empty for 15 years, is about to get a new lease of life as an apartment. With the help of Swedish artist Cilla Ramnek, the old tower has been transformed into a unique apartment totalling almost 377sq ft (35m<sup>2</sup>) of space with panoramic views across the airport.

Ramnek commented: "I accepted this assignment because I found the tower setting extraordinarily cool in a way I really like, both aesthetically [and because] it had an air of abandonment, something I have always been intrigued by. This is by far the most fun environment I have ever worked in. (Photo Arlanda Airport/David Becker)



## Boeing 707 Donated to HARS

Film star John Travolta is donating his "beloved" Boeing 707-138B, N707JT (c/n 18740), to the Historical Aircraft Restoration Society (HARS) of Albion Park, Australia. The jet was originally delivered to Qantas on September 10, 1964 as VH-EBM *City of Launceston*, and was converted for private use after it was retired.

The actor explained: "As many of you know, flying is a passion of mine and I am just so grateful to be fortunate enough to count many hours flying such a beautiful aircraft. I was honoured to have the aircraft repainted in its original Qantas livery when I became an ambassador for the airline, and it is so fitting that many of the volunteers at HARS are retired Qantas employees."

The 707 is not currently airworthy, though

Travolta is confident it can be restored: "Having seen first-hand the dedication and passion of people at HARS, I have no doubt this beautiful and historical aircraft will be flying again." The Hollywood star added: "HARS have an impressive track record of restoring historical aircraft and I have personally flown in a [Lockheed] Super Constellation that they restored to flying condition from almost nothing." Travolta revealed he hopes to be part of the crew that will eventually fly the aircraft back to Australia, "supported by well qualified and experienced pilots and engineers." He concluded: "I am truly excited by this project and just so pleased that this beautiful aircraft, for which I obviously have many fond memories, will continue to fly well into the future." (Photo Bob O'Brien)

### Events

Enthusiast shows and events worldwide may be listed here – FREE. Organisers are invited to send correspondence to the editorial department (email: [airlinerworld@keypublishing.com](mailto:airlinerworld@keypublishing.com)). Alternatively, visit our website at [www.airlinerworld.com](http://www.airlinerworld.com)

#### Jul 17-23

The Guild of Aviation Artists – Aviation Paintings of the Year, The Mall Galleries, London, SW1  
[www.gava.org.uk](http://www.gava.org.uk)

#### Jul 22-23

Manchester Airport Aviation and Transport Festival, Manchester Airport, Manchester  
[www.tasmanchester.co.uk](http://www.tasmanchester.co.uk)

#### Oct 8

Midland Air Museum (Coventry) Aviation Enthusiasts' Fair, Coventry Airport, Rowley Rd, Baginton, CV3 4FR  
Carl McQuaide, 07903848726,  
[speedbird707@aol.com](mailto:speedbird707@aol.com)  
<http://speedbird707.wixsite.com/midlandaviationfair>

#### Oct 8

RAF Kenley Aerojumble, Kenley, Caterham on the Hill, Surrey, CR8 5ES. David Sutton, 07973 885754,  
[davidsutton16@aol.com](mailto:davidsutton16@aol.com)

#### Nov 26

Heathrow Aircraft Enthusiasts' Fair, Kempton Park Racecourse, Sunbury-on-Thames, TW16 5AQ  
Keith Manning, 01423 862256,  
email: [keith768@btinternet.com](mailto:keith768@btinternet.com)  
[www.aircraftenthusiastfair.co.uk](http://www.aircraftenthusiastfair.co.uk)

#### Jan 7, 2018

Croydon Airport Aviation & Military Collectors Fair, Croydon Aerodrome, Hallmark Hotel, Purley Way, Croydon, Surrey. David Sutton, 07973 885754,  
[davidsutton16@aol.com](mailto:davidsutton16@aol.com)

### Shows/Displays

#### Jul 24-30

EAA Air Venture, Oshkosh 2017, Wittman Regional Airport, Oshkosh, Wisconsin, USA [www.eaa.org](http://www.eaa.org)

#### Sep 23-26

World Routes, Barcelona, Spain  
[www.routesonline.com](http://www.routesonline.com)

#### Oct 3-5

MRO Europe, ExCeL, London, UK  
[www.mroeuropa.aviationweek.com](http://www.mroeuropa.aviationweek.com)

#### Oct 10-12

NBAA Business Aviation Convention & Exhibition, Las Vegas, Nevada, USA [www.nbaa.org](http://www.nbaa.org)

#### Nov 17-19

ERA General Assembly, Athens, Greece [www.eraa.org](http://www.eraa.org)

#### Nov 17-22

Seoul International Aerospace & Defense Exhibition, Seoul, South Korea [www.seouladex.com](http://www.seouladex.com)

#### Nov 12-16

Dubai Airshow, Dubai World Centre, Dubai, UAE  
[www.dubaiairshow.aero](http://www.dubaiairshow.aero)

Events are subject to change without Airliner World's knowledge. Please check details prior to travel.







## Trislander Bows Out

Former Aurigny Air Services Britten-Norman BN-2A Mk.3 Trislander, G-BEVT (c/n 1057), has been flown into the Imperial War Museum's (IWM) Duxford Airfield for preservation. The aircraft, which was built in 1977 at Britten-Norman's Bembridge factory on the Isle of Wight, spent its entire career with the Channel Islands carrier. Aurigny operated 23 different Trislanders during 46 years of operations with the type. At the time of its retirement, G-BEVT had completed more than 86,000 flights and spent 28,000 hours in the air. It will join 13 other British-built airliners, including iconic types such as Concorde and Comet, as part of the Duxford Aviation Society's British Airliner Collection. David Hands, Chairman, Duxford Aviation Society remarked: "We're very excited about acquiring this airliner for our collection and are extremely grateful to Aurigny for placing it with us and to the IWM for their support on the project. We're delighted that the Trislander is now with us and can be seen by visitors as an integral part of the British Airliner Collection."

## Dreamliner Names Revealed

Qantas passengers will soon be taking to the skies aboard *Waltzing Matilda*, *Boomerang* and *Quokka* as the Australian flag carrier reveals the names chosen for its fleet of eight Boeing 787-9 Dreamliners that will start arriving in October (see *Airliner World*, July 2017). The airline says it received more than 60,000 name suggestions, and 45,000 votes were cast from a final list of 20. Qantas Group CEO, Alan Joyce, commented that the public response to the challenge of naming the aircraft after things that truly capture the spirit of Australia was fantastic. "We had

so many worthwhile entries, we could have probably renamed our entire fleet of 208 aircraft! There were some clear favourites and we have a good mix of names as well," Joyce added.

The final eight are as follows (in no particular order): Great Barrier Reef, Boomerang, Skippy, Waltzing Matilda, Uluru, Great Southern Land, Quokka, Dreamtime.

Qantas says the names will be painted beneath the cockpit window on each aircraft, although their sequencing will only be revealed as the aircraft are delivered.

*Aurigny Air Services's 1977-vintage Britten-Norman BN-2A Mk.3 Trislander, G-BEVT (c/n 1057), will be preserved at the Imperial War Museum at Duxford.*

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## Caption Comp



This month's caption competition.



Thanks to everyone who entered the April 2017 competition and congratulations to Michael Eshpeter, who was selected as the winner with:

**"I am so sorry miss, I will ask maintenance to reduce the suction on the rear lavatory as soon as possible."**

Highly commended:

**"How United should have solved their over-booking crisis on Flight 3411."** (MATEJ KUSIK)



Reports and details of recent incidents.

# Indonesian Runway Excursion

All 146 passengers and six crew escaped unharmed when Sriwijaya Air flight SJ570 left the runway on landing a Manokwari Airport in Indonesia. The incident occurred on May 31 when the aircraft, Boeing 737-33A PK-CJC (c/n

24025), was operating an early morning flight from Makassar, via an en route stop at Sorong. The jet touched down on Manokwari's 6,562ft (2,000m) long Runway 35 but overran the asphalt surface by around 66ft (20m). The

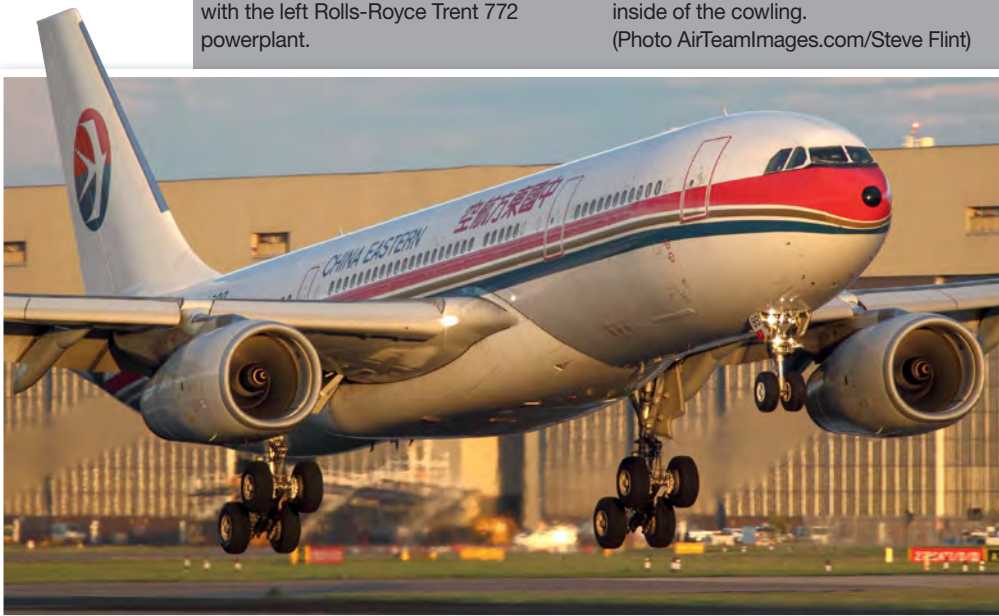
nose landing gear then collapsed with all four emergency slides deployed to enable those on board to evacuate. Local media quoted a spokesperson as saying the aircraft had landed in heavy rain. The 1988-vintage jet has been in service with Sriwijaya Air since July 2007. (Photo AirTeamImages.com/ Dr Frikkie Bekker)



## Damaged Cowling Forces Sydney Return

China Eastern Airlines flight MU736 was forced to return to Sydney shortly after take-off on June 11, after suffering severe damage to its left engine cowlings. Airbus A330-200 B-6099 (c/n 916) was operating the Sydney to Shanghai service when the pilots reported problems with the left Rolls-Royce Trent 772 powerplant.

China Eastern said in a statement that the flight crew had discovered damage to the left engine's inlet casing and elected to return to Sydney. The aircraft landed without further incident. Photos shared on social media by passengers show a large vertical tear in the inside of the cowlings. (Photo AirTeamImages.com/Steve Flint)



## Fokker Fire

A Fokker F-27 cargo aircraft carrying nutrients and other humanitarian supplies was severely damaged during a landing accident at Garbaharey Airport in Somalia. The Aero-Pioneer Group-operated aircraft, 5Y-FMM (c/n 10318), was flying for the United Nations World Food Programme when the incident occurred on June 3. Online Somalian news website *Baydhabo* reports Osman Nuh Hajji, the deputy governor of the Gedo region, had told local media that the aircraft's wing had struck a building near the airport before crashing. Local firefighters were quickly on the scene to extinguish the fire and rescue the four crew. Photos on social media show the aircraft leaning to one side with the right-hand wing torn off and a bent propeller on the number two engine.

## Mexican Metro Ditches

Aeronaves TCM Swearingen SA227-AC Metro III freighter XA-UAJ (c/n AC-586) made a forced landing near Tampico airport on June 2. Mexican newspaper *El Norte* claimed it "ran out of fuel" while flying between Saltillo and Puebla. Photos from the scene show the turbo-prop lying in bushes near the threshold of Tampico's Runway 31. The two pilots were rescued and taken to hospital but neither suffered serious injury and flight operations at Tampico continued unaffected.

DATE	REG'N	C/N	TYPE	OWNER	FATALITIES	LOCATION	NOTES
May-24	N708PV	489	DHC-6 Twin Otter 300	Perris Valley Aviation	0	US	Badly damaged in a landing accident at Perris Valley, California
May-27	9N-AKY	2917	Let L-410VP-E20	Summit Air	2	Nepal	Destroyed when it impacted terrain attempting to land at Lukla
May-27	8Q-TMV	625	DHC-6 Twin Otter 300	Trans Maldivian Airways	0	Maldives	Damaged when landing on the Hulululé Lagoon
May-30	N330BG	3184	Dornier 328JET-310	Heidi Aviation	0	Somalia	Gear-up landing at Mogadishu/Aden Adde
May-30	PK-MPS	208B0656	Cessna 208B Grand Caravan	Mission Aviation Fellowship	0	Indonesia	Sustained substantial damage in a landing accident at Ilaga
May-31	PK-CJC	24025	Boeing 737-33A	Sriwijaya Air	0	Indonesia	Runway excursion after landing at Manokwari/Rendani
May-31	PK-CAQ	FL-953	Beechcraft B300 King Air	Balai Kalibrasi Fasilitas Penerbangan	0	Indonesia	Left the runway on landing at Ambon/Pattimura
Jun-02	XA-UAJ	AC-586	Swearingen SA227-AC Metro III	Aeronaves TSM	0	Mexico	Damaged in a forced landing at Tampico
Jun-02	RA-2099G	1G73-40	Antonov TVS-2MS	SibNIA	0	Mongolia	Impacted terrain during take-off from Ulaanbaatar/Chinggis Khaan
Jun-03	5Y-FMM	10318	Fokker F-27 Friendship 600	Aero-Pioneer Group	0	Somalia	Suffered substantial damage in a landing accident at Garbaharey



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It's fair to suggest that the past few years have been difficult for Thomas Cook Airlines. The British leisure carrier has been forced to do battle on numerous fronts since the turn of the decade, surviving the near-collapse of its parent tour operator Thomas Cook in 2011 only to face persistent rumours of its impending disposal, initially as part of a fire sale and then as a key element of the firm's recovery plan. Elsewhere, the insatiable rise of low-cost carriers (LCCs) led to a drastic erosion in the airline's traditional 'bucket-and-spade' charter routes and marginalised its network to the edges of Europe and North Africa. Here, a spate of terrorist attacks, combined with social and political unrest, in countries such as Egypt, Tunisia and Turkey have had significant financial repercussions, costing the Thomas Cook Group approximately £25m in 2015 alone. This has been further compounded

by the fall in popularity of package holidays – once the carrier's bread and butter – and, more recently, by the UK's decision to leave the European Union.

The airline is tackling these challenges head-on, reinventing itself to meet the needs of the rapidly evolving market. "We want to be the world's best-loved leisure airline," Chief Airlines Officer Thomas Cook Group and Managing Director of Thomas Cook Airlines UK Christoph Debus remarked. "We want to offer customers unique quality and value to create loyal customers, who come back to us year after year".

### **A Tale of Mergers**

Thomas Cook is arguably one of the most recognisable names in travel, harking back to 1841 when it started out offering one-day rail excursions. The carrier is decidedly more recent, though its evolution is rather convoluted.

Thomas Cook Group's first foray into the airline business came in 1996 when it purchased rival travel firm Sunworld and its in-house carrier Airworld. This was the first of several mergers and acquisitions that led to a widespread restructuring of the UK's charter sector.

Flying Colours Leisure Group, and its airline of the same name, was next to



After enduring an extremely turbulent and uncertain period, Thomas Cook Airlines has emerged leaner, fitter and better suited to meet the changing demands of the market.

**Lee Cross** reports.

# Sunny



be swallowed up with the Airworld brand disappearing at the end of the 1998 summer season as its assets were consolidated under the Flying Colours banner.

Barely a year later, Thomas Cook invested again, this time merging with the Carlson Leisure Group. The deal created a new \$40bn travel group and brought another two carriers into the mix – Caledonian Airways and its budget offshoot Peach Air. With little value to be had by retaining the separate airline brands, Thomas Cook consolidated its acquisitions into a new, single identity – JMC Air (the name derived from the initials of Thomas Cook's son, John Mason Cook) – in March 2000.

Three years later, the carrier was revamped again, this time to Thomas Cook Airlines as its parent moved to capitalise on the strength of the travel brand. The final piece of the

puzzle came in 2008 when the carrier absorbed MyTravel Airways (and adopted its 'Kestrel' radio callsign that remains in use today), acquired the previous year as part of the merger with MyTravel Group.

Thomas Cook Airlines' non-organic development meant growth had been rapid – by this stage the carrier had a sizeable fleet including Airbus A320s, A321s, A330s, Boeing 757s and 767s. But it had also left the airline, and its parent, ill-suited to cope with the evolving market and, by 2011, the group's debts were estimated to be almost £900m. Under the stewardship of new CEO Harriet Green, Thomas Cook embarked

*Thomas Cook's recent reorganisation included significant changes to its combined fleet. Recognising the considerable operational savings that could be had by upgrading and harmonising its 71-strong narrowbody fleet around a common type, the group placed a firm order with Airbus for 12 new-build A321s.*

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**"We want to be the world's best-loved leisure airline"**

Managing Director of Thomas Cook Airlines UK, **Christoph Debus**

on a bold turnaround plan aimed at "putting our business back on a firm trajectory of profitable growth". For the airline division, this included retiring four 757s as their leases expired, reducing the fleet from 35 to 31 aircraft.

In March 2013, its parent announced details of another reorganisation of its aviation assets, merging its four constituent carriers – Thomas Cook Airlines UK, Scandinavia and Belgium, and Condor of Germany – into a single division.

The move was intended to deliver sizeable financial savings across the airlines by combining assets and expertise. It drew upon the operating model trialled by Frankfurt-based subsidiary Condor, which had moved away from exclusively serving its tour-operator parent to having its own independent network-planning system.

More significantly, it had also started offering seat-only fares.

"We have many synergies >>

# Side Up





Thomas Cook Airlines developed largely through mergers and acquisitions. A deal with the Carlson Leisure Group led to the creation of JMC Air in March 2000. Three years later, the carrier absorbed another of its rivals, MyTravel Airways.

The airline's expansion has been rapid – this year it has added 150,000 seats across its ten UK bases and launched 15 new routes.

with all our airlines and take the best of each, and see how we can replicate them to improve our overall offering for our customers", Debus said of the merger. "This can range from maintenance processes to joint procurement, to cabin-crew training, to talent development, or ground operations ways of working, for example centralised load sheets".

Perhaps the best demonstration of this flexibility is with its aircraft. The group regularly moves its assets around to suit seasonal peaks and troughs, with its 11 A330s shared between the UK and Scandinavian offshoots. This is also the case with its remaining

757-300s and 767s, which are transferred between Manchester and Frankfurt as demand dictates.

## Harmonising and Innovating

While Thomas Cook was reorganising its airlines, changes were also afoot with the equipment. Recognising the significant operational savings that could be had by upgrading and harmonising its 71-strong narrowbody fleet around a common type, the group placed a firm order with Airbus for 12 new-build A321s, the first element of its five-year rationalisation programme.

The first Sharklet-equipped example, G-TCDC (c/n 5872), was delivered in December 2013 resplendent in the group's new 'Sunny Heart' livery. The company rebrand had been officially unveiled by Green just two months before, under what the CEO described as "a renewed promise to our customers, our people and suppliers". She added the new logo would make it easier to "understand the full strength and end-to-end value of the entire Thomas Cook Group".

The carrier took delivery of a further five A321s in time for the 2014 summer season, with the remaining examples following over the next two years, increasing its fleet to 25.

Thomas Cook also took the opportunity to upgrade its onboard product with a fresh cabin interior. This included a new Premium Economy offering, introduced on its widebody A330s at the start of the 2015 summer season and featuring more

spacious seating set at a 35in (88.9cm) pitch, along with amenity kits, fine dining and complimentary drinks and snacks.

Commenting on the cabin modernisation, Debus remarked: "In the UK we have spent over £100m in the last couple of years refurbishing our cabins. We now offer an amazing premium-class, long-haul product with a new onboard menu offering high-quality James Martin meals and a pre-order, duty-free service called 'Airshoppen', which is delivered straight to the aircraft for outbound and inbound legs. Our seats have been transformed to offer more pitch and leg room and our IFE [in-flight entertainment] is state-of-the-art. There are many more innovations to come because we are constantly looking to see how we can offer more to our customers".

With its narrowbody fleet consolidation well under way, the airline embarked on a similar project for its long-haul aircraft. This included a ground-breaking three-year lease agreement with AirTanker for an A330-200 signed in June 2014. The jet was drawn from the latter's "surge" fleet, acquired as part of the Ministry of Defence's Future Strategic Tanker Aircraft programme but in addition to the core inventory of eight examples flown on behalf of the Royal Air Force and therefore available for long-term commercial use. For AirTanker, this meant the handover process was rather convoluted, requiring the A330 to be demilitarised and then recon-



## Thomas Cook Airlines UK

<b>IATA</b>	MT
<b>ICAO</b>	TCX
<b>Callsign</b>	Kestrel
<b>Fleet Size</b>	36*
<b>Destinations</b>	39 short- to medium-haul 11 long-haul
<b>Headquarters</b>	Manchester, UK
<b>Staff</b>	2,500
<b>Website</b>	thomascookairlines.com
*base fleet, excluding short-term and seasonal leases	







**"[Boston and Los Angeles] are the routes that signal our new direction the best"**

Managing Director of Thomas Cook Airlines UK, **Christoph Debus**

figured into a 321-seat all-Economy layout. It was, however, an arrangement that worked well for both parties – Thomas Cook has since taken delivery of a second leased example under a similar deal.

Elsewhere, two A330-200s were acquired from Portuguese operator Hi Fly to provide cover while the carrier's own aircraft were undergoing an £11.5m refurbishment.

### Long-Haul Expansion

One of the most significant elements of Thomas Cook's restructuring was its decision to establish long-haul hubs in Manchester and Frankfurt (operated via Condor). For the British division, this meant it could offer passengers the option of connecting via feeder services, a first for the airline and an important statement of intent about its new direction.

Notably, while the nature of its operations had changed, the carrier's focus remained initially on the leisure market. Services began in earnest on November 10, 2013 with the introduction of a weekly link to St Lucia. This was followed on December 19 by a similar service to Antigua, both of which continued on to Barbados.

North American expansion came

*The Boeing 757-200 was once the backbone of the Thomas Cook fleet, but the type has given way to the more modern and efficient Airbus A321s under the carrier's five-year rationalisation programme.*

AIRTEAMIMAGES.COM/  
ALEX FILIPPOPOULOS

in the form of thrice-weekly flights to Orlando International and a weekly rotation to Las Vegas, launched in spring 2014.

Though Thomas Cook already had a presence in Florida, the addition of a Miami service on May 2, 2015 seemed a natural choice as the airline moved to take advantage of the increasing number of holidaymakers looking to join Caribbean cruises. It was, however, the introduction of a direct link from Manchester to New York/John F Kennedy a day later that raised eyebrows, putting what had been a predominantly leisure carrier into direct competition with US majors American Airlines and Delta. Many observers suggested this was, perhaps, a step too far, but it has proved to be more than a flash in the pan with the service

continuing to operate daily today.

The addition of Boston and Los Angeles last year increased the carrier's long-haul network from Manchester to 15 destinations, including six to the US.

"These are the routes that signal our new direction the best," Debus said.

"They complement our existing services to Orlando and Las Vegas, making us the biggest carrier to the US outside of London. Sales are positive both inbound to the UK and outbound to the US and we increased our frequencies for summer 2017".

Notably, Thomas Cook's long-haul network has been strengthened considerably by co-operation. Passengers are now able to connect via Manchester to domestic destinations with Flybe, and to points across mainland Europe with SAS Scandinavian >>

*While the airline has phased out its Boeing 757-200s, its five -300s remain in service and are regularly transferred between hubs at Manchester and Frankfurt as demand dictates.*

AVIATION IMAGE NETWORK/  
SIMON GREGORY





Airlines and Lufthansa. This is also the case on the other side the Atlantic, where travellers can use any of seven partners, including Alaska Airlines and Canadian carrier WestJet, to reach up to 90 cities not currently served directly by Thomas Cook.

Reflecting on the success of the North West England hub, Debus remarked: "We are continuing to build on our direct flights from Manchester to boost both business and tourism in the North of England. No airline has done as much as us to support the region".

He makes a valid point. Thomas Cook has added more services from Manchester than any other airport on its network and, in the past two years, has reported a 25% increase in passenger traffic at the facility. But the carrier is not resting on its laurels – it introduced a twice-weekly service to San Francisco on May 14, flying in

competition against Virgin Atlantic, which launched the same route two months earlier and plans to add a direct link to Cape Town this winter.

The partnership with Manchester has been a fruitful one, so much so that Thomas Cook signed a five-year agreement with owner Manchester Airports Group (MAG) to operate from sister facility London/Stansted.

Long-haul services from the capital to Orlando, Cancun and Las Vegas are complemented by 19 short- and medium-haul routes – flown by



ABOVE LEFT AND BELOW •  
*The carrier's overhaul has also brought major improvements to its onboard offering. A new Premium Economy product, rolled out across the widebody Airbus A330 fleet in 2015, includes more spacious seating, along with amenity kits, fine dining and complimentary drinks and snacks.*

THOMAS COOK AIRLINES

*Combining its four constituent carriers – Thomas Cook Airlines UK, Scandinavia and Belgium, and Condor of Germany – into a single division has delivered sizeable financial savings across the group by combining assets and expertise. Synergies include joint procurement, maintenance processes and centralised training functions for pilots and cabin crew.*

THOMAS COOK AIRLINES





**“We’re developing a network that constantly surprises our customers...”**

Managing Director of Thomas Cook Airlines UK, **Christoph Debus**

two based A321s – to popular leisure destinations around Europe and the Mediterranean.

Elsewhere in London, the carrier added a thrice-weekly service between Gatwick and Cape Town last December. It was a bold move, but Debus explained: “We’re developing a network that constantly surprises our customers in a great way and quite often surprises the market place.”

While the carrier has undertaken significant changes to its operations, it continues to maintain a presence at regional airports across the UK. This includes Glasgow, linked to 20 destinations including Las Vegas and Cancun, Belfast International Airport and Birmingham where Thomas Cook has a significant presence.

Newcastle celebrated the arrival of two based A321s in 2014 and has never looked back, with new routes to Almeria and Paphos expanding its network to 23 for the summer season. Elsewhere, Thomas Cook also offers a sizeable choice of destinations from both Bristol and Cardiff, despite the two airports lying barely 25 miles (40km) apart.

As it did with its long-haul services from Manchester, the carrier is

*The carrier has developed a sizeable presence in the UK, flying from a host of regional airports, including Belfast, Bristol, Birmingham, Glasgow and Newcastle in addition to its main hub at Manchester.*

AIRTEAMIMAGES.COM/  
SIMONE CIARALLI

*Thomas Cook’s yellow, grey and silver ‘Sunny Heart’ livery was adopted in December 2013 as part of a wider company rebrand.*

BOAC AVIATION/  
MATTHEW REYNOLDS

#### Current Fleet

Type	Number	Comments
Airbus A320	5	Five examples on short-term lease from Smart Lynx (2) and Avion Express (3)
Airbus A321	25	Four examples on short-term lease from Smart Lynx (1) and Avion Express (3)
Airbus A330	8	Two examples on long-term lease from AirTanker
Boeing 757-300	5	
Boeing 767-300	2	

**\*\*Data correct as of June 2017**

committed to frequently reviewing its network and adjusts destinations and frequencies to suit demand. “We will continue to develop our existing and imminent routes and will look to develop more opportunities as they arise,” Debus remarked.

The carrier is also not afraid to tackle competition head on, as illustrated by its various services from Luton and Stansted, traditional strongholds of rivals easyJet, Monarch and Ryanair.

This summer, Thomas Cook has added 150,000 seats across its ten UK bases and launched 15 new routes, including those from Luton. “We’ve built a really great programme for summer 2017,” Debus noted. “One that meets the changing demands of UK holidaymakers.”

>>





**Closer co-operation between Thomas Cook Airlines and sister carrier Condor means aircraft are frequently shifted back and forth between the two.**

BOAC AVIATION/  
BRIAN T RICHARDS



### What Next?

Though the summer season has only just kicked off, Thomas Cook has already outlined next year's schedule. "We know that customers want to be able to fly from their local airports, so this is what we will offer," Debus said. This includes another 17 new routes being added across its network, and increased frequencies on existing services from various regional bases including Newcastle and Belfast.

The carrier's change in fortunes has been reflected not only in increased passenger numbers – up by 3.6% to

more than 6.6 million for last year – but also in the numerous awards it has picked up. Having been voted the 'worst short-haul airline' by consumer watchdog *Which?* in 2011, Thomas Cook Airlines UK was named the World's Leading Charter Airline for a second year running at the World Travel Awards last December. The carrier also ranked top in the Customer Service of the Year Awards and scooped the prize for Europe's Leading Charter Airline.

It's an impressive turnaround, but Debus remains coy about the carrier's

success: "We're on a very customer focused journey to deliver the best service, to the best leisure destinations, on the best aircraft and awards like this confirm that, while we've still got lots to do, the progress we're making so far is excellent."

Since moving away from the route restrictions imposed by its tour operator, Thomas Cook has seen a rapid rise in seat-only sales, now accounting for around 50% of the short- and medium-haul capacity and increasing to more than 90% for flights to the US.

Thomas Cook's continued expansion, heavy investment in product and fleet, and its willingness to tackle legacy and low-cost competitors head-on, have left the carrier better suited than ever before to meet changing market demands. But its turnaround remains a work in progress and there is still much to do.

"Our long-haul expansion and £100 million upgrade to our onboard product has proved successful enough for us to add more new routes," Debus concluded. "But we must continue to focus on our product and service which, in turn, will make us more resilient in the long term." **AVI**

The author would like to thank Ben Todd and Chloe Milner from Thomas Cook's press team for their assistance with this article.

**Thomas Cook's continued expansion, heavy investment in product and fleet, and its willingness to tackle legacy and low-cost competitors head-on, have left the carrier better suited than ever before to meet changing market demands.**

BOAC AVIATION/  
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*Acronyms and abbreviations have become an intrinsic part of business speak. In the commercial aviation business their usage has become unavoidable and in the following table we try to guide you through some of those most commonly-used examples in the pages of Airliner World. This list will be regularly updated.*

AAIB	Air Accidents Investigation Branch (UK)
ACAS	Airborne Collision-Avoidance System
ADR	Accident Data Recorder
ALPA	Air Line Pilots Association (US)
ANS	Airborne Navigation System
APU	Auxiliary Power Unit
ATC	Air Traffic Control
ATP	Advanced Turbo-Prop (BAe)
ATS	Air Traffic Service
BAe	British Aerospace (now renamed BAE Systems)
CAA	Civil Aviation Authority (UK)
CDA	Continuous Descent Approach
CEO	Chief Executive Officer
CIS	Commonwealth of Independent States (formerly Soviet Union)
c/n	Construction number
combi	Aircraft that routinely carry passengers and cargo on the main deck at the same time
CVR	Cockpit Voice Recorder
dB	Decibel
DfT	Department for Transport (UK)
DME	Distance-Measuring Equipment
EADS	European Aeronautic Defence and Space Company

EASA	European Aviation Safety Agency
ERAA	European Regions Airline Association
EROPS	Extended-Range OperationS
ETOPS	Extended-range Twin-engine OperationS
FAA	Federal Aviation Administration (US)
FAI	Fédération Aéronautique Internationale (France)
FAR	Federal Aviation Regulations (US)
FBO	Fixed Base Operator
FDR	Flight Data Recorder
FL	Flight Level (usually expressed in hundreds of feet)
FOD	Foreign Object Damage
GA	General Aviation
GAPAN	Guild of Air Pilots And Navigators (UK)
GDP	Gross Domestic Product
GE	General Electric
GECAS	GE Capital Aviation Services
GMT	Greenwich Mean Time
GNS	Global Navigation System
GPS	Global Positioning System
GPU	Ground Power Unit
IACA	International Air Carrier Association
IAP	International Airport
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFALPA	International Federation of Air Line Pilots Associations
IFR	Instrument Flight Rules
ILFC	International Lease Finance Corporation
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INS	Inertial Navigation System
JAA	Joint Aviation Authorities (European)
LCC	Low-Cost Carrier
LCD	Liquid Crystal Display

LED	Light-Emitting Diode
localiser	Steering guidance element of an ILS system
LORAN	Long Range Aid to Navigation
MD	Managing Director
MLS	Microwave Landing System
MLW	Maximum Landing Weight
MoD	Ministry of Defence (UK)
MoU	Memorandum of Understanding
MRO	Maintenance, Repair and Overhaul
MTOW	Maximum Take-Off Weight
NASA	National Aeronautics and Space Administration (US)
NATO	North Atlantic Treaty Organization
NBAA	National Business Aircraft Association (US)
OFT	Office of Fair Trading (UK)
PAPI	Precision Approach Path Indicator
PAR	Precision Approach Radar
pax	Passenger
P&W	Pratt & Whitney
PPL	Private Pilot's Licence
PR	Public Relations
RFP	Request for Proposals
RVR	Runway Visual Range
SARS	Severe Acute Respiratory Syndrome
SID	Standard Instrument Departure
STAR	Standard Terminal Arrival Route
STOL	Short Take-Off & Landing
TCAS	Traffic alert and Collision-Avoidance System
TWR	Tower – airport control tower
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VOR	VHF omni-directional range (radio beacons)

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