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WORLDWIDE AVIATION MARKETING AND MANAGEMENT SERVICE

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Newsletter

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Market Comment

"China Joins Big Jet Club!" read a red curtain with gold trimming which veiled the **COMAC – Commercial Aircraft Corporation of China** C919 before the official roll-out ceremony at Shanghai's **Pudong International Airport,** November 2. Senior Communist party leaders, employees and journalists watched as the C919 was wheeled out from layers of curtains to the sound of applause and patriotic songs. **Li Jiaxiang,** head of the **Civil Aviation Administration of China (CAAC),** said, "The air transportation industry of China cannot completely rely on imports. A great nation must have its own large commercial aircraft." China is promoting its aerospace industry as part of a broad push to rise into the ranks of advanced industrialized nations by 2020. China's President **Xi Jinping** congratulated **COMAC** while also urging careful preparation for the plane's maiden flight, according to the official ***Xinhua News Agency***.

Development of the C919 started in 2008 and the plane was designed to challenge **Airbus** and **Boeing** in the single-aisle trunkliner market. The first flight will take place in the second quarter of 2016, after a two year delay. **COMAC** chairman **Jin Zhuanglong** said the 158 to 174-seat C919 would be certified and delivered to launch-customer **Chengdu Airlines** in late 2018. **COMAC** set targets of capturing one third of the Chinese narrow-body market and one fifth of the global market by 2035. It will build between 20 and 50 C919s per year with annual production rising to 150 C919s and 50 ARJ21 regional aircraft by 2020. The manufacturer has sold 517 aircraft to nine Chinese airlines and a dozen aircraft leasing companies (including a token order by **GECAS**). China's **COMAC** next intends to build a widebody airliner with Russia's **United Aircraft Corp**., and the two could sign an accord by the end of this year. The partners eventually want to jointly develop a world-class engine as well. The early C919s will be powered by the **CFM** LEAP-1C engine, but the country wants to develop its own engine for the jet. To do this, China plans to consolidate its disparate aerospace engine industry into a single company. The **COMAC** ARJ21 regional jet was certificated recently and is scheduled to enter commercial service in December. That program is nearly 10 years behind schedule, which illustrate the problems China had in designing, developing and building a competitive airliner. Having learned from the ARJ21, it is expected that **COMAC** will know what it needs to know in order to put the C919 in service two years after its first flight.

Table of Contents

Market Comment 1

AIRCRAFT & ENGINE ORDERS
Airbus 2
Boeing 9
Regional 14
Order Changes 19
Leasing Companies 19
Engines 20

AVIATION BUSINESS
Airline News 21
Bankruptcy 23
Technical 24
Cargo Pallet 24
Military Market 25

AIRCRAFT DELIVERIES, SALES & LEASES
Airbus 27
Boeing 29
Regional Jet 31
Turboprop Aircraft 32
Antiques 33
Accidents & Safety 35

PUBLICATIONS & FORMS
Avmark Capabilities
Avmark Publication Samples
Current Avmark Publications
Publication Form

News of the **COMAC** C919 roll-out was welcomed by airline CEOs at the **Dubai Airshow**, who look forward to more competition in the airframe industry. Since much of the C919's technology is Western, they said they would consider buying Chinese airplanes. **Akbar Al Baker,** CEO of **Qatar Airways** said he would order Chinese airplanes if they were made to his exacting standards. "There is nothing wrong with buying Chinese. You use an iPhone, which is made in China. Designed by somebody else, but made in China. I think it would be good for this [**Boeing/Airbus**] monopoly to be broken," Mr. **Al Baker** said at the airshow. **Emirates** President **Tim Clark** said China, has the "human resource, the physical resource, and the wealth to do it," but the barriers for entry into the airline business are very high. "If the Chinese are going to do that, then it's a big catch up that's got to take place. I'm not saying that will not happen. But it is a very, very complex business to get into," Mr. **Clark** said. Even the heads of **IAG** and **Ryanair** said they would look at the C919. Analysts were more dismissive and said China currently lacks industrial experience and has unrealistic production goals. **Saj Ahmad,** chief analyst at **StrategicAero Research**, said, "The C919 is a stepping stone for Chinese aerospace experience and knowledge, but right now, it has zero impact on **Airbus** or **Boeing** and isn't a viable competitor. By the time they get the industrial knowhow, which could be [in] 50 years, **Airbus** and **Boeing** will long since have moved the game on. Realistically, China's quickest way to any remote semblance of parity is through cooperation and not head-to-head competition, because on the latter basis, they're always playing catch up." China is already assembling **Airbus** A320 Family aircraft and **Embraer** E-Jets from kits from Europe and Brazil. In the recent past, it built **McDonnell Douglas** MD-80s and **Embraer** ERJ-145s as well. **Boeing** said it would open its first Chinese plant to assemble single-aisle 737s soon. China has successfully designed and built turboprop airliners, but the safety records of those types are blemished at best, and it builds supersonic jet fighters. **AVMARK** believes the C919 and ARJ21 are not competitive with Western trunkliners and regional jets at this time, but China's next generation of airliners will be. At their peril, Europeans and Americans will underestimate China's technology gains, just as they did with Japan and South Korea in the past.

Airbus Orders

Airbus Sold 34 Widebody and One Single-Aisle Aircraft in October, which raised **Airbus'** total net bookings to 850 in 2015. This was more than the company's order target for the entire

year. The manufacturer delivered 49 jetliners from across its current production range. **China Aviation Supplies Holding Company (CAS)** firmed up a commitment for 30 A330-300s covered in a General Terms Agreement signed in at **Paris Airshow** in June. **Singapore Airlines** booked four more A350-900s when it launched the A350-900 Ultra-Long Range version for non-stop flights from Singapore to the U.S. **Aviation Capital Group** ordered its first A321neo, adding the new engine option aircraft to its backlog of 30 A320neos. So far this year, customers have purchased 39 current engine option (CEO) A319/A320/A321s, 687 NEO variants of the A319/A320/A321, 92 A330ceo and 25 A330neo jetliners; along with nine A350 XWBs. The A380 orderbook remained static at 317. **Airbus** sold 910 new jets, but customers cancelled 15 previous orders and switched 45 CEO single-aisle jets to A320neo Family aircraft.

Airbus Orders, Deliveries and Backlog October 2015

OCT ORD	OCT DEL	OCT CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-0-	80	80	-0-
			A319		
-0-	2	-0-	1,473	1,453	20
			A319neo		
-0-	-0-	-0-	49	-0-	49
			A320		
-0-	18	-0-	4,763	4,068	695
			A320neo		
-0-	-0-	-0-	3,282	-0-	3,282
			A321		
-0-	17	-0-	1,616	1,173	443
			A321neo		
1	-0-	-0-	977	-0-	977
			A330		
30	6	-0-	1,439	1,230	209
			A330neo		
-0-	-0-	-0-	145	-0-	145
			A350		
4	4	-0-	787	10	777
			A380		
-0-	2	-0-	317	173	144
This Month			**This Year**		**BL**
35	49	-0-	**850**	**495**	6,741

Airbus sold 16,121 aircraft and delivered 9,380 as of October 31, 2015. Sixty orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.

Airbus delivered 495 jetliners to 81 customers in the first 10 months of 2015. **Finnair** received its first A350-900 to become Europe's first operator of this aircraft type. **Airbus** came closer to its target of delivering 15 A350-900s in 2015 with the handover of two to **Qatar Airways** on 29-30 October, plus the third A350 to **Vietnam Airlines**. The first of three A330-300s was handed over to Indonesia's **Lion Air.** The A330s seat 440 passengers in a single-class layout. Two A380s were delivered during the month, bringing this year's total to 21. **Airbus'** backlog stood at 6,741 aircraft at the end of October, equaling approximately 10 years of production, and the airframer has booked 16,121 orders from across its jetliner families.

Airbus Won A321 Orders from Korea's Top Airlines, worth $6.8 billion at list prices. **Korean Air** ordered 30 A321neos, while **Asiana Airlines** ordered 25 A321neos. The first commitment was announced at **Paris Airshow,** and the second was revealed in February 2015. Both airlines are new customers for the type. The contracts were signed by **Airbus** CEO **Fabrice Bregier,** during French President **Francois Hollande's** visit to Seoul. **Korean Air** is buying 30 **Airbus** A321neo planes, worth around $3.7 billion ($123.3 million each) at list prices, and took options on another 20 jets. The catalogue price of the 25 A321neos for Korea's second biggest carrier, **Asiana**, is approximately $3.1 billion ($124 million each). Mr. **Bregier** said, "South Korea is an increasingly large and important market for us. It's a large domestic market [and] a sizeable transport hub for the rest of Asia."

Korean Air exclusively operated **Boeing** Next Generation 737 airliners before it decided to replace its 17 737-800s and 22 737-900/ERs with the new A321neos. They will be delivered between 2017 and 2025. **Airbus** and **Korean Air** are celebrating 40 years of **Airbus** operations by the airline, which began when its first A300B4 entered service in October 1975. **Korean** currently flies 29 A330s and 10 double-deck A380s. The flag carrier will operate the A321neo in a two-class configuration on regional services, including on longer sectors to South East Asia. The aircraft will be fitted with premium amenities, including wider seats in both classes and the latest in-flight entertainment and connectivity systems.

Singapore Airlines (SIA) was the launch customer for **Airbus'** new Ultra-Long Range A350-900ULR in October. Seven of **SIA's** 63 A350-900s will now be delivered with the capability to fly for up to 19 hours. The carrier also ordered four more A350-900s, raising its total firm A350 XWB orders to 67. The first A350-900ULR aircraft is scheduled for delivery in 2018. The Ultra-Long Range A350 will feature an increase to the fuel carrying capacity (from 141,000 liters to 165,000 liters), an increase in Maximum Take-Off Weight (MTOW) to 280 metric tons, plus aerodynamic improvements. The ULRs will be deployed on non-stop service to the U.S. West Coast, as well as to New York. The New York service will be the world's longest non-stop, commercial passenger route, at a distance of approximately 8,700 nautical miles, and a flight time of up to 19 hours. October 30, 2015, **Airbus** had sold 16 A350-800s, 596 A350-900s and 175 A390-100s 41 customers. **Singapore** is the largest customer for the A350 XWB in East Asia, and will take deliveries of the first of its 60 standard A350s in the first quarter of 2016.

Asiana Airlines' contract for 25 A321neo aircraft was signed at a special ceremony in Seoul by CEO **Kim Soo Cheon**, and **Fabrice Brégier**. A Letter of Intent for the A321s was announced in February 2015. The A321neos will seat 180 passengers in a two class layout, and will be operated on **Asiana's** regional services, as well as on selected domestic routes. The airline will make its engine decision at a later date. The A321neo will join the fleets of **Asiana,** and its low-cost subsidiary, **Air Busan**, from 2019 through 2025. The A321 will become the primary single-aisle type at both units. **Asiana Airlines** currently operates seven A320ceos and 26 A321ceos, 15 widebody A330-300s and four A380s. Meanwhile, **Air Busan** currently operates three A320ceos, seven A321ceos and five classic 737s on its domestic and regional services. With this order, the **Asiana Group** has firm orders for two more A380s, 30 A350 XWBs (due from 2017 to 2025), and 25 A321neos.

China Aviation Supplies Holding (CAS) signed a General Terms Agreement (GTA) with **Airbus** for 100 A320 Family aircraft, and the deal includes the firming of options for 30 A330s. The 130 jets were

valued at $17 billion at list prices. The contract was signed by **CAS** CEO **Li Hai** and **Airbus** CEO **Fabrice Brégier**, on October 29, during a meeting between Chinese premier **Li Keqiang** and German chancellor **Angela Merkel.** In July, **China Aviation Supplies Holding** signed a purchase agreement for 45 A330s, and a Memorandum of Understanding for another 30 options. **CAS** now has 75 A330s on order that will be finished at the **A330 Completion and Delivery Center (C&DC)** in Tianjin, China. Many of the A320s will be assembled and delivered at the **Tianjin Final Assembly Line.** According to the **Airbus *Global Market Forecast***, China is leading the world in passenger growth. China's domestic air traffic will become the world's largest within the next 10 years, and traffic volumes will quadruple in the next 20 years. In the next two decades, **Airbus** forecasts a demand in China for some 5,400 new passenger and freighter aircraft including 1,700 widebody aircraft like the A330, A350 and A380. Chinese operators fly more than 1,200 aircraft, including more than 1,000 A320 Family aircraft, over 160 A330 Family aircraft and five A380s as well as **Airbus** freighters and corporate jets. **China Aviation Supplies Holding Company (CAS)** is a state-owned enterprise managed by the state-owned **Assets Supervision and Administration Commission of the State Council**. Its predecessor, **China Aviation Supplies Company (CASC)** was founded in October 1980 upon the approval of the **State Import and Export Regulatory Commission** and was the first company established in the civil aviation industry. In October 2002, the civil aviation industry was restructured, and the **China Aviation Supplies Import & Export Group Corporation (CASGC)** was officially established. In December 2007, its name was changed to **China Aviation Supplies Holding Company**.

Airbus Will Increase the Single Aisle Family Production Rate to 60 aircraft a month in mid-2019, to match ongoing high demand for its A320 Family. Executive VP Program, **Didier Evrard**, said, "The growing single aisle demand and impressive backlog for both CEOs and NEOs led us to decide on a further ramp-up. I am confident that we have the highest skilled teams and the right solutions in place to gradually move to the highest production rate ever achieved in civil aviation history." **Airbus** made thorough studies on the readiness of the supply chain and its production sites to allow the ramp-up. Airbus will expand its capacity in Hamburg by adding another production line. It will also integrate cabin furnishing at the A320 Final Assembly Line in Toulouse, and thereby harmonizing the production process across all A320 Family Final Assembly Lines worldwide, the company said. With more than 4,300 orders received from an excess of 75 customers since its launch in 2010, the A320neo Family has captured almost 60 percent share of the market.

The International Airlines Group (IAG) firmed up options for two A330-200s, two A330-300s and 15 A320neos. This latest contract takes **IAG's** cumulative **Airbus** orders to nearly 470 aircraft. The two A330-200s will be assigned to **Iberia,** and the two A330-300s will be operated by **Aer Lingus. Aer Lingus'** -300s will enter service in 2016 and **Iberia's** aircraft will arrive in 2017 and 2018. The 15 converted A320neo options will be filled between 2018 and 2021, and can be used by any of the four airlines in the Group for fleet replacement, **IAG** said.

Vietjet Air, Vietnam's second largest carrier, firmed up purchase rights for 30 more A321s at the **Dubai Airshow.** The nine A321ceos and 21 A321neos will join the airline's current fleet of 26 A320s and three A321s. **Vietjet** took to the skies at the end of 2011 and now serves a network covering Vietnam and a growing number of destinations across Asia. Following today's announcement the airline has placed firm orders with **Airbus** for a total of 99 A320 Family aircraft. No delivery schedule was mentioned.

EasyJet Ordered 36 More A320 Aircraft in November, raising its total orders to 451. They bought six A320ceos and picked up 30 A320neo options. The aircraft will be delivered between 2018 and 2021, and fitted with the higher-density, 186-seat configuration. The carrier is taking another 30 purchase rights on A320neos to replace those being exercised, the airline said. The aircraft are catalogue priced at $3.2 billion ($88.89 million each). **CFM International** will supply CFM56 and LEAP-1A engines for all 36 jets. **EasyJet** is the world's fourth biggest customers for the A320ceo Family having ordered 321, and it also bought 130 A320neos. The airline celebrated its 20th anniversary in April 2015, and it took delivery of its 250th A320ceo. **EasyJet** flies on more than 750 routes to over 130 airports across 31 countries. The low-cost carrier took delivery of its first **Airbus** aircraft, an A319, in September 2003, and has received one new Airbus every 16 days on average since then.

No A320neo for the 29th Dubai Air Show. The re-engined A320 was not debuted at the **Paris Airshow** either and it has not yet been seen by the general public. Apparently, with more than 4,300 firm NEO orders, **Airbus** does not feel the need to gin up the public's interest. **Airbus** currently has four NEOs flying and the manufacturer is scheduled to deliver the first production PW1100G-powered A320neo to **Qatar Airways** before the end of this year. The **CFM** LEAP-1A powered NEO will be certificated in early 2016 and delivered shortly after that.

Airbus Sold an ACJ319neo to a client of **K5 Aviation,** Germany, at **Dubai Airshow. K5** will operate and manage the private jet. **Airbus** has sold six ACJ320neo Family aircraft this year. Many of the sales are repeat orders from existing customers, highlighting the appeal of the family. **K5 Aviation** already manages three ACJ319s that are offered for VVIP charter exclusively through **Vertis Aviation**. **28 East,** a company jointly owned by **K5** and **Vertis Aviation,** managed the aircraft acquisition. The ACJ319neo will be delivered "green" in the second quarter of 2019, and the engine type and cabin outfitter have yet to be selected. "Clients already enjoy the big comfort of our aircraft which affords plenty of space for them to move around, relax and work and arrive refreshed on up to 13 hour flights," said **K5 Aviation** CEO **Erik Scheidt**. "The extra range of the ACJ319neo will enable us to offer longer flights and more city-pairs," he added. The ACJneo Family offers features such as by fly-by-wire controls, Category 3B automatic landing, and options such as a runway overrun protection system (ROPS).

The Middle East is an Important Market for the New ACJneo Family, where private jets are desired by companies, billionaires and governments. **Airbus** offers the ACJ319neo, which is designed to fly eight passengers for 6,750nm/12,500 km, or approximately 15 hours' flying time, and the ACJ320neo which will fly 25 passengers for 6,000nm/11,100 km, or more than 13 hours in the air. The first ACJ320neo will be ready for delivery in the fourth quarter of 2018, and the ACJ319neo is due in the second quarter of 2019. **Airbus** has already sold six ACJneo Family, including an ACJ320neo to **Acropolis Aviation,** U.K., three ACJ320neos to an un-named private customer, one ACJ319 for **Alpha Star Aviation,** Saudi Arabia, and most recently, the ACJ319neo to **K5 Aviation.**

TAP Portugal signed a firm order for 14 A330-900neos, 15 A320neos and 24 A321neos after the **Dubai Airshow**. As part of the agreement, **TAP Portugal** replaced its previous order of 12 A350-900s with the A330-900neos. The aircraft are part of a fleet renewal plan announced by the airline's new majority owner **Atlantic Gateway** in June. CEO **Fernando Pinto,** said the A350 was more airplane than **TAP** needed and the A330neo was a better fit. He also said he wanted the new long-range A321LR for 6-7 hour flights to New York, Northern Brazil and Eastern Europe. **TAP Portugal** is an all-**Airbus**

customer, and currently operates 43 A320 Family aircraft, delivered between 1997 and 2009, 14 2007-2008 era A330-200s, and four 20-year old A350-300s. The A330neo program was launched in July 2014, and the first aircraft will be delivered in the fourth quarter of 2017. The first A320neo is due early next year, and the A321LR will not be ready until 2019. It is probable that **TAP** will have to wait several years for its new narrowbodies. **Atlantic Gateway** is a partnership between **Jet-Blue** and **AZUL Linhas Aéreas Brasileiras** founder **David Neeleman** (49.9 percent) and Portuguese bus company, **Barraqueiro Group's** owner **Humberto Pedrosa** (50.1 percent). It bought 61 percent of **TAP Portugal** from the **Portuguese Government** on June 24, 2015, and the sale was finally approved by the government on November 12. This gave **TAP** the freedom to buy the new Airbuses on the same day. Treasury Secretary **Isabel Castelo Branco** said, "The agreement for the conclusion of the sale allows [them] to hasten the capitalization operation, with €150 million injected immediately, with another €120 million to be paid until June 2016." She said that the investment was needed urgently. Under the deal, **Atlantic Gateway** had up to one year to put €270 million into the company which has debt of over €1 billion. The deal could be challenged by the incoming Socialist government and the state would not be penalized if the sale is reversed. A current cabinet minister **Luis Marques Guedes** warned against the "imminent collapse at the treasury" which made the final approval of the deal a pressing matter of state. The Socialists want to keep 51 percent of **TAP**, which could kill the **Atlantic Gateway** purchase and quash the latest **Airbus** order.

Garuda Indonesia will choose between the **Airbus** A350 and **Boeing** 787 by the end of the year. At the **Paris Airshow,** Indonesia's flag carrier signed letters of intent for both types, but will go ahead with only one order. The deal is potentially worth $9 billion for the winner. **Garuda** will use the 30 new jets to replace the 23 leased **Airbus** A330s that it uses on medium- and long-haul routes within Asia, and potentially to additional points in Europe. The airline made a net profit of $27.7 million in the first half of 2015, a dramatic improvement over the $203 million loss a year earlier.

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The A320neo Received Type Certification from the European Aviation Safety Agency (EASA) and the Federal Aviation Administration (FAA) on November 24, 2015. The aircraft is powered by **Pratt & Whitney** Pure Power PW1100G-JM engines. The A320neo successfully completed a rigorous program of certification which tested its airframe and systems well beyond their design limits to ensure the aircraft successfully met all airworthiness criteria, **Airbus** said. The three flight test PW1100G-powered aircraft accumulated over 1,070 flight hours in some 350 flights. Three hundred hours were completed in an airline-like environment to ensure operational maturity at entry into service. **Fabrice Brégier, Airbus** President and CEO, said, "This double seal of approval represents a great achievement for **Airbus.** It recognizes the hard work performed by all the teams at **Airbus** and **Pratt & Whitney**. It demonstrates the A320neo is meeting all requirements." The A320neo is now cleared for its first delivery to **Qatar Airways**. The **CFM**-engined A320neo will be certified in the coming months, and the A321neo and A319neo with both engines variants will follow in the next few years.

Airbus Sales Chief John Leahy told the press at the **Dubai Air Show** that two potential airline customers are actively looking at ordering the double-decker A380. One is interested in as many as 20 aircraft and the other wants around 10 or 12. The European planemaker hopes to make its first sale since **Amedeo** bought 20 A380s in February 2014. The production backlog has been shrinking, the number of white-tail A380s is growing, and analysts doubt the long-term viability of the flagship model. Mr. **Leahy** said the orders could be secured this year, but they could equally be signed in 2016. When asked

about future sales, **Airbus** CEO **Fabrice Bregier** said, "I think so, yes... and if it slips into next year this is not a drama. I think we will have some new customers." Further, the A380 is looking particularly competitive because of weaker oil prices.

No A380 Orders Were Expected to be announced at the biennial **Dubai Airshow**, where **Emirates** bought 50 at the last show in 2013. It is rumored that **Royal Air Maroc** and **Saudi Arabian Airlines** are interested in the A380, which is list priced at $428 million, but **John Leahy** declined to comment on potential customers. **Emirates** President **Tim Clark** said at the show that he will not buy any more A380s unless **Airbus** commits to a re-engined and perhaps, stretched, NEO version. **Emirates** is the biggest customer with 140 A380s on order or in service, and Mr. **Clark** said the Dubai flag carrier could potentially take 200 A380neos, which could offer significantly better fuel economy. Mr. **Bregier** said, "It is too early to say. We can stretch this aircraft; the problem is to see whether we would have a sensible market for that. I am pretty sure we will stretch the aircraft. I have said 'one day' and this 'one day' is perhaps after the launch of the so-called A380neo," indicating the NEO and the stretched A380 are two different programs. Mr. **Clark** has previously urged **Airbus** to launch the A380neo and downplayed reports that the upgrade could include a decision to stretch the plane. Mr. **Bregier** said, "A stretch is feasible at marginal cost, but it depends on our market appreciation and so far the challenge is to convince new airlines that they can profitably increase their market share with an aircraft which is, much bigger than what they are used to fly."

Qatar Airways CEO **Akbar Al Baker** said he would be interested in a "very small number" of A380neos to replace its current generation of superjumbos. Mr. **Al Baker** said, "If **Airbus** produces a (plane) which is head and shoulders above what they produce today we would look

Emirates "Gets No Respect." Boeing said it will not change its stretched 787-10 Dreamliner even though **Emirates** asked for better performance in hot climates. At **Dubai Airshow, Randy Tinseth,** VP of Marketing at **Boeing Commercial Airplanes**, said, "The plan is not to change the aircraft, we really like what we have." He said the 787-10 will be the "most efficient airplane" that **Boeing** has ever built when it comes into service in 2018. **Emirates** President, **Tim Clark,** does not think the 787-10 can carry heavy passenger and cargo loads for more than eight hours flying time according to its published performance in hot climates. However, he also said 85 percent of **Emirates'** flights were not longer than eight hours. The 787-10 was launched at the 2013 **Paris Airshow**, and has won 146 orders to date. **Fabrice Brégier**, President and CEO of **Airbus,** said at the **Dubai Airshow,** "The A350-900 has much more flexibility when you want to take off in a very hot and humid condition." Mr. **Brégier** added that **Qatar Airways** bought the A350 [43 -900s and 37 -1000s] and that the climate between Doha and Dubai was "not that different". "If it works for **Qatar Airways,** I suspect that it will also work for **Emirates.** It is not much hotter here," he said. He essentially brushed off requests by **Emirates** for improvements to the A350 to better cope with hot and humid conditions. **Emirates** said it would defer until 2016, a decision on whether to buy up to 100 A350-900s or 787-10s, depending on which manufacturer would meet its requirements. Apparently neither is willing so far. In June 2014, **Emirates** dropped its firm orders for 70 A350 XWBs and purchased 150 **Boeing** 777X widebodies. At the time, Mr. **Clark** said the A350 probably had a future in the **Emirates** fleet. The first 777X aircraft will be ready for service in 2020, and **Airbus** chief salesman, **John Leahy** said the A350 production line was mostly sold out until 2021. The **Airbus** A350 offers up to 14 hours range. Ten of them are currently flying and **Airbus** has firm orders for another 586 aircraft. Mr. **Clark** said more A350s need to enter service before it can make a choice. The 787-10 is still on the drawing boards.

at them for replacements." The new aircraft would have to perform better on range, capacity and fuel burn for it to be interesting, he said.

Boeing Orders

Boeing Sold 32 737s and 27 787s in October. Oman Air (SAOC) ordered 20 737 MAX aircraft and cancelled six of its Next Generation 737 orders. **GOL Airlines** picked up nine 737 MAX and also dropped nine 737-800 orders. An **Unidentified Customer** ordered two 737 MAX airplanes, and two more 737 NGs were cancelled. **Boeing Business Jet/VIP Customer** purchased one VIP 737 MAX. **Norwegian** placed its first order for the 787-9 when it contracted for 19 of the Dreamliners. **EL AL Israel Airlines** officially signed a contract for three 787-9 as part of a deal for up to nine firm orders and 13 options. **Qantas Airways** ordered five 787-9s, and switched three of its 787-8 orders for 787-9s, for a total of eight. As of October 31, **Boeing** had 566 new orders, having lost 77 existing orders, including 47 737s, four 747s and 26 787s, resulting in 489 net orders.

EL AL Israel Airlines placed an order for up to nine 787 Dreamliners, valued at more than $2.2 billion ($244.4 million each) at current list prices. The transaction was announced on August 5 and three 787-9 orders were recorded on **Boeing's *Orders & Deliveries*** website in October. The remainder will be posted as further contractual requirements are finalized. The Israeli flag carrier reported in a stock market filing that it will purchase four 787-9s and five 787-8s while the manufacturer acknowledged firm orders for three jets. The airline also took options for up to seven 787-10s that can be converted to -8 and -9 variants if needed. If **EL AL** confirms an option, another option will be granted, raising the potential orders to 13. The carrier will also lease four 787-9s and two 787-8s from three leasing companies. The leases will run for 12 years with options to extend. The 787s will be used to replace their six 747-400s and seven 767-300ERs, which have an average fleet age of 20 years. The 787s will allow the airline to grow its long-haul fleet, to increase capacity and provides greater route flexibility to and from its hub at **Ben Gurion Airport**, Tel Aviv. **EL AL** has been an all-**Boeing** carrier since taking delivery of its first **Boeing** 707-458 in 1961 and it currently operates a fleet of 22 737s, seven 747s, seven 767s and six 777s. The carrier announced that it selected **Rolls Royce** Trent 1000 engines to power the Dream-liners and it may contract for the **Total-Care** long-term engine service support program. **EL AL** expects to receive its first leased 787 in 2017 and the ordered aircraft in 2019 and 2020. The optioned aircraft will be delivered from 2020 to December 31, 2023. Two of the ordered 787-8s will be sold and leased back with a fourth leasing firm. The final agreements are expected to be signed in November.

Qantas confirmed its August commitment to buy five 787-9 Dreamliners worth $1.3 billion ($244 million each at list price), and to convert its last three 787-8s into 787-9s. The 787-8s were to be delivered to its subsidiary, **Jetstar Airways.** The

In November, Virgin Australia Airlines was revealed to be a customer for four 737s previously listed as unidentified. **Virgin Australia** now has 57 773s on backlog and has ordered a total of 126 Next Generation and MAX 737s. The **AirBridge Cargo**, U.K., order for two 747-8F freighters was unveiled when the airline took delivery of the planes in mid-November. **BOC Aviation** ordered 737-800s and 11 737 MAX 8s and revealed it was the customer for one unidentified 737NG. **EVA Air** officially ordered 18 787-10s and two 777-300ERs. An **Unidentified Customer** ordered three 737s. Another **Unidentified Customer** bought two 737s. Two 737 orders were dropped. As of November 24, **Boeing** had 389 net new 737 orders, having lost 49 to cancellations.

Australian flag carrier said it intended to use 787-9s to overhaul its international fleet, replace its last five 747-400s, and be used to launch new international destinations. The first four of the new jets will be delivered in the 2017-2018 financial year, with the next four arriving in 2018-2019. The airline canceled 35 orders for the stretched 787-9 in 2012 during a period of financial losses, but it kept 14 orders for **GE**-powered 787-8s for **Jetstar**. Eleven of the **Jetstar** 787-8s were delivered and the last three are now to be taken up as 787-9s. **Qantas** still has 15 purchase options and 30 purchase rights up its sleeve, said CEO **Alan Joyce, "**and eventually the rest of the **Boeing** 747s and **Airbus** A330s will be replaced," he said. The 787s will be fitted with approximately 250 seats in a three-class cabin, and the planes will be fitted with the airline's latest Business Suite, premium economy and economy cabins, with a 3-3-3 seat layout.

Boeing October 2015 Orders, Deliveries

OCT ORD	OCT DEL	OCT CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			737		
-0-	39	-17	10,082	8,764	1,318
			737 MAX		
32	-0-	-0-	2,901	-0-	2,901
			747		
-0-	1	-0-	1,537	1,515	22
			767		
-0-	1	-0-	1,162	1,082	80
			777		
-0-	6	-0-	1,575	1,346	229
			777X		
-0-	-0-	-0-	306	-0-	306
			787		
27	11	-0-	1,124	340	784
This Month			**This Year**		**BL**
59	58	-17	**489**	**638**	5,640

Boeing sold 26,217 aircraft and delivered 20,577 as of October 31, 2015
The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s.
Sales totals include 77 cancellations.

Norwegian finalized an order for 19 787-9 Dreamliners, list priced at more than $5 billion ($263.2 million each). The order includes options for 10 more 787-9s, and the carrier looks to significantly grow its existing long-haul fleet into the next decade. This was the largest single order for 787-9s from a European airline to date. **Norwegian** currently operates eight 787-8s and has contracted to lease 11 787-9s from leasing companies – the first will be delivered in the second quarter of 2016. The low-cost, long-haul carrier is headquartered in Oslo, and it will operate 38 787s in the coming years. **Bjørn Kjos, Norwegian's** CEO, said, "After two years of operating low-cost, long-haul flights, our load factors have averaged in the nineties, which proves the demand for affordable flights between Europe and the U.S., and Europe and Asia. Future growth and competiveness in the long-haul market depends on the fuel-efficient, state-of-the-art 787 Dreamliner. Not least, the Dreamliner offers the best passenger experience." **Norwegian** serves more than 130 destinations across Europe, North Africa, the Middle East, the U.S., and Southeast Asia, with a fleet that includes 90 Next-Generation 737-800s and eight 787-8s, with another 37 737-800s and 100 737 MAXs on order.

Gol Linhas Aéreas Inteligentes (**GOL Airlines**) converted nine 737-800 orders into 737 MAX aircraft. The Brazilian carrier now has seven 737-800s in backlog while its 737 MAX orders have grown to 69.

Oman Air (SAOC) ordered 20 737 MAX aircraft in October. The re-engined 737 MAXs will be available from 2019. It cancelled six previously undisclosed Next Generation 737 orders when it bought the MAXs. The airline said it will acquire 10 737s directly from **Boeing** and the rest will be leased. **Oman Air** currently has one 737-900ER and five 787-8s on order. It took delivery of its first 787-8 in October. It also operates one 737-700, 18 737-800s and four 737-900ERs.

Boeing Announced Two Orders at the Dubai Airshow. **Jet Airways'** confirmed an order for 75 737 MAX 8 airplanes worth $8.25 billion ($110 million each) at list price. The order was already listed on **Boeing's** ***Orders & Deliveries webpage*** as placed by an **Unidentified Customer.** The deal includes conversions of 25 Next-Generation 737s to 737 MAX 8s, as well as options and purchase rights for an additional 50 aircraft, **Boeing** said. The order is the largest in **Jet Airways'** history. The now cancelled order for 25 737-800s was also listed as for an un-named customer. The carrier is 24 percent owned by **Etihad Airways**, and has a fleet of 115 aircraft, including 66 737NGs, four 777s, 11 A330s and 13 ATR 72-500s, as well as 10 787-8s on order. **Jet Airways** Chairman, **Naresh Goyal,** said Indian domestic airline passenger numbers are set to double over the next seven to eight years, hence the need to expand its fleet. The first 737 MAX will be delivered to launch customer **Southwest** in 2017.

Korean Air finalized its order of 30 737 MAXs and two additional 777-300ER jetliners in November. The deal was valued at nearly $4 billion at current list prices. The airline also has optioned 20 additional 737 MAXs as part of the contract, which was previously announced as a commitment during the **Paris Airshow** in June. **Korean Air** has become **Boeing's** newest 737 MAX customer, and now has 62 **Boeing** aircraft orders on backlog. The airline currently operates 91 **Boeing** passenger airplanes, including 40 737NGs, 15 747 and 37 777 models, and an all-**Boeing** cargo fleet of 15 747-400F, six 747-8F and five 777F freighters. **Korean Air's Aerospace Division** is a key partner on both the 747-8 and 787 programs, and supplies the distinctive raked wing-tips for each model. They are also one of two suppliers producing the new 737 MAX **Advanced Technology Winglet**. The first 737 MAX will be delivered to **Southwest** in 2017, and the 737 MAX has won 2,959 orders from 60 customers worldwide. **Korean Air** has configured its 777-300ERs with a seating capacity of 277 passengers in a three-class configuration, and the plane can fly up to 7,370 nautical miles (13,650 kilometers), on non-stop routes.

Etihad Airways exercised options for two **Boeing** 777F freighters, which were part of the airline's $67 billion order for 199 aircraft announced at the **Dubai Airshow** in 2013. The order was previously listed as unidentified, and was placed in March 2015. The 777Fs are due for delivery next year, and the aircraft will join **Etihad Cargo's** fleet of four A330-200Fs, three 777Fs, as well as one 747-400F and one 747-8F which are wet-leased from **Atlas Air.**

Boeing Business Jets announced the sale of four 737 MAX BBJ2s at the **National Business Aviation Association Convention and Exhibition** in Las Vegas, Nevada, in November. An **Undisclosed Customer** based in the Middle East bought three new BBJ MAX 8s, and an undisclosed Asian customer purchased one BBJ MAX 8. **David Longridge,** President, **Boeing Business Jets,** said, "2015 has been a really strong year for **Boeing Business Jets**. We have sold seven aircraft and we are not done yet. The

BBJ MAX is doing really well, with nine orders already on the books for both BBJ MAX 8s and BBJ MAX 9s." **Boeing Business Jets** will deliver 11 green aircraft to completion centers this year. Seven completed airplanes entered into service this year, including four BBJs and three BBJ 747-8s. Additionally, the first BBJ completed by **Sabena Technics**, managed by **Boeing Business Jets** as a turnkey airplane, will enter service this year. Mr. **Longridge** said, "We will deliver the airplane to a very happy customer ahead of schedule, under budget and with a cabin substantially lighter than contracted, allowing better performance and further range of operations." Customers have ordered 235 Boeing Business Jets and 213 aircraft have delivered since 1996 when the **BBJ** unit was formed.

BOC Aviation announced its order for 11 Next-Generation 737-800s and 11 737 MAX 8 airplanes in November. The order will be posted to **Boeing's *Orders and Deliveries*** website once finalized. In addition to today's announcement, **BOC Aviation** has ordered 117 737NGs, 50 737 MAXs and 16 777s. The company is a leading global aircraft leasing company with a portfolio of 253 owned and managed aircraft operated by 59 airlines worldwide in 29 countries. It has with commitments to acquire 203 aircraft, as of 30 September 2015.

The U.S. Export-Import Bank took a step closer to revival on October 26, 2015, as **Republicans** and **Democrats** forced a vote to renew the trade lender's charter. The rarely-used discharge petition bypassed **House Financial Services Committee** Chairman **Jeb Hensarling,** who wanted to permanently close **Ex-Im** and had blocked legislation to revive it. The **House** voted 246-177 to force a vote, which passed overwhelmingly 313 to 118 to renew the **Ex-Im Bank's** charter until September 30, 2019 with some governance reforms. Two days later, Senate Majority Leader **Mitch McConnell** blocked a vote on a stand-alone bill to re-authorize the bank and has shown no signs of supporting that move. A renewal bill could still be attached to a budget and debt limit deal that is being negotiated by Congressional leaders and the **White House**. The bank stopped operating July 30 after congress failed to reauthorize it. It helped finance U.S.-produced goods and services bought by foreign customers, but it currently cannot provide loan guarantees and trade insurance, causing some companies to lose export deals and move jobs overseas, supporters said. Conservative opponents of the trade bank accuse it of providing taxpayer-funded "corporate welfare" for wealthy corporations including **Boeing** and **General Electric.**

EVA Airways purchased 18 787-10 Dreamliners and two additional 777-300ER jetliners, valued at more than $7 billion at current list prices. This marks the largest single commercial airplane purchase in Taiwan aviation. The carrier will be one of the launch customers for the 787-10 and one of the first airlines to operate the newest Dreamliner. **EVA** will modernize its long-haul fleet and replace aging aircraft, and it plans to grow its fleet to more than 100 units by 2020. The new airplanes will allow the airline to expand into new markets, particularly in Southeast Asia, Oceania and North America. The airline currently operates 32 **Boeing** widebody airplanes, including three passenger 747-400s and 21 777-300ERs. Four of the 777s were delivered in 2005 and 2006 and another eight are more than five years old. The commitment has revived interest in the 787-10 which was launched in 2013 with 143 orders, but only three had been purchased since then. The 787-10 retails for $306.1 million before customary discounts. **EVA** is a subsidiary of the **Evergreen Line** container-shipping company, and it announced five 777 freighter orders at the **Paris Air Show** in June. **EVA** also has unfilled orders for 14 777-300ERs.

Far Eastern Air Transport will replace its fleet of four MD-82s and four MD-83s with 20 new 737-800s, COO **Tseng Chin-chih** told the press. Four 737s will be delivered per year and the first is due in May 2016. It will be leased from **Air Lease Corporation (ALC).** The last of the ageing **McDonnell Douglas** aircraft will be withdrawn from revenue service in 2020, when the last of the new 737s is handed over. **FEAT** was founded in 1957; it stopped flying on May 13, 2008, and filed for bankruptcy-protection. The airline restarted its services on April 18, 2011, and recently completed a court-ordered restructuring program. The Taiwanese airline serves 13 domestic and Chinese mainland destinations. It also has two 757-200s that are stored at **Taipei Songshan Airport**.

Boeing Completed the Power-On of the First 737 MAX 8 that is being pieced together on a new assembly line in Renton, Washington. The technicians activated the updated cockpit which features four 787-style multi-function displays which are supplied by **Rockwell Collins**. The 737 MAX electrical system supports the cockpit instruments, as well as the new electronically-controlled spoilers. **Boeing** plans to roll the first **CFM International** LEAP-1B engined 737 MAX 8 (Line Number 5602, SN 42554) off the assembly line on December 8, and first flight is scheduled for early next year. The first 737 MAX fuselage arrived in Renton in August, and the aircraft is now on the first position of the newly-established, third assembly line which is currently dedicated to 737 MAX flight test aircraft. After the flight test aircraft are completed, the line will be used to ramp up 737 production from 42 currently to 47 in 2017 and 52 in 2018. This 737 MAX will eventually be delivered to **Southwest Airlines.**

Boeing Forecasts Middle Eastern Airlines Will Need 3,180 New Airplanes over the next two decades. The planes are valued at an estimated $730 billion at list prices, and 70 percent of the demand is expected to come from rapid fleet expansion in the region. Single-aisle airplanes such as the 737 MAX will command the largest share of new deliveries, at approximately 1,410 airplanes. Twin-aisle aircraft will account for nearly half of the region's new airplanes, compared to 23 percent globally. **Boeing** said Middle Eastern airlines currently account for 30 percent of its total widebody backlog, and ties with Asia as the biggest purchaser of twin-aisle planes, even though its population is one tenth as large. "Traffic growth in the Middle East continues to grow at a healthy rate and is expected to grow 6.2 percent annually during the next 20 years," said **Randy Tinseth,** VP Marketing, **Boeing Commercial Airplanes**. "About 80 percent of the world's population lives within an eight-hour flight of the Arabian Gulf. This geographic position, coupled with diverse business strategies and investment in infrastructure is allowing carriers in the Middle East to aggregate traffic at their hubs and offer one-stop service between many city pairs that would not otherwise enjoy such direct itineraries." **Emirates, Qatar Airways** and **Etihad Airways** take advantage of "sixth freedom rights" in international aviation law that allows them to carry passengers from one geographic region through the carrier's home market into another area. Using their hubs in Dubai, Doha and Abu Dhabi, the Gulf carriers exploit their natural geographic advantage as the mid-point between Europe and Asia. **Emirates** is now the number one transporter of international passengers. Mr. **Tinseth** said, "There's no question they've built very successful business models around that, moving passengers from South and Southeast Asia into the Middle East and distributing them into other markets, primarily Europe. The majority of widebodies are going to carriers using sixth freedom rights, they've built very successful business models, and frankly we just don't see that changing." **Boeing** forecasted long-term global demand for 38,050 new airplanes, valued at $5.6 trillion.

Boeing Projects the Latin American Commercial Aviation Market will grow at one of the highest rates in the world over the next 20 years. The manufacturer forecasts the region's airlines will need

3,020 new airplanes valued at $350 billion. **Van Rex Gallard,** VP, Sales, Latin America, Africa and Caribbean, said, "The economies of Latin America and the Caribbean will grow faster than the rest of the world over the long term. This economic growth, coupled with rising incomes and new airline business models that give more people access to travel, is causing passenger traffic in the region to grow by 6 percent per year – well above the global rate. To accommodate that growth, we forecast that the region's fleets will more than double." Eighty three percent of the 3,020 new airplanes will be narrowbodies, spurred by intense regional traffic growth. The widebody fleet will require 340 new airplanes as regional carriers continue to compete more strongly on routes traditionally dominated by foreign operators, **Boeing** said. The Latin America and Caribbean region's fleets have an average age of less than 10 years, younger than the world average. Even so, nearly 60 percent of the current fleet will be replaced over the next two decades.

Cairo Aviation is to acquire six MC-21 aircraft from **Irkut Corporation,** a unit of Russia's **United Aircraft Corporation**. The Egyptian carrier's parent company, **KATO Investment** and the Russian manufacturer signed cooperation agreement at the **Dubai 2015 Airshow.** The deal includes four options for the 150 to 212-passenger MC-21. **Cairo Aviation** currently operates an all-Russian fleet of two Tu-204s and one Tu-204(F) on charter flights around the region. **KATO** may set up a Maintenance, Repair and Overhaul facility specializing in MC-21 aircraft at Dabaa, Al-Alamein, which is 184 kilometers west of Cairo. The MC-21 is intended to replace the **Tupolev** Tu-154M and older Tu-204/214s currently in service. The first ones are scheduled for delivery in 2017, and the first flights are expected in 2016. The list price of the 153-seat MC-21-200 is $72 million. To date, Russian airlines and lessors have ordered 207 MC-21s, and **Crecom Burj Resources,** Malaysia, ordered 50.

Boeing is considering building a new mid-sized airplane in the 220-280 seat category because there is a gap between its biggest single-aisle 737 MAX and its smallest twin-aisle Dreamliner, and it needs an aircraft to the replace the 757 which ceased production in 2004. The planemaker is considering whether to go with the narrowbody design or build a twin-aisle plane that would be heavier and possibly less fuel efficient. **Boeing** said the new model could be introduced in 2022, because it is currently focused on the widebody 777x models. **John Wojick**, Senior VP of Global Sales & Marketing, said, "We've been studying what the opportunities are in the market space between the 737 MAX and the 787 in terms of size and range capability, and it's clear to us there is interest. The one thing we know customers want is the most fuel-efficient plane we can build, and if it means having two aisles is less efficient, they'd rather have single aisle." **Boeing** will consider if engine makers are willing to invest in the development and construction of a new engine for the new mid-sized airliners. Mr. **Wojick** sees a market for "several thousand" (between 2,000 and 3,000) airliners that can carry 220 to 280 passengers. At this moment, the lower end of that market is solely served by the **Airbus** A321ceo and the new A321neo, which will be delivered in 2019.

Regional Report

Air New Zealand signed a contract for the purchase of 15 additional ATR 72-600s, in a deal valued at $375 million at list price. The airline ordered seven ATR 72-600s in 2011, and exercised all of the five options and con-verted two purchase rights into firm orders from the 2011 contract. By 2020, **Air New Zealand** will operate 29 ATR 72-600s, which will be the third largest fleet of ATR aircraft in the world. The ATR -600s will progressively replace the airline's fleet of ATR 72-500s. The new ATR -600s will be configured with 68 seats and feature the latest standards of passenger comfort, namely the larger

overhead bins and the comfortable and lightweight seats of the new **ATR Armonia** cabin. **Air New Zealand** has operated **ATR** aircraft for more than 20 years, and received its first ATR -600s in 2012.

The Ministère de l'Économie, de l'Innovation et des Exportations du Québec Will Fund the Bombardier CSeries through an investment of $1 billion, and will take a 49.5 percent stake in the program. **Bombardier's** remaining 50.5 percent share in the program will be transferred to a new limited partnership, which will hold the assets, liabilities and obligations of the CSeries aircraft program. The partnership will be a subsidiary of **Bombardier**, and will carry on the CSeries operations, and it will continue to be consolidated in **Bombardier's** financial results. Quebec's **Investissement Quebec** will pay $500 million instalments on April 1 and June 30, 2016. The deal must meet approval by various parties and the $1 billion will be used entirely for the cash flow purposes of the CSeries program. The company said, "The investment was negotiated between **Bombardier** and the **Government** at arm's length and will not materially affect control of **Bombardier**." **Jacques Daoust**, Minister of the Economy, Innovation and Exports, said, "This move will keep CSeries operations here in Quebec for at least another 20 years." One provision of the deal called for "a continuity undertaking providing that **Bombardier** shall maintain in the Province of Québec, for a period of 20 years, the newly-created limited partnership's operational, financial and strategic headquarters, manufacturing and engineering activities, shared services, policies, practices and investment plans for research and development, in each case in respect of the design, manufacture and marketing of CS100 and CS300 aircraft and after-sales services for these aircraft and that **Bombardier** will operate the facilities located in Mirabel for these purposes." **Airbus** recently spurned an offer to buy a stake in the CSeries program. The CS100 aircraft completed its certification flight testing program on November 17, but the results are subject to **Transport Canada's** final review and acceptance. **Bombardier** submitted the remaining Type Certificate documentation for **Transport Canada** approval. The CS100 should be certified in December, and the investment will support the entry into service and production ramp-up next year.

Canada's New Liberal Government will not allow **Porter Airlines** to fly passenger jets from **Billy Bishop Toronto City Airport**. The downtown airport is currently served by Dash 8 turboprops. **Porter** ordered a dozen of the 110- to 125-seat CSeries aircraft worth $870 million in 2013, on the condition that the jets would be allowed to fly at the airport. It also optioned 18 more CSeries, worth an additional $1.28 billion. The jets were to fly to cities in Canada and the U.S. that are beyond the reach of its Q400s. The future of **Bombardier's** sole CSeries order from a Canadian airline is now in doubt. Transport Minister **Marc Garneau** said the government would not renegotiate and an agreement to extend the runway at the island airport and permit jets. Neither **Bombardier** nor **Porter** chose to comment on the change. A Toronto community group has opposed the expansion at the island airport for 30 months. **Porter** had intended to use **Billy Bishop** as the core hub of its CSeries fleet, but there is a slim chance that the airline could use the CSeries jets to fly from Toronto's **Pearson International Airport** or other airports within its network.

Bombardier Reported its Third Quarter Financial Results. Revenues totaled $4.1 billion for the quarter, a bit lower than the $4.9 billion for the same period last fiscal year. The company lost $4.6 billion, (before financing expense, financing income and income taxes) during the quarter, and its net loss totaled $4.9 billion, compared to earnings of $171 million for the same period last fiscal year. The losses were due to special items mainly related to impairment charges on CSeries and Learjet 85 program tooling. The company burned through $816 million in cash, compared to a usage of $368

million in the same period last year. It ended the quarter with $3.7 billion in available short-term capital resources including, cash and cash equivalents of $2.3 billion, compared to $3.8 billion and $2.5 billion, respectively as of December 31, 2014. **Bombardier's** backlog shrank to $61.8 billion as of September 30, 2015, compared to $69.1 billion at the end of 2014. **Alain Bellemare,** President and CEO, said, "We are proud to announce that the **Government of Québec** will invest $1 billion in the CSeries aircraft program. This partnership comes at a pivotal time, with the CSeries on the verge of certification. The market is there, our leadership is in place, we have the best product and with the support of the government, we are ready to make this aircraft a commercial success." The company cancelled its Learjet 85 program, resulting in a $1.2-billion charge for special items in the third quarter, mainly related to the impairment of the remaining Learjet 85 development costs as well as to an increase in other provisions. The Challenger 650 certification program is 95 percent complete and is progressing towards entry into service in the fourth quarter. The engines have been mounted on the first nearly complete Global 7000 Flight Test Vehicle. The second test aircraft is in final assembly with major structural components joined, including the rear, center and forward fuselage sections and cockpit. Another two aircraft are being built. The Global 7000 was scheduled to go into service in 2016, but it is now expected to do so in the second half of 2018.

Bombardier September 31, 2015 Orders & Deliveries

CRJ	**Total Orders**	**Total Deliveries**	**Current Backlog**
Challenger	33	33	-0-
CRJ1/2/440	1,021	1,021	-0-
CRJ700	336	326	10
CRJ900	391	359	32
CRJ1000	68	40	28
Total	**1,865**	**1,795**	**70**
CSeries	**Total Orders**	**Total Deliveries**	**Current Backlog**
CS100	53	-0-	53
CS300	190	-0-	190
Total	**243**	**-0-**	**243**
Dash 8	**Total Orders**	**Total Deliveries**	**Current Backlog**
Q1/2/300	671	671	-0-
Q400	544	498	46
Total	**1,215**	**1,169**	**46**

Bombardier delivered eight CRJs and five Dash 8-400s this quarter.

Bombardier exhibited three airliners, the all-new CS100 airliner, the Q400 turboprop airliner, and the CRJ900, as well as three bizjets, the Challenger 350, Learjet 75 and Global 6000 business jets at the **Dubai Airshow**. The Canadian manufacturer static displayed a flight-test CS100 in launch operator **SWISS** paint scheme, as well as **Abu Dhabi Aviation's** Q400 turboprop, and a **Petroleum Air Services (PAS)** CRJ900. The PW1500G-engined CS100 has completed its certification flight-test campaign and deliveries will commence in the first half of next year.

Air Baltic Corporation (airBaltic), based in Riga, Latvia, will be the first customer to operate the CS300 aircraft when it takes delivery in the second half of 2016. The flag carrier has 13 CS300 aircraft on firm order and retains options for seven CS300 aircraft. **AirBaltic** will use the CS300 to increases its network, replace older jet aircraft, and complement its 12 **Bombardier** Q400 turboprops.

Embraer delivered 21 commercial jets and 30 business aviation aircraft, for a total of 51 in the third quarter. This was 50 percent higher than in the same period last year, when it delivered 19 airliners and 15 executive jets. The backlog totaled $22.8 billion at the end of the quarter compared to a $22.9 billion backlog at the end of the second quarter, and $20.9 billion at the end of 2014. The company won 20 firm orders for the current generation of the E-Jets, for a total of 146 firm orders of the current and second generation E-Jets this year. The commercial sales were twice the number of deliveries over the first nine months of 2015. **Embraer's** Commercial Aviation unit and Defense & Security business raised the third quarter's revenues to $1,284.6 million, representing year-over-year growth of 3.6 percent. Earnings Before Interest and Taxes (EBIT) were 6.6 percent, in the third quarter, improving from EBIT margin of 5.5 percent margin in the third quarter of 2014. The third quarter net losses attributable to **Embraer** shareholders totaled $109.6 million. Excluding deferred income tax and social contribution, adjusted net income was $71.5 million, and free cash flow during the third quarter was $115.3 million.

Embraer September 30, 2015 Orders & Deliveries

Type	Total Orders	Total Options	Total Deliveries	Current Backlog
E170	193	7	188	5
E175	477	332	311	166
E190	586	92	518	68
E195	165	2	141	24
E175-E2	100	100	-0-	100
E190-E2	77	85	-0-	77
E195-E2	90	80	-0-	90
Total	**1,688**	**698**	**1,158**	**530**

Type	3rd Quarter Deliveries	2015 Deliveries
Light Exec Jets*	21	57
Large Exec Jets**	9	18
Embraer 170	-0-	-0-
Embraer 175	20	62
Embraer 190	-0-	3
Embraer 195	1	3
Total	**51**	**143**

***3 Phenom 100, 18 Phenom 300,**
****3 Legacy 500, 6 Legacy 650 and -0- Lineage 1000**
Deliveries and firm order backlog include orders for the Defense & Security segment placed by State-run airlines

Embraer Released its Market Outlook for Europe and the Commonwealth of Independent States (CIS) in October, at the **European Regions Airline Association (ERA) Annual General Assembly**, in Berlin, Germany. The company forecasts a demand for 1,540 new aircraft in the 70- to 130-seat jet segment, which will be list priced at some $72 billion over the next 20 years. This is the second largest market worldwide for the segment with a fleet growing from 740 to 1,560 units by 2034. The report said airlines will use 70- to 130-seat regional jets to feed international flights. Traditional full-service carriers saw Revenue Passenger Kilometers (RPK) grow at 5.8 percent in 2014 and the aver-age load factor was over 80 percent. However, pricing power for European airlines has declined significantly as supply has consistently outpaced demand. Yields have decreased more than 2 percent annually over the last five years. Hub feeding and differentiation of services to attract business passengers are options that will require right-sized aircraft in the 70- to 130-seat segment, **Embraer** said. Some Low-Cost Carriers (LCC) have reached the limit of growth in trunk routes, so low-density markets are becoming more important to their networks. **Embraer Commercial Aviation,** CEO **Paulo Cesar Silva,** said, "The next frontier could potentially be the deployment of smaller capacity aircraft as LCCs may need to consider new strategies by accessing lower-density markets to sustain growth." Intra-regional aviation in the CIS has been the fastest growing way of improving transportation links between cities. Countries have

changed their transport strategy to make air travel more accessible to more people. They have liberalized air transport rules and invested in the aerospace industry. New 70- to 130-seat aircraft can better match seat capacity to demand and offer more connectivity by increasing frequencies and opening new markets, **Embraer** said.

At Dubai Airshow, Embraer Forecast that the Middle East will play an important role in the 70 to 130-seat segment. The market in the region will demand delivery of 220 new jets through 2034, valued at $10 billion at list prices. It is the fastest growing region in the world, with double-digit growth over the last 10 years, and most of that growth comes from long-haul flights. However, the regional segment feeds the hubs and accesses smaller markets. In 2015, 41 percent of the intra-Middle East flights departed with less than 120 passengers. These markets are optimized for the E-Jets family, which have been successful at capturing 83 percent market share in the large regional jet segment. In June, **Embraer** released its global Market Outlook which forecast a demand for 6,350 new jets in 70 to 130-seat category, which is valued at $300 billion over the next 20 years. **Embraer** projects market deliveries of 2,250 units in the 70 to 90-seat segment and 4,100 units in the 90 to 130-seat segment.

CityJet, Dublin, Ireland, confirmed it would lease 15 **Sukhoi** SSJ 100-95s from **Falko Regional Aircraft Ltd** in 2016 and 2017. The first airplane is scheduled for delivery in March, followed by the second in May or June, and next two will arrive in July/August 2016. The remaining eleven aircraft will be delivered one per month during 2017. The type will be certified for **London City Airport** operations by the end of 2016, they will then replace **CityJet's** fleet of 18 aging **AVRO** RJ85s. Until then, the SSJs will be used for charter operations. **Sukhoi** is developing a winglet upgrade which should be available for retrofit on existing airframes by the end of 2017.

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Mitsubishi Aircraft's Mitsubishi Regional Jet (MRJ) first flew on November 11, fulfilling Japan's long-held ambition to establish an aircraft industry that can compete with some of the major players in global aviation. The plane flew for an hour from **Nagoya Airport** after three years of delays. The first MRJ90 is expected to be delivered in June 2017 to launch customer **ANA Holdings,** after an 18-month test flight program. **Mitsubishi** will use five flight test aircraft in its 2,500 flight hour campaign. It has completed final assembly of the second aircraft and attached the **Pratt & Whitney** PW1200G engines. The other three aircraft are in the final stages of assembly, and should fly in several month intervals. The manufacturer will fly the 76-seat MRJ70 within a year and production of two flight test jets is already underway. U.S. regional carriers **Trans States Holdings** and **SkyWest** are the largest customers (60 & 100 firm orders respectively) and they may have to take the smaller MRJ70 if labor scope clause limitations are not relaxed. That would delay their first deliveries until June 2018 – still two years before the first **Embraer** E175-E2s are delivered. **Mitsubishi** currently has 223 firm orders for the $47 million list-priced MRJ, and it holds options and purchase rights for another 184. The manufacturer intends to sell more than 2,000 aircraft in a market dominated by Canada's **Bombardier** and Brazil's **Embraer.** The MRJ is Japan's first commercial passenger aircraft since the 64-seat YS-11 entered service 50 years ago. That program sputtered to a halt after 182 airplanes were built, but it helped **Mitsubishi Heavy Industries** and other Japanese companies to forge ties with **Boeing**, and turned them into major suppliers and partners of the U.S. aircraft maker. The Japanese now build 35 percent of **Boeing's** carbon-composite 787, including the wings, which are the most complex part.

Skydive Dubai purchased its first **Viking** DHC 6-400. The Series 400 Twin Otter is scheduled for delivery in time for the start of the **World Air Games** being hosted by **Skydive Dubai** on November 30,

2015. Several DHC 6-300s serve its commercial parachute operations. One of **Skydive Dubai's** Twin Otters was severely damaged when it ran off the runway near the **Dubai Marina** in October.

Order Changes and Cancellations

Airbus Reported the cancellation of one A321ceo and three A320ceo orders by an undisclosed customer in October. **VietJetAir** converted two A320ceo orders to A321ceos. At the end of the month, the airline had 12 A320ceo and 15 A321ceo orders. **LATAM Airlines Group** deferred several aircraft deliveries originally scheduled for 2017 and 2018, to cut $1.8 billion from its fleet capital expenditure. Under the plan, **LATAM** converted six A350-900 orders for **TAM Linhas Aéreas** into A350-1000s which will not be ready for delivery until mid-2017.

Boeing Cancellations in October. Gol Linhas Aéreas Inteligentes (GOL Airlines) converted nine 737-800 orders into 737 MAX aircraft in October. The Brazilian carrier has eight 737-800s, and 69 737 MAX in backlog. Four of its remaining -800 orders will be filled in 2016 and 2017. **Oman Air** cancelled six previously undisclosed Next Generation 737 orders that were placed earlier in 2015. The six 737s were replaced by 20 737 MAX in a contract finalized in October. An **Unidentified Customer** dropped two 737 NG orders when it bought two 737 MAXs. The number of 737s cancelled this year stood at 47 as of October 31. In October, **Boeing** moved six **Rolls-Royce** powered 787-8 orders from the **Unidentified Customer** heading to **Ethiopian Airlines.** These were the early model 787s that were cancelled by **All Nippon** and **LAN Airlines,** and parked since 2012 and 2013.

Aeroflot Chief Executive Officer Vitaly Saveliev told a local television station, ***Rossiya 24,*** that the airline no longer needs the 22 787-8s it ordered in 2007. He cited the slowing air travel market and complained that **Boeing** failed to deliver them on time. **Aeroflot** announced in July that it would cancel the 787 order, but **Boeing** said it was not officially notified of the change. **Boeing** reported on its official ***Orders & Deliveries*** website in October that **Aeroflot** switched four of its 787-8 orders to the larger 787-9 model.

Leasing & Finance

Avolon's Lease Revenue Increased by $43.2 million (31.4 percent), to $180.6 million for the quarter ended September 30, 2015 compared revenue of $137.4 million in the same period of 2014. This was due to a larger portfolio, but was offset by a decrease in the Annualized Lease Rate, which was 10.9 percent in 2014, and 10.8 percent as of September 30. The company added 30 new aircraft during the first nine months, raising the total to 144 at the end of the quarter. The aggregate net book value rose 21.1 percent, from $5,261.6 million in 2014 to $6,370.2 million. Net income increased by 33.3 percent to $58.4 million,

Air India intends to lease another 15 **Airbus** A320s to pace the rapidly growing domestic market, which saw a 20 percent jump in the recent months. The flag carrier will long-term lease the A320s and will issue a global tender to leasing companies. They hope to start taking deliveries in the second quarter of 2016. It has already signed a contract to lease 14 A320neos with the Kuwaiti lessor, **Aviation Lease and Finance Company.** The NEOS will be delivered between April 2017 and March 2018. They will replace **Air India's** fleet of elderly A320s, which are up to 18years old. The airline recently leased five new A320ceos from **China Aircraft Leasing Company**. **Air India** has not yet decided whether the 15 new jets will be A320neos or A320ceos, and it is talking with **Pratt & Whitney** and **CFM** about engines.

compared to $43.8 million in September 2014. **Bohai Leasing**, a subsidiary of aviation and shipping conglomerate **HNA Group**, is buying **Avolon Holdings,** Ireland, for about $2.5 billion. After the deal is consummated, **Bohai Leasing** will own a fleet worth $8.48 billion and become the world's ninth-largest aircraft lessor. It will fund the purchase through a combination of loans and internal resources, with 70 percent of the cost being met with bank borrowings. **Bohai** joined the global aircraft leasing industry after it bought **Hong Kong Aviation Capital (HKAC)** in 2012. The Hong Kong-based aircraft leasing company had 70 passenger aircraft at the time.

Aircastle reported a third quarter 2015 net loss of $14.0 million and an adjusted net loss of $9.7 million. The third quarter saw 19.4 percent higher total revenues of $212.1 million, up from $177.6 million in the same period of 2014. **Aircastle's** CEO, **Ron Wainshal**, said, "During the third quarter we took decisive measures to address the challenge presented by the **Malaysian** bankruptcy and to accelerate our planned exit from freighter investments. Notwithstanding the resulting impair-ments, our operating performance was excellent as evidenced by the 14.5 percent cash ROE [return on equity] and 99.9 percent utilization results." During the quarter, **Aircastle** acquired seven aircraft for $233 million, and sold eight aircraft for a net gain of $15.7 million during the quarter, while it purchased 32 aircraft for $1.0 billion, and sold 20 aircraft for a total net pre-tax contribution of $38.3 million during 2015.

GE Capital Aviation Services (GECAS) will lease two new **Boeing** 737 MAX aircraft to **Okay Airways Company**, Tianjin, China. They are scheduled for delivery in 2018 and are part of **GECAS'** existing order book. **Okay** operates 17 737NGs and a dozen **Xi'an** MA-60 turboprops to domestic and international destinations.

Engines

CFM International Delivered the First Two LEAP-1B Engines to Boeing for installation on the first 737 MAX airplane before the factory rollout by the end of the year and first flight in early 2016. **Keith Leverkuhn,** VP and General Manager – 737 MAX, said, "The delivery of the first LEAP-1B engines for the new 737 MAX ushers in the next era of our successful partnership with **CFM International**. The engines will meet the commitment we made to our customers to provide industry-leading fuel efficiency, reliability and maintainability in the single-aisle market." **Allen Paxson,** Executive VP of **CFM International,** said, "We have put this engine through thousands of test hours and cycles on the ground and in the air on our own 747 flying testbed, and we are thrilled with the results we have achieved. The more we see of this engine, the more confident we become that it will deliver the performance, reliability, and durability we have promised." **CFM** said this was the most extensive ground and flight test certification program in its history. The company currently has more than 30 LEAP engines (spread over three models) on test or in final assembly and the program has logged a total of nearly 6,150 certification ground and flight test hours and 12,400 cycles. To date, **Boeing** has

Airbus Flight-Testing Higher-Thrust Rolls-Royce Trent XWB-97 Engine. The powerplant for the A350-1000 was installed on the inboard left-hand pylon of the **Airbus** A380 "Flying Test Bed", and the first flight from Toulouse lasted 4 hours 14 minutes. The engine's performance was measured across a "wide range" of thrust settings, the airframer states. The aircraft was flown at altitudes up to 35,000 feet and the engine was tested at speeds up to 0.87 mach. The engine flight-test program will include hot weather as well as icing condition testing. The Trent XWB engine produces 97,000 pounds of thrust on take-off, and it is the most powerful engine ever developed for an **Airbus** aircraft. **Airbus** said the first A350-1000 will fly in nine months.

received orders for a total of 2,898 737 MAX aircraft from 59 customers worldwide. Launch customer **Southwest Airlines** is scheduled to take delivery of the first 737 MAX 8 in the third quarter of 2017.

Emirates signed a $16-billion contract with **GE Aviation** covering "the maintenance, repair and overhaul (MRO) of the GE9X engines that will power the airline's fleet... over a period of 12 years." In 2013, **Emirates** signed a $76-billion contract for 150 **Boeing** 777X twin-engine aircraft, powered by the new GE9X engine, in what was the single largest order by value in the history of U.S. commercial aviation. **Emirates** also signed a second contract for a $36-million, 12-year deal with **GE Aviation** for maintenance and inventory support for various avionics, electrical power and mechanical systems on all 149 **Boeing** 777s in service and the 44 more on order.

Philippine Airlines signed a Memorandum of Understanding with **Pratt & Whitney** for PurePower Geared Turbofan engines for 15 firm A321neo aircraft, plus 15 purchase rights. Deliveries are scheduled to begin in 2017. The PurePower engine family has completed more than 23,000 hours and 40,000 cycles of testing. **Philippine Airlines** was founded in 1941, and has a young and modern fleet of aircraft and a route network that spans 35 foreign cities and 29 domestic points.

Pratt & Whitney successfully completed its first test flight of the **PW1900G PurePower Geared Turbofan (GTF)** engine for the **Embraer** E190-E2 and E195-E2 aircraft. The PW1900G engine model was assembled at **P&W's Middletown Engine Center** in Connecticut, and flew on **Pratt & Whitney's** 747SP flying test bed at the company's **Mirabel Flight Test Center**, in Quebec, Canada. **Embraer** President & CEO, **Paulo Cesar Silva,** said, "The start of engine flight testing is an important milestone for us as we bring the E-Jets second generation from concept to reality." **Greg Gernhardt,** President of **Pratt & Whitney Commercial Engines**. Said, "This is a historic time for us as we begin the flight test program for our fourth PurePower airframer customer." The Geared Turbofan engine family has completed more than 23,000 hours of testing and 40,000 cycles.

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TAP Portugal selected **Rolls-Royce** Trent 7000 engines to power the 14 **Airbus** A330-900neo aircraft it ordered in November. The new aircraft replaced a previous order for 12 A350-900s. The A330neos are part of the fleet replacement announced by the airline's new majority owner **Atlantic Gateway**.

International Air Transport Association (IATA) Posts November 2015 Jet Fuel Prices. The association updates the world's average jet fuel prices each week**.** On November 20, the world's average price of fuel was $1.356 per gallon, 4.4 percent lower than the October 2015 price of $1.453. Fuel was also 41.1 percent less than it was in November 2014. The price of fuel is affected by location. It was only $1.288 in the Middle East region and was $1.351 per gallon in Latin America. In Asia, fuel cost $1.337 per gallon. Fuel rose to $1.335 in Europe, and to $1.395 in North America, which was the highest priced region. Since last year, fuel costs in those regions dropped by 41.6 and 40.8 percent respectively. **IATA** estimated that the global airline industry's aggregate fuel bill will total $68.2 billion in 2015, a savings of $88.4 billion from the previous year.

Airline News

Afghan Carrier Safi Airways CEO **Joshua Bustos** said the airline plans to expand aggressively and "We're going to speak to **Airbus** and **Boeing** to determine what's available" in the coming three years. **Safi** wants from 10 to 20 narrowbody aircraft to fly routes that are within a three-hour range from Kabul. "Iran is on top of the list to go to, along with Kuwait," he said. They are

destinations that will be immediately profitable for the carrier. Business is growing, driven by demand. The airline will consider the option to lease, he said. It already operates five aircraft, and flies to three domestic and four international destinations. Afghan airlines are still banned from flying to the European Union, but **Safi** is working with the civil aviation regulator in Afghanistan and relevant parties to get the ban lifted. It already complies with **IATA's Operational Safety Audit**, an industry safety standard.

Flynas, a Saudi Arabian budget carrier, wants to purchase 16 new aircraft over the next four years from either **Airbus** or **Boeing**. The airline currently has 27 leased aircraft in its fleet with the average age of eight and half years. The airline's CEO, **Paul Byrne,** said, "Profitability has given us confidence. We're talking to **Airbus** and **Boeing** to see their best offer." **Flynas** has been profitable all this year and wants to add four new aircraft per year for the "foreseeable" future and it may switch from **Airbus** to an all-**Boeing** fleet, Mr. **Byrne** said.

JoyAir, China, will acquire a 48 percent stake of a proposed new joint-venture with **Okay Airways**. The two airlines signed a Memo-randum of Understanding to merge their regional operations in August. **Okay Airways** will own 46 percent of the company, with the remaining 6 percent held by management. Last month, **China Eastern Airlines** announced plans to dispose of its remaining 5 percent of **JoyAir** because there was little compatibility between the two airlines. The new regional carrier will be based in Tainjin, and will operate 21 MA-60s which will come from **JoyAir's** and **Okay's** fleets. The merger is expected to breath new life into both airlines which have struggled to attain profitability since their founding in the last decade**. JoyAir** currently operates eight MA-60s on domestic services, while **Okay** operates one 737-300(F), 14 737-800s, three 737-900ERs, and 13 MA-60s on flights throughout China as well as to South Korea and Thailand.

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Pegasus Asia, Kyrgyzstan, changed its name to **Air Manas** to develop a unique independent identity. The airline was launched in 2013, as a 49/51 partnership between **Pegasus Airlines,** Turkey, and a local charter specialist, **Air Manas**. The airline decided to enter the market using the strong and recognizable brand name of **Pegasus Airlines**. The airline said, "Now we believe that we have matured enough to grow and develop further on our own, and have decided to use our own company name [**Air Manas**] and turn it into a strong and reliable trademark." The joint-venture with the Turks will remain intact although they returned the **Pegasus Asia** trademark to its owner. **Pegasus Asia** operates one 737-400 and one 737-800/W, sourced from **Pegasus,** on scheduled flights from Bishkek to India, Russia, Turkey, and Tazjikistan.

SpiceJet Is Recovering from its Near Death Experience. It is adding capacity for the upcoming winter season. The Low-Cost Carrier (LCC) will lease in four 737 NextGens and two more A319-100s to meet the growing demand. Senior VP **Shilpa Bhatia,** said, "With this enhancement we have significantly growing our capacity by 16 percent. Our new winter flight schedule adds considerable depth to our existing operations to cater to the peak demand while enhancing connec-tivity and boosting customer value." Currently, **SpiceJet** operates one leased A319, 19 737-800s, four 737-900ERs and 14 Dash 8-400s. CEO, **Ajay Singh,** said **SpiceJet** was bullish about its long term growth plans, and was talking with **Airbus** and **Boeing** about an order for between 100 and 150 narrowbody jets. It is also negotiating with **ATR, Bombardier** and **Embraer** for up to 100 regional aircraft. He expects to place an order by the end of March 2016. **SpiceJet** still has firm orders for 42 737 MAX aircraft with **Boeing** that it placed in October 2013. During its financial melt-down, the airline cancelled orders for 16 737NGs.

Singapore Airlines (SIA), Southeast Asia's biggest carrier, is offering to pay Singapore $453 million ($322 million) to buy the 44.8 percent of its low-cost unit **Tiger Airways** that it doesn't already own. They plan to take it private, and streamline operations across its networks. **SIA** owns 55.8 percent of **Tiger Airways Holdings Ltd.,** and offered to pay S$0.41 in cash for each share. This is 32 percent above the recent 31 cent price. **Tiger** shareholders have the option of buying **Singapore** shares for S$11.10 apiece. **Singapore Airlines** CEO **Goh Choon Phong** said, "**Tiger Airways'** development potential is limited without deeper integration with the **SIA Group** to build a strong foundation for growth over the long term. We believe our offer to **Tiger Airways** shareholders is compelling as a significant premium is being offered." The flag carrier earned a profit of S$213.6 million in the recent quarter, up from S$90.9 million a year earlier. Sales dropped 1.5 percent to S$3.84 billion.

WOW air plans to acquire three new **Airbus** A330-300s for flights to the U.S. West Coast. The Icelandic low-cost carrier plans to serve Los Angeles and San Francisco, California, from its Reykjavik hub in the summer of 2016. The A330s will be configured with 340 seats in a single-class layout. **WOW air** currently operates a fleet of three A320-200s and two A321-200s on flights to mainland Europe as well as Boston and Baltimore. They will start flying to Toronto and Montreal in May 2016.

Bankruptcy of the Month

Transaero Dismembered. Aeroflot Chief Executive Officer **Vitaly Saveliev** said **Aeroflot** may take over 34 leased aircraft from **Transaero**. It is negotiating with lessors and Russian creditor banks **Sberbank, VEB** and **VTB Leasing**. The airline has provisionally agreed to lease four 747-400s and 10 new 737-800s that will be delivered in late 2015, 2016 and 2017, from **Sberbank's** Irish leasing affiliate. **VEB** and **VTB Leasing** own the other five 747-400s, six 777-200ERs, four 777-300ERs, two 767-200ERs and nine 767-300ERs. Before **Transaero's** operating certificate was withdrawn on October 26, several of its aircraft were flown from Moscow to a storage facility at Teruel, Spain. The aircraft included at least six 747-400s, some 767-300ERs, and approximately 12 737-800s. Its new four **ICBC Leasing**-owned A321s were flown directly from the assembly line to storage at Teruel, and were never operated by the airline. **AerCap** recovered its five 737-700s and leased them to **Southwest Airlines. Aeroflot** is taking on the additional capacity in order to fill part of the void left by **Transaero's** grounding on October 26. The flag carrier inherited 56 international routes from **Transaero,** after the **Russian Government Federal Air Transport Agency's (Rosaviatsia)** approval. The other

Estonian Air Ceased Operations on November 8, because the **European Commission** ordered it to pay back aid it received from the **Estonian Government.** The **EC** said state aid gave the company an "undue advantage" over its competitors, and breached **European Union** rules. **Estonian Air** needs to pay back about €85 million ($91 million) plus interest and it can't receive an additional €40 million restructuring aid. Competition Commissioner **Margrethe Vestager** said, "**Estonian Air** has repeatedly received public subsidies over the past five years, but did not carry out the necessary restructuring to become viable as a business." The **EU** stipulates that state aid can only be granted once in a 10-year period, while Estonia subsidized **Estonian Air** three times between 2010 and 2014. The airline said it has started the liquidation process. The airline was 97.34 percent owned by the governent and the other 2.7 percent was owned by **Scandinavian Airlines.** The Baltic nation set up a new airline last month, **Nordic Aviation Group. Estonian** operated two E175s and three CRJ-900s, and and it leased two CRJ-700s from **Regional One** in October.

independent carriers also expressed an interest in taking over **Transaero's** other 100 international routes and the domestic network. **VIM Airlines** and **Ikar** were allocated rights to operate from Moscow to Russia's Far East, and **UTair** started scheduled Moscow-Anadyr flights. **Transaero** was to take delivery of four new **Boeing** 747-8s and four new **Airbus** A380s, and had orders for **Sukhoi** Superjets and **Irkut** MC-21s. It had 106 aircraft in its fleet when it shut down. **Aeroflot** added three 777-300ERs, six 737-800s and four Superjets over the first nine months of this year, and it grounded five **Ilyushin** Il-96s. At the end of September, it operated 163 airplanes, while the **Aeroflot Group** has 261 transports in its fleet. **Aeroflot Group** plans to recruit up to 6,060 **Transero** employees, including around 700 pilots, around 1,000 engineering and technical personnel; around 2,800 flight attendants; around 1,200 ground service crew; and around 300 back-office and managerial staff. State-owned **Rossiya** said it was ready to employ more than 3,000 employees at its newly created Moscow subsidiary. **Aeroflot** wants to takeover the bankrupt airline's **EASA**-approved line maintenance base at **Moscow Vnukovo Airport** where it will retain up to 1,000 personnel. **Transaero** leased a hangar at **Vnukovo's VARZ-400 MRO** hub to carry out airframe technical services on its widebodies.

Royal Jet, Abu Dhabi, is purchasing two Global 5000s and a Learjet 60XR, and two Boeing Business Jets (BBJ) (one is SN 62467) for $700 million. CEO **Patrick Gordon** said, "Our goal is to have 20 airplanes by 2020." The private charter operator uses 11 aircraft, six of which are BBJs (SN 29268, 29269, 29857, 29858, 29865 & 30884), making it the world's largest single operator of the aircraft. Mr. **Gordon** said the company was equipping all of its planes with an enhanced vision system (EVS), a navigational aid that allows the aircraft to operate in poor weather conditions such as fog. The second new BBJ will be delivered next month to a completion center before joining the fleet.

InterSky, Austria, filed for bankruptcy at the District Court of Vorarlberg on November 9. The airline ceased commercial operations on November 5. It operated two ATR 42s, one ATR 72-200, two nearly new ATR 72-600s, and five Dash 8Q-300s.

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Technical

Jet Aviation Basel outfitted and delivered an **Airbus** ACJ320 Prestige (SN 6285) to the **Government of Azerbaijan**. The handover of the head-of-state aircraft marks the Swiss company's third VIP airliner completion this year. Other projects include twin-aisle A340-600, also for Azerbaijan, and a Boeing Business Jet. The ACJ320 is certificated for private use, and seats 57 passengers and five crew members. The narrowbody airliner features a bedroom, bathroom, lounge and office area.

The Russian Interstate Aviation Committee (IAC), the equivalent of the U.S. **National Transportation Safety Board (NTSB)** said it was suspending flying certificates for **Boeing** 737s currently in use in Russia, according to the ***RIA*** news agency. **Federal Air Transport Agency,** their version of the U.S. **Federal Aviation Administration (FAA)** denied that the safety agency has the authority to ground the planes. Russian airlines are flying approximately 200 **Boeing** 737s "until receipt of an official instruction," ***TASS*** reported. According to sources, the timing of the **IAC** letter was related to a report into the crash of a **Tatarstan Airlines** 737-500 in November 2013. **Boeing** spokesman **Doug Alder** said the company doesn't know why the safety agency issued a letter suspending the 737's airworthiness certificate. "We're looking into it," he said, and **Boeing** representatives meet with Russian officials to discuss the issue. The **IAC** said the suspension will stay in effect until "receipt of a joint

notice of the **Russian Federal Air Transport Agency** and the **FAA** that **Boeing** 737 type aircraft operating in Russia are in condition supporting their safe operation." The **IAC** also wants foreign registered airplanes to be re-registered in Russia. The **Metrojet** A321 that crashed in Egypt was leased from an Irish lessor and registered in Ireland. Most 737s operated in Russia are owned by lessors and registered outside the country, as are most Western-built airliners.

Cargo Pallet

PEMCO World Air Services (PEMCO) announced an undisclosed customer firmed up a Memorandum of Understanding for four 737-400 conversions. The work started in November 2015, and the fourth conversion will be completed in 2016. **PEMCO's** converted 737-400s are fitted with 11 pallet positions, up to 48,000 pounds of payload and 4,600 cubic feet of total volume. The optimized center of gravity of **PEMCO's** 737-400 freighter yields the highest possible usable payload and retains maximum fuel efficiency for range and operating economics, the company said.

Volga-Dnepr Airline will lease two more **Antonov** An-124 Ruslans (SN 08-04 & 08-05) from **JSC Sberbank Leasing.** The airline already operates 10 An-124s. **Sergey Shklyanik, Volga-Dnepr Group** Senior VP said, "The An-124-100 aircraft acquisition is in line with the **Group's** Strategy 2020 in which it plans to expand its fleet with Russian and foreign-made aircraft." **Volga-Dnepr Airlines** also operates five **Ilyushin** Il-76TD-90VDs and it specializes in ad-hoc charter flights hauling outsized and heavy freight shipments. Its sister airline, **AirBridge Cargo**, U.K., operates seven 747-400Fs and eight 747-8Fs.

Aeronautical Engineers, Inc. (AEI) announced that **Aviation Capital Group (ACG)** contracted for 15 737-800SF conversions. The deal includes options for an additional 15 freighters. **AEI** has 50 firm orders and options for its -800SF, to date. **ACG** previously had **AEI** convert six 737-400 aircraft from passenger to freighter. **AEI** will start the first 737-800SF modification in 2016 and expects to receive **FAA Supplemental Type Certification** in 2017. The -800SF passenger-to-freighter and combi program was formally launched in October, 2014, when **Boeing** finalized an agreement to license engineering data for the 737-800/-900 aircraft with **AEI**. The -800SF converted freighter will accommodate 11 88" x 125" AAA full height containers or pallets and one AEP/AEH container in the 12th position. Depending upon the aircraft model and gross weight limits, the -800SF will be able to carry a payload of up to 52,000 pounds (23,587 kilograms). Additionally the 737-800SF freighter will incurporate an 86" x 140" main cargo door and will include up to five supernumerary seats. **Jet Midwest Group** signed an agreement to have **Taby Air Maintenance (TAM),** Sweden, perform full Class-E cargo conversion of Saab 340Bs. The **EASA** STC has already been developed by **TAM** and approved by **EASA** and the **FAA.** The project will be performed at **TAM's** maintenance center in Orebro, Sweden.

Precision Aircraft Solutions redelivered four 757-200 freighters from four MRO locations around the world in November. **SF Airlines** received two -200-PCFs (SN 26278 & 30757) from **Aeroturbine,** Goodyear, Arizona, and **CAMB**, Chengdu, PRC, respectively. **DHL** acquired -2Q8-PCF (SN 29380) from **Flightstar**, Jacksonville, Florida, and **Vx Capital Partners** accepted -222/W-PCF (SN 25397) from **HAECO Americas** in Greensboro, North Carolina. **Precision Aircraft Solutions** is an international aircraft modification company and is based in Portland, Oregon. Its president **Gary Warner** said, "We are proud of these four converted freighters being redelivered in one week's time.

Lufthansa Cargo plans to retire another two of its MD-11(F)s in November, to reduce its freight capacity. The move is part of a €40 million ($44 million) cost reduction program following the loss of €38 million ($41.8 million) for the first nine months of its current financial year. The **Lufthansa** subsidiary said cargo revenue shrank 8.3 percent over the period with load factors declining by 4.7 percent to 62.4 percent. **Lufthansa Cargo** operates five B777-Fs and 14 MD-11(F)s.

ANA – All Nippon Airways is considering converting more of its 767-300ERs into 767-300(F)s to grow its cargo business. **ANA** has already converted eight of its oldest 767-381s into -381BCF (Boeing Converted Freighters) in-house and they are already back in service for **ANA's** cargo division. The Japanese carrier is replacing approximately forty of its older aircraft with new 787s.

The **Royal Australian Air Force** received its eighth and final **Boeing** C-17A Globemaster III transports on November 4. The aircraft (registered A41-212) was the second of two C-17s ordered in April 2015, and it is based at Amberley. The **Australian Defense Force (ADF)** invested A$1 billion ($700 million to provide heavy lift for a range of military and humanitarian relief operations, and is spending $300 million of that to upgrade supporting infrastructure. **Mal Brough,** Minister for Defense Materiel and Science, said, "The C-17A has played a central role in the **ADF's** activities, including supporting the international effort to combat **Daesh (ISIS)** in Iraq and Syria, recovering the victims of the **[Malaysian]** MH17 tragedy in the Ukraine, and delivering disaster relief to victims of the Vanuatu cyclone and Queensland floods. With extra-ordinary lift and range, the C-17A is an integral part of the **Australian Defense Force's** airlift capability. It allows Australia to rapidly deploy troops, combat equipment, tanks, helicopters and humanitarian resources worldwide."

Military Market

Lockheed Martin Corp. was awarded a contract worth nearly $968.7 million to build 17 C-130J Super Hercules aircraft. The **U.S. Air Force** will take delivery of six C-130J-30 and nine MC-130J gunships, the **Marines** will acquire one KC-130J aerial tanker and the **Coast Guard** will receive one HC-130J search and rescue airplane. They will all be in service by April 2020, the **Department of Defense** said. Last month, **Lockheed** announced that it had reached a verbal agreement with the **Air Force** for a five-year contract to build up to 83 C-130J transport planes for the previously mentioned services through 2020.

France's Possible Purchase of Four C-130J transport aircraft through the U.S. **Foreign Military Sales Program,** was approved by the **U.S. State Department.** The C-130Js could be intended to plug a gap in the **Airbus** A400M delivery schedules to the **French Air Force**. The potential contract would include two C-130J trans-ports with **Rolls-Royce** AE-2100D engines, two KC-130J tankers with engines, four spare AE-2100D engines and communications and self-protection systems, training and support services worth $650 million. The **State Department** said the C-130Js will provide critical transport, airdrop, and resupply to thousands of French troops in support of current and future operations. The KC-130Js will provide crucial air refueling capability to France's fighter aircraft, light transport aircraft, and helicopters. Further, the "notice of a potential sale is required by law and does not mean the sale has been concluded."

The Israeli Government approved the purchase of an executive transport for the nation's prime minister. The program is budgeted at approximately $100 million. **Israel Aerospace Industries** offered its 767-based Multi-Mission Tanker Transport (MMTT) that could transport government officials and

provide personnel transport and air-to-air refueling services. The **Boeing** 767-300ER would be converted by **IAI's Bedek Group**, which would install a new glass cockpit and new engines. **IAI** said the MMTT would be able to transport 200 soldiers and 60 ton of cargo. The acquisition of an "Air Force One" was delayed by budget constraints and public criticism. The price of the 767 MMTT is 15 to 20 percent lower than any other alternative.

Airbus Defence and Space and the Coulson Group, Canada signed a Memorandum of Understanding where **Coulson Aircrane,** will develop and manufacture a version of its **Retardant Dropping System (RDS)** for the **Airbus** C295W transport aircraft. The system installed in the C295W will consist of two 3,500-liter, roll-on-roll-off internal tanks, which after the fire season can be easily removed. The C295W can then be used as a ramp-equipped, multi-role transport able to carry cargo, troops, paratroops or stretchers. The two internal tanks can transport water or retardant and be refilled in less than seven minutes. The flow-rate can be adjusted during a drop, via the cockpit control panel, accounting for the desired coverage, aircraft speed and height over terrain. A prototype C295W water bomber has been flying in Spain since 2013. The **Coulson Next Gen Retardant Delivery System** is in service in a C-130 water bomber. **Coulson** plans to build a new facility of up to 60,000 square feet at the **Alberni Valley Regional Airport**, which is also planning a $7-million expansion of runways and modernization of its radar systems. The first new C295W will have the Coulson system installed in January 2017.

AIRCRAFT DELIVERIES & SALES

Airbus

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Airbus A320. **Airbus** delivered 18 A320s during October, including two -200/Ws to **BOC Aviation,** which leased one -214/W (SN 6773) to a new customer, **Frontier,** and the eighth of 20 -232/Ws (SN 6785) to **Vistara**, India. **Loong Air** leased a third -214/W (SN 6789) from **China Development Bank Financial Leasing Company (CLC CDB Lea-sing)**, China**. China Aircraft Leasing Co. (CALC)** leased the fifth -214/W (SN 6803) to **Air India** for 12 years, and **GECAS** leased -214/W (SN 6831) to **airberlin. Avianca Brasil** leased -214/W (SN 6800) from **Synergy Aerospace**, and **Eurowings** acquired its seventh -214/W (SN 6807) from **Lufthansa.** The flag carrier has 35 more A320s on order. **Thai Airways International** transferred a second -232/W (SN 6775) to **Thai Smile.** The low-cost carrier will acquire a third new -232/W (SN 6795) from the flag carrier in November. **Lion Air** transferred a third -214/W (SN 6782) to its leasing subsidiary, **Transportation Partners,** for lease to **Batik Air,** Indonesia. Their fourth -214/W (SN 6823) will be delivered shortly. **Airbus** delivered six A320s to Asian airlines, including -214/W (SN 6779) **VietJet Air** which sold it to **Avolon Aerospace** and leased it back. **CEBU Pacific Air** acquired its 26th of 31 -214/Ws (SN 6777), and **AirAsia** received -216/W (SN 6702) after a four month storage, and transferred it to **AirAsia Japan.** The airline plans to operate six aircraft by the end of 2016, and it will add five more aircraft per year to its fleet in 2017, 2018, and 2019.

Airbus A319. Two **Airbus** A319s was delivered in October. **Air China** accepted its 33rd and final -115/W (SN 6699). It was manufactured at the **Tianjin FAL. Alpha Star** received its first ACJ319-115/W (SN 6727), which joined a fleet of one A319 and three A320s which are used as executive transports. Only 20 A319ceos and 49 A319neos are in backlog.

Tianjin FAL delivered -232/W (SN 6688) to **China Eastern Airlines,** and -214/W (SN 6710) to **Sichuan Airlines. Juneyao Airlines** accepted -214/W (SN 6808) from Europe. **VivaAerobus** acquired -232/W (SN 6755), and sold it to **SMBC Aviation Capital** for lease back. **Virgin American** received its 12th of 19 -214/Ws (SN 6787), and **easyJet** accepted its 94th of 143 -214/Ws (SN 6788).

Airbus A321. **Airbus** delivered 17 A321s in October, including three -231/Ws (SN 6790, 6802 & 6812) to **American Airlines,** and the first two of 19 -211/Ws (SN 6793 & 6825) to **Frontier Airlines.** The A321s were sold to **GECAS** and leased back. **JetBlue Airways** obtained its 22nd and 23rd of 46 -231/Ws (SN 6791 & 6809), and **Spirit Airlines** acquired the fourth of 30 new -231/Ws (SN 6804). **LATAM Airlines Group** accepted two -211/Ws (SN 6797 & 6798) and the first is operated by **LAN Airlines,** and the second is flown by **TAM Linhas Aereas. Avianca Holdings** leased -211/W (SN 6511) to **Avianca,** after the plane was stored for six months. **Etihad Airways** acquired its sixth of seven ordered -231/Ws (SN 6821), and **Turkish Airlines (THY)** obtained its 52nd of 65 -231/Ws (SN 6822). **ICBC Leasing,** China, took delivery of its fourth of six -211/Ws (SN 6817) for **Transaero Airlines,** and flew it to storage at Teruel, Spain, until it can be leased to another airline. **CALC** leased -231/W (SN 6827) to **Air Macau,** and **China Eastern Airlines** acquired one -211/W (SN 6814). **BOC Aviation** leased the last of four -231/Ws (SN 6796) to **Asiana Airlines.**

Wizz Air took delivery of its first of 27 A321-231/Ws (SN 6848) on order, on November 12. A second -231/W is due next month, and the two aircraft will be leased from **CDB Leasing**, as part of six aircraft deal.

Airbus A330. **Airbus** delivered two -200s and four -300s during October. **Hawaiian Air** accepted its 18th and last -243 (SN 1565). The airline leases four -243s. **International AirFinance Corporation (IAFC)** leased the fourth -243 (SN 1678) to **Kuwait Airways. IALC's** fifth and final -243 (SN 1681) will be leased to **Kuwait** this year. **Air China** acquired its second 242-ton Maximum Take-Off Weight A330-343 (SN 1673), and **Air Asia X** took delivery of -343 (SN 1646) after four months storage. Indonesia's **Lion Air** took delivery of its first of three -343s (SN 1675) in October. The aircraft seats 440 passengers in a single class layout. The airline will use its A330 fleet on long range pilgrimage flights to Jeddah, Saudi Arabia, as well as on selected high density domestic routes and flights to China. The other two -343s (SN 1680 & 1683) will be delivered by the end of December. They will replace **Lion's** two 747-412s (SN 24603 & 24605) and the latter 747 was grounded in late October. Rival **Garuda Indonesia Airways** leased -343 (SN 1671) from **Hong Kong Aviation Capital** after a sale and leaseback transaction. **Garuda** wants to delay delivery of some of its six A330s that are due in 2017, and it may convert some A330 orders to the A330neo model, which will enter service later this decade.

GE Capital Aviation Services (GECAS) leased the first of seven used A330-203s (SN 530) to **Deutsche Lufthansa's Eurowings** low-cost subsidiary. A second aircraft (SN 684) is being prepared by **GECAS** and **Lufthansa** technical teams who are managing the cabin renovations and redelivery of each aircraft to the flag carrier. Another five -203s are currently leased to other airline customers around the world and when those lease terms expire, they will be handed over to **Eurowings** through 2017.

Airbus A350. **Finnair** took delivery of the first of 19 A350 XWBs on order, when it leased -941 (SN 018) from **GECAS** in October. It is the first European operator and the third operator worldwide of the all-new airliner. The aircraft is configured with 297 seats, comprising 46 Business

Class, 43 Economy Comfort and 208 Economy. **Finnair** will have five A350s by the second quarter of 2016, seven by the end of 2016, 11 by the end of 2017, and all 19 by the end of 2023. **AerCap** leased **Vietnam Airlines'** second -941 (SN 16) to the airline in October. The aircraft was powered by **Rolls Royce** Trent XWB engines. **Qatar Airways** acquired two more -941s (SN 008 & 011) for a total of six. **Airbus** has delivered nine A350s this year.

Emirates displayed its first two-class, 615-seat A380-861 (SN 200) at the **Dubai Airshow**. The aircraft flew from the **Hamburg Finkenwerder Airbus** plant to the air show on November 4, and it is the Dubai carrier's 68th A380-861. It will enter service to Copenhagen on December 1. The two-class configured A380 features 58 flatbed seats in business class and 557 seats in economy, plus an onboard lounge.

TAM Linhas Aéreas will start A350-900 services from **São Paulo Guarulhos Airport** to Manaus on January 25, 2016. Its first of 27 -941s (SN 024) is due in December. Once crew-training flights have been completed, **TAM** expects to fly the A350 to **Miami International** in March followed by **Madrid Barajas** in April.

Airbus A380. **Qatar Airways** received its sixth -861 (SN 189) and **Etihad Airways** accepted its fifth -861 (SN 191) in October. The airlines have four and five more A380s on order, respectively, and **Airbus** has a backlog of 144.

Boeing

Boeing 737 NG. **Boeing** delivered 39 737s in October, including four -900ERs to three U.S. airlines. **United Airlines** received two -924ER/Ws (SN 42195 & 42196), and now it has two more on order. **Alaska Airlines** bought its 32nd -990ER/W (SN 44108), and it has 33 on order, and **Delta Air Lines** acquired its 47th of 100 ordered -932ER/Ws (SN 31958). It and the other nine most recently delivered -932ERs were leased from **CIT Aerospace. American Airlines** received its 261st of 305 -823/Ws (SN 31228), and **WestJet Airlines** accepted -8CT/W (SN 40835), and it has 11 more on order. The **United States Navy** acquired one more -8FV/W –P-8A Poseidon aircraft (SN 44151). It will enter service once the electronic equipment is installed. **COPA Airlines** bought two -8V3/Ws (SN 41449 & 44153), and leased one -8V3/W (SN 39967) from **SMBC Aviation Capital. GOL Airlines** took delivery of its 99th -8EH/W (SN 40741), and has seven more on order. **Air Lease Corp. (ALC)** leased two -8SH/Ws (SN 42051 & 42061) to **Jin Air. GECAS** leased its second -86N/W (SN 43407) to **Myanmar National Airlines**. **Boeing** delivered nine -800s to Chinese airlines, including three -89L/Ws (two were SN 44923 & 44924) to **Air China. China Eastern Airlines** bought two -89P/Ws (SN 41471 & 41491), and transferred the latter airplane to **Shanghai Airlines. Shandong Airlines** acquired its 47th and final -85N/W (SN 41628). The airline may have several more -800/Ws on order that are still listed as "undisclosed". **Xiamen Airlines** acquired two -85C/Ws (SN 39917 & 40959) and has five more on order. **Fuzhou Airlines** picked up its first -84P (SN 61321). The order and delivery were attributed to an undisclosed customer. **Bank of Communications (BoComm) Leasing,** China, leased a second -8LY/W (SN 44381) to **Kunming Airlines. AerCap** leased -81B/W (SN 41613) to **China Southern Airlines,** one -89P/W (SN 41813) to **China Eastern,** and -8U3/W (SN 41812) to **Garuda Indonesia Airlines. Lion Air** took delivery of three -8GP/Ws (SN 39867, 39868 & 39875). The first was transferred to **Malindo Air,** the second was transferred to **Thai Lion Air,** and the third was sold to **Avolon** for lease to **Malindo Air. Silk Air** obtained -8SA/W (SN 44230), and **BOC Aviation** leased the first of three -8H6/Ws (SN 41767) to Turkish low-cost airline **Pegasus Airlines**. The remaining two are scheduled for delivery within the next three months, and they were acquired from **Boeing** after **Malaysia Airlines**

canceled some -800 delivery positions. **Ryanair** bought three -8AS/Ws (SN 44705, 44706 & 44707) and has 157 more on order. **TimAero Ireland Limited,** a newly listed **Boeing** customer, took delivery of the -800/W (SN unknown) it ordered in February 2014. The company was mentioned in an **Aeroflot** stock report in January 2014 regarding the lease of a 777. **Comair Ltd.,** South Africa, received its sixth -8LD/W (SN 40856) and transferred it to its subsidiary, **Kulula.com. Virgin Australia Air-lines** accepted the 67th of 80 -8FE/Ws (SN 41029). The only -700 delivered in October was the 40th and last -79P/W (SN 39747) for **China Eastern Airlines.**

Ryanair celebrated its 375th direct delivery of a Next Generation 737-800 (-8AS/W SN 44709) on November 10. **Ryanair** is the largest 737-800NG customer in the world, and it has ordered 531 737-800s. The carrier will grow its fleet to more than 540 737 aircraft. The airline became the launch customer of the 200-seat 737 MAX 200 when it ordered 100 airplanes in 2014. **Ryanair** expects its traffic will double from 91 million customers last year to 180 million per annum by 2024. The Dublin-based low-cost airline is celebrating its 30th anniversary of operations since its first flight in 1985.

Dutch Lessor, AerCap, repossessed 737-8Q8 (SN 28825) from Russian carrier **Yakutia Airlines** when the plane stopped in Tel Aviv on a flight from Krasnodar. **AerCap** claimed that the airline was behind on its lease payments, about which **Yakutia** had attempted to negotiate. The contract has now been cancelled. The Yakutsk-based regional carrier also operates two more 737-800s, as well as one 737-700 and one 757-200(F), both leased from **Aviation Capital Group**.

Luxair has acquired 737-86J/W (SN 36875) from **airberlin** in October, to cover an anticipated surge in winter demand as well as for the **Luxair Tours** operations. The airplane was never taken up by the German carrier and was parked at **Berlin Schoenfeld** for the past six months. The new 737 will replace 737-8Q8/W (SN 38819) which was wet-leased from **XL Airways France.**

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Southwest Airlines leased five ex-**Transaero Airlines** 737-7Q8s (SN 29350, 29352, 29354, 29355 & 29359) from **AerCap** in November. Two of the aircraft are in Everett and three are still in Shannon, awaiting transit to the U.S. **Southwest** currently operates 468 737-700s and has been adding second-hand aircraft lately.

Aerolineas Argentinas began phasing out its fleet of 22 leased 737-700s with the first two -73V/Ws (SN 30235 & 30243) having been returned to **GECAS** in October. The aircraft are to be replaced by 20 new 737-800s which are scheduled to arrive from **Boeing** between 2016 and 2018. The -700 fleet was delivered between 2000 and 2007 and are currently used on flights throughout Argentina as well as to the rest of South America.

Boeing Delivered of the 500th New Boeing to GE Capital Aviation Services in November. The Next-Generation 737-86N/W (SN 43408) was leased to **Kenya Airways** and is the 401st 737 delivered to the leasing company. **GECAS** ordered a total of 645 Boeing airplanes, recently adding the 787-10 and the 737 MAX to their order book. The lessor has a large portfolio of **Boeing** airplanes, including 57 777s, 30 767s, eight 747s and four 757s. It owns or services a fleet of 1,840 aircraft and it provides loans collateralized on an additional 400 aircraft. **GECAS** serves more than 270 customers in 75 countries.

Boeing 747. **Korean Air** received its third of 10 -8B5 Intercontinentals (SN 40907) in October. Another two -8B5s (SN 40908 & 60407) will be delivered shortly.

Boeing 767. **Federal Express** took delivery of its 24th new -3S2F (SN 42719 & 43547) in October. The cargo airline has 76 more 767Fs on order.

Boeing 777. **Boeing** delivered one 777F and five 777-300ERs in October. **Ethiopian Airlines** accepted its sixth and final –F60 (SN 42034). **Garuda Indonesia** leased -3U3ER (SN 29145) from **ICBC Financial Leasing** after selling it to the lessor. It is the fifth -300ER to be leased from **ICBC,** and the airline's ninth 777. The airplane was painted in a special **SkyTeam** livery. **Emirates Airlines** took delivery of 76th of 120 ordered -31HERs (SN 42323). **American Airlines** received its 18th of 20 -323ERs (SN 31480), and **China Airlines** accepted -3ER (SN 43979). **Air Lease Corp. (ALC)** leased -328ER (SN 44553) to **Air France.** The airline operates 25 777-200ERs, two 777Fs and 40 777-300ERs, and three of the -300ERs are leased from **ALC.**

AirBridgeCargo Airlines (ABC), part of **Volga-Dnepr Group,** Russia, took delivery of two 747-83QF Freighters (SN 60117 & 60118), in November. They were covered by a Memorandum of Under-standing, signed at the **Paris Airshow** in June 2015, for **ABC** to buy or lease 20 747-8 Freighters over the next seven years. The contract added the **Antonov** An-124-100 to the long-term logistics support for **Boeing** and its partners. One of the two new 747-8Fs was the 100th 747-8 that **Boeing** has delivered. The 747-8Fs were originally built for **Silk Way Airlines** in May and November 2014 respectively and stored in Everett, Wash-ington, until delivery. The planes will be deployed on **ABC's** expanding network under winter schedule 2015/2016, between Asia and the United States. **ABC's** fleet now consists of eight 747-8 Freighters, five 747-400 Extended Range Freighters, and two 747-400 Freighters. **Boeing** said the 747-8 Freighter provides cargo operators the lowest operating costs and best economics of any large freighter airplane while providing enhanced envi-ronmental performance. It offers 16 percent more revenue cargo volume than the 747-400, while keeping its iconic nose door.

EVA Air, Taiwan, celebrated the delivery ceremony for the carrier's 22nd 777-300ER in the airline's new livery on November 11. The 777-35EER (SN 44554) was the first of four to be leased from **Air Lease Corporation (ALC).** The next three 777s are scheduled for delivery in 2016 and 2017, and all will come from **ALC's** order book. The airline expects to operate more than 30 777-300ERs, by the end of 2017. The airline also has one 777-300ER and five 777Fs on order for delivery by the end of 2016.

Air Austral retired its 777-29M (LR) (SN 40955) when it determined the plane was not suited for its non-stop Dzaoudzi-Paris flight. It will be replaced with a 787-8 in May 2016. The aircraft was recently ferried to Victorville, California, for storage. **Air Austral** has two early-model 787s (SN 34491 & 34510) on order, that were originally ordered by **All Nippon Airways**. The Réunion-based carrier also flies three leased 777-300ERs.

Boeing 787. **Boeing** delivered five 787-8s and six 787-9s in October. **Kenya Airways** acquired its last two -8s (SN 36045 & 36046) on order, and it now has nine in its fleet. **BOC Aviation** bought the new Dreamliners from **Kenya,** and long-term leased them back to the airline. These are the first 787s in **BOC's** portfolio. **Avianca** received its sixth of 15 -8s (SN 37507), and **Oman Air** took delivery of its first of six -8s (SN 42378). The 787 entered service on October 18. **Scoot** acquired its third -8 (SN 37120), and its sixth -9 (SN 37119). The airline ordered 10 of each type. **British Airways** acquired its

second and third of 22 -9s (SN 38617 & 38621), and **Air New Zealand** added -9 (SN 37964) to its fleet of five 787s. **Japan Airlines** acquired its second -9 (SN 34841), and has 18 more on order. **Vietnam Airlines** took delivery of its fourth -9 (SN 35154) and has four in backlog. To date, **Boeing** has delivered 340 Dreamliners and has another 784 on backlog.

Qatar Airways took delivery of its 24th and 25th 787 Dreamliners (SN 38342 & 38343) in November.

KLM Royal Dutch Airlines celebrated the delivery of its first 787-9 Dreamliner (SN 38760) on November 13. The airplane was leased from **AerCap.** The **Air France-KLM Group** has 19 787-9s and six 787-10s on order and will lease another 11 787s from **AerCap.** The airline will take delivery of six ordered 787-9s in 2016, followed by two in 2017 and one each in 2018, 2019, 2022, 2023 and 2024. The first three 787-10s are expected in 2020, followed by three more in 2021. **KLM** will operate its first 787-9 on its Amsterdam – Abu Dhabi – Bahrain service. Over the coming years the 787 will play a key role in the Dutch flag carrier's fleet renewal and expansion. **KLM** was founded in 1919, and is the oldest airline still operating under its original name. Over the past half century **KLM** has taken delivery of more than 200 **Boeing** airplanes. Based at Amsterdam's **Schiphol Airport**, the airline serves 135 destinations worldwide.

Regional Jet

Bombardier did not deliver any commercial jets in October but did hand over two CRJ900NGs (SN 15380& 15381) to **PSA Airlines** in November, and they will be operated for **American Airlines** under the **American Eagle** brand.

Colorful Guizhou Airlines, Guiyang, China, is negotiating the lease of CRJ900 aircraft from Chinese lessor **AVIC International Leasing. Bombardier** and **AVIC** signed a Memorandum of Understanding "for an expanded cooperation to support the financing of commercial aircraft sales in China and globally" in February 2012, but no airplanes were ordered. In April 2015, **Export Development Canada (EDC)** agreed to finance the purchase of CRJ900 NextGen aircraft by **AVIC**. The deal covers the 28 CRJ900NGs that **China Express Airlines** ordered. **Colorful Guizhou** ordered seven **Embraer** E-190s and took 10 options earlier this year. The first of the Brazilian jets is expected in December. The airline is a joint-venture between **Guizhou Industrial Invest-ment Group** (90 percent) and **Weining County Construction Investment Group** (10 percent). **Colorful Guizhou** applied for its Air Operator Certificate (AOC) with the **Civil Aviation Administration of China (CAAC)**, and will commence scheduled domestic passenger flights out of its Guiyang hub, when it receives approval.

Embraer. **J-Air**, Japan, accepted its 16th EMBRAER 170-100 (E170) (SN 17000515) in October. **Embraer** delivered two more EMBRAER 170-200 LRs (E175) (SN 17000511 & 17000513) to **American Airlines** last month, for a total of 17 of the 60 ordered E175s. **Compass Airlines** will operate **American's** first 20 E175s under the **American Eagle** brand. **Republic Airlines** bought two E175s (17000509 & 17000510) for operation for **United Express. Hebei Airlines** acquired its sixth EMBRAER 190-100 (E190) (SN 19000694). **AZUL Linhas Aereas Brasileiras** accepted its 80th EMBRAER 190-200 (E195) (SN 19000696) in October and its 81st E195 (SN 19000697) in November.

Sukhoi. **Aeroflot** took delivery of its 31st Sukhoi Superjet 100-95B (SN 95090) in October. The airline still operates 21, having retired its 10 oldest SSJ100s. **Interjet**, Mexico, acquired its 17th Superjet 100-95B (SN 95071) from **Superjet International** in Venice, Italy in November. **Alliance Air,** Armenia,

will launch scheduled passenger operations March 27, 2016, with a pair of leased Sukhoi Superjet 100s. The airline secured its Air Operators Certificate (AOC) from the **General Department of Civil Aviation of Armenia (GDCA)** recently. **Alliance** will acquire four more SSJ100s in 2017. Its first two Superjets are currently in storage at **Moscow Zhukovsky Airport**, and they are probably ex-**Aeroflot** machines that are owned by **VEB Leasing.** The airline intends to operate flights from its base in Yerevan to Beirut, Tehran and several Russian cities.

Turboprop Aircraft

ATR. **Wings**, Indonesia, received its 26th ATR 72-600 (SN 1282), and **AZUL Linhas Aereas Brasileiras** also acquired its 26th -600 (SN 1284) in October. **Flybe** leased its second -600 (SN 1277) from **Avation PLC**, and is operating it for **SAS – Scandinavian Airlines.** Another three 70-seat ATR 72-600s will be leased from **Avation** in 2015 and 2016. **Nordic Aviation Capital** leased its 11th new -600 (SN 1254) to **PT Garuda Indonesia**. The plane is part of a twenty aircraft lease deal signed in 2014, and it is the 21st aircraft that **NAC** has leased to the Indonesian flag airline. **Garuda** is scheduled to receive nine ATR 72s in 2016, but the airline wants to delay six of them until 2017. **Air India Regional** leased its second -600 (SN 1272) from **GECAS,** and the fifth -600 in its fleet. The **Government of Algeria** took delivery of its second -600 (SN 1280) in October and the **Turkish Navy** bought a -600 (SN 1274) in September. The **Turkish** -600 will be converted into an **ATR** Maritime Patrol Aircraft.

HOP! Air France will take delivery of its fifth ATR 72-600, registered F-HOPN (SN 1288) in November. The airlines four other -600s are registered F-HOPL, F-HOPX, F-HOPY & F-HOPZ, and all five replace some of the elderly ATR 72-500s which were delivered eight to 15 years ago.

Braathens Aviation, Sweden, took delivery of its first of five ATR72-600s (SN 1276) in November. The airplane was originally destined for **MASwings**, Malaysia. The airline also holds 10 options. **Braathens Aviation** will replace its ageing fleet of twelve Saab 2000s with the new ATR 72s. It currently leases five ATR 72-500s from fellow **Braathens Regional Airlines** affiliates.

Papua New Guinea Carrier, Airlines PNG, formally changed its name to **PNG Air** and took delivery of its first ATR 72-600 Combi (SN 1287) in October. The aircraft was painted in the airline's new livery and fitted with an interior which was designed to reflect the nation's heritage. **ATR** said the newly delivered -600 is configured as a passenger-cargo "combi" which doubles the previous cargo capacity to 19 cubic meters, while seating up to 44 passengers. This gives **PNG Air** with greater operation flexibility, and the airline is the first to operate the ATR 72-600 aircraft in the "combi" configuration. The ATR is the first of seven -600 series aircraft the airline ordered in 2014. The first one is leased from **DAE Capital** and the other six will be purchased by the airline. Those aircraft will be delivered in 2016 and 2017. The carrier also holds options for another 14 aircraft. The new planes will gradually replace a fleet of 14 ageing 36-seat **Bombardier** Dash 8-100s. **PNG Air** also signed a comprehensive long-term **Global Maintenance Agreement (GMA)** providing a total support package for the airline's fleet of -600 aircraft. The **GMA** contract will run for 12 years and covers a large scope of component overhaul and engineering services. They include repair and overhaul of Line Replaceable Units (LRU), maintenance of propellers, landing gear and leading edges. The support package also provides pooling services at **ATR** base Singapore and on-site stock access at airline's home base in Port Moresby. The component supply and logistics will be realized via the **ATR** facilities in Singapore to and from Port Moresby, **ATR** said.

Bombardier delivered two new Q400 NextGens (SN 4507 & 4508) to **Air Canada Express** in October. **Nordic Aviation Capital** sold one Dash 8-Q300 (SN 591) to **Island Aviation Services,** Maldives Islands.

Volotea Airlines, Spain, will replace its fleet of 19 717-200s with A319-100s starting in February 2016. The airline will lease two A319s (SN 2113 & 2122) from **AerCap** after they are returned by **Air Malta** in December**.** The low-cost carrier will acquire another two A319s in the same month. The founder and CEO **Carlos Muñoz** said, "We are very pleased to incorporate these four A319 to our fleet and become an **Airbus** operator in the long term. In the coming years we expect to have a 100 percent A319 fleet." He said the 717 was popular with customers, but a shortage of available airframes limited its long term appeal. One can assume that the 717s will be snapped up by the only other operators, **Delta Air Lines, Hawaiian** and **Qantaslink.** Four of the 717s are leased from **Falko Regional Aircraft** and the rest are leased from **Boeing Capital Corporation. Volotea** is supposed to acquire two more ex-**Blue1** 717s from **Falko**, this year. **Blue 1** ended 717-200 operations on October 3 and three of **Blue1's** five 717s will be sold to **Delta Air Lines**. The **Boeing** 717 was built between early 2000 and May 2006.

Antiques and Other Junque

Biman Bangladesh Airlines will cease A310-300 operations in November 2016, Air Marshal **Jamal Uddin Ahmed**, Chairman of **Biman's** board of directors, said. The Bangladeshi national carrier still flies two A310-325Ts (SN 594 & 700), but their poor fuel economy and lack of spare parts have forced **Biman** to withdraw the first in June and the second in November 2016.

KLM Royal Dutch Airlines is retiring its fleet of 16 747-400M Combis and parked -406M (SN 26373) at Teruel, Spain, in October. It will be returned to its lessor **CIT Aerospace** in early January 2016. The second -406M (SN 25413) will be grounded by March 2016. **KLM's** fleet -406Ms is scheduled to be phased out between 2016 and 2020. The Dutch carrier's five all-passenger 747-406s averaging 25 years of age, and three 747-406Fs which were delivered in 2003 and 2004. The 747-406Ms average nearly 22 years of age. The fleet will be replaced by 19 787-9s and six 787-10s that were ordered by **Air France-KLM**, and a dozen will be leased from **AerCap.** The first leased 787-9 was delivered on November 13.

EVA Air has ended MD-90 revenue operations when it stored its last two aircraft (SN 53572 & 53568) in November. The other four (SN 53534, 53537, 53567 & 53571) were sold to **Delta Air Lines,** the first two in 2014 and the latter two in September and October 2015. The airline had previously intended to ground its MD-90s in May 2016. **EVA's** subsidiary, **UNI Airways** still operates two MD-90s (SN 53569 & 53574). Three of its other MD-90s (SN 53535, 53554 & 53601) were sold to **Delta** in 2014.

The World's Oldest DC-9-10 will retire from commercial service on November 28. The plane is currently in service with **Fly SAX,** Kenya. DC-9-14 (5Y-XXA, SN 45725, Line Number 19) will be flown from Nairobi to the **Finnish Aviation Museum**, Helsinki, Finland, where it will be put on display. The plane was built in December 1965, and operated for 11 airlines over its 50 year career.

Accidents and Safety

From Aviation Safety Foundation

Metrojet Airlines Airbus A321-231 (EI-ETJ, SN 663), leased from **AerCap,** broke up in midair over central Sinai Peninsula, Egypt, on October 31, 2015. There were no survivors among the seven flight crew and 217 passengers. The **Metrojet** flight took off from Sharm el Sheikh and crashed 25 minutes later. After a week of speculation, analysts concluded that a bomb took down the airplane after it reached cruising altitude. The cockpit voice recorder and flight data recorder were both found and are being analyzed. The airline is based in **Kogalym International Airport,** Tyumen, Russia, and has a hub in **Domodedovo International Airport**, Moscow. It started operations in May 1993, and flew mostly international charter services to leisure destinations with one owned A320-211 (SN 1554), one A320-232 (SN 2029) leased from **GECAS,** and now three A321-231s (SN 668, 787 & 954) leased from **AerCap**.

Dynamic International Airways Boeing 767-269ER (N251MY, SN 23280) caught fire before it could take off from **Fort Lauderdale International Airport,** Florida, on October 29, 2015. The crew of a **Silver Airways** flight radioed that the **Dynamic** 767 was leaking fuel or fluid from the Number 1 engine, and then an unidentified flight radioed "Engine's on fire, engine's on fire!" Twenty-one passengers sustained minor injuries and one was seriously injured when the aircraft was evacuated. The fire was extinguished by fire services. A coupling assembly, located in the engine pylon, had become disconnected from the fuel line causing the fuel leak and subsequent fire. **Dynamic International Airways** was founded in 2010, and it currently operates four 767-200/ERs (SN 23280, 23974, 23213 & 24145), one -300ER (SN 25443), and one -200ER-BDSF (SN 23803), with an average fleet age of 28 years. It flies international services to Guyana, Hong Kong, Palau, and Venezuela from New York and Florida, and to Changsha, China, from Los Angeles.

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Alexander Bortnikov, head of Russia's **Federal Security Service**, said on November 14 that preliminary investigations had found evidence of a bomb. "We have undertaken the study of personal belongings, luggage, and parts of the aircraft that crashed in Egypt October 31. The results of the examination showed traces of [an] explosive of foreign production. According to our experts, an improvised explosive device with the equivalent of up to 1 kilogram of TNT exploded on board of A321 that led to the aircraft's destruction in the air, which explains the fuselage parts spread at a great distance [from each other]. You can definitely say that this is a terrorist act." Egyptian authorities confirmed that closed circuit TV footage showed a baggage handler carrying a suitcase from an airport building to another man who was loading luggage onto the **Metrojet** A321. The Egyptian police detained 17 people for questioning.

Allied Services Limited Antonov An-12 freighter (EY-406, SN 01347704) was destroyed on November 4, 2015, after it failed to takeoff from Juba Airport, South Sudan. Of the forty-three passengers and crew on-board, only a young boy survived. The airplane was wet-leased from **Asia Airways**, Tajikistan, and the **Tajik Ministry of Transport** has grounded the airline. **Antonov Design Bureau** in the Ukraine issued a strongly-worded statement in which it un-categorically stated that the 41 year-old turboprop was not airworthy at the time of its crash, because it had allegedly missed critical maintenance checks.

Shaheen Air Boeing 737-4H6 (AP-BJO, SN 27166) was substantially damaged in a landing accident at **Lahore-Allama Iqbal International Airport**, Pakistan, on November 3. At least 10 people suffered minor injuries. The main gear leg was torn off and the aircraft came to rest on the grass besides the runway with the rear fuselage and engines resting on the ground. The 22 year-old 737 Classic will probably be scrapped.

Senegalese Air Force Fokker F.27-400M transport (6W-STF, SN 10591) was substantially damaged when it made a forced landing near Koussané, Mali. The two crew sustained serious injuries, when the aircraft landed in a field, and the outer part of the left hand wing broke off. The 36 year old will probably be written off.

Comair Boeing 737-4L7 (ZS-OAA, SN 26960) was severely damage in a landing accident at **Johannesburg-OR Tambo Airport**, South Africa, on October 26, 2015. The 94 passengers and six crew members were not injured. The plane landed and the left hand main landing gear collapsed, causing the aircraft to skid to a stop on its left engine nacelle and wingtip. **Comair** is a **British Airways** franchise partner. The 737-400 was delivered in 1993.

U.S. Air Force Lockheed Martin AC-130J Ghostrider gunship (09-5710, SN 5710) had to be scrapped after a training mishap on April 21, 2015. The **Air Force Materiel Command** said the Hercules received damage estimated at more than $115 million after a flight-test crew lost control and over-stressed the airframe. The **Accident Investigation Boards (AIB)** report stated, "The aircraft exceeded the targeted angle of sideslip until it departed controlled flight. [It] momentarily inverted, before being recovered after losing approximately 5,000 feet of altitude" in a near vertical drive. The aircraft's crew escaped injury and the plane landed safely, but the AC-130H was judged a total loss, having exceeded its Design Limit Load, by experiencing 3.19 times the normal force acceleration 'G's.

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Batik Air Boeing 737-9GPER/W (PK-LBO, SN 38731) was damaged when it left the runway upon landing at **Yogyakarta-Adisutjipto Airport,** Indonesia, on November 6, 2015. The aircraft came to rest on the grass with a collapsed nose landing gear.

United Nations World Food Program Hawker Siddeley HS-780 Andover freighter (TL-AEW, SN Set 13) failed to take off from **Malakal Airport**, South Sudan, on November 10, 2015. All four crew members survived the accident, but the airplane was burned out. The HS-780 was leased from **Westwind Aviation.**

Lao Skyway Xian MA60 (RDPL-34226, SN 0801) ran off the runway upon landing at **Vientiane-Wattay Airport**, Laos, on November 13, 2015. The aircraft came to a stop on soft ground and damage to the aircraft is being assessed. There were no injuries to the crew nor passengers. Witnesses reported the aircraft suffered an engine failure.

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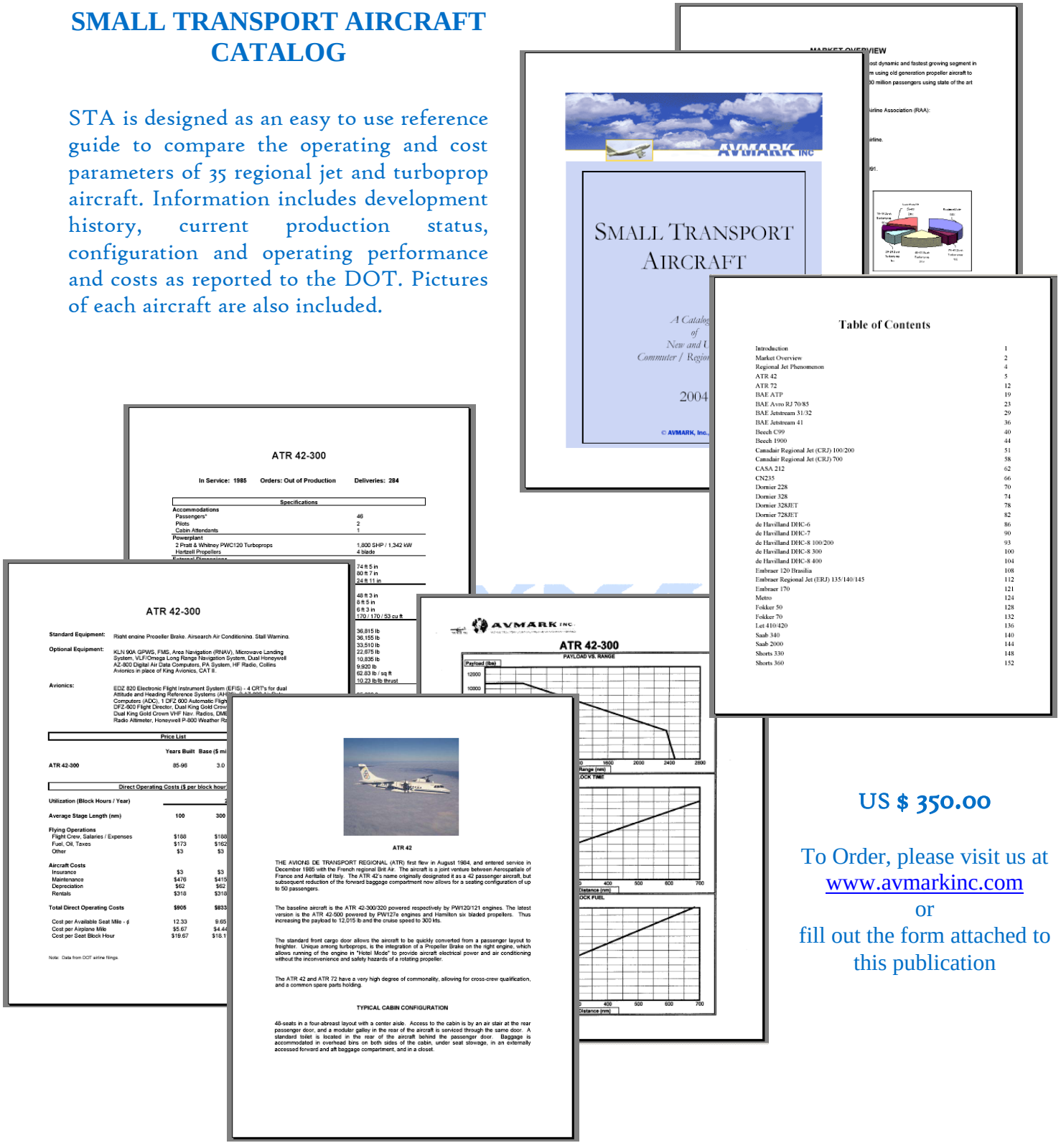

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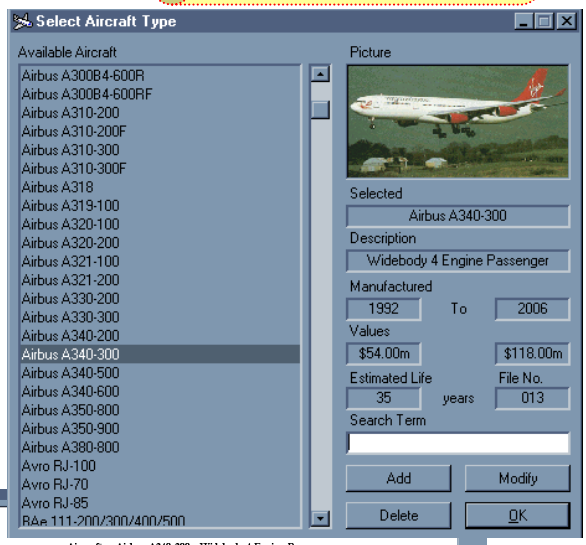

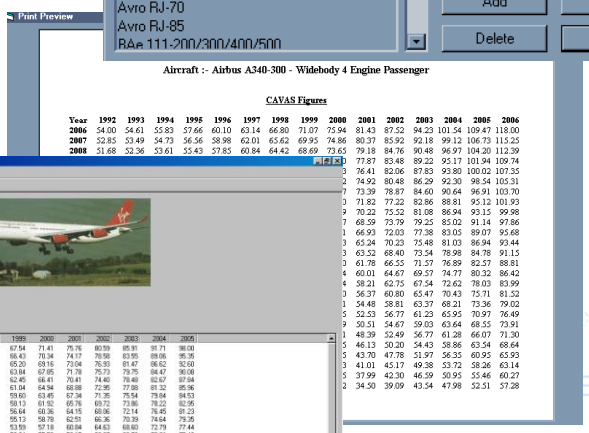

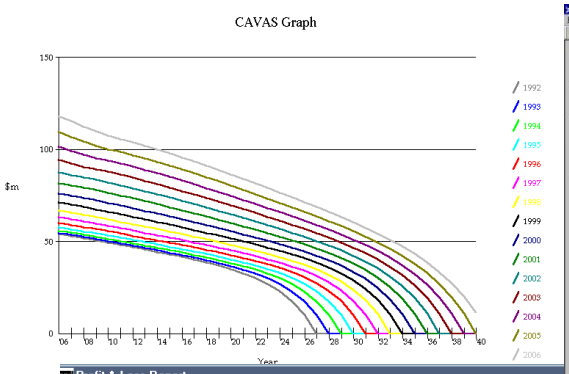

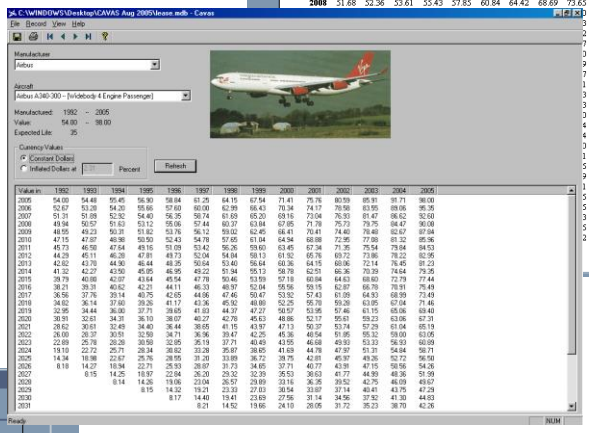

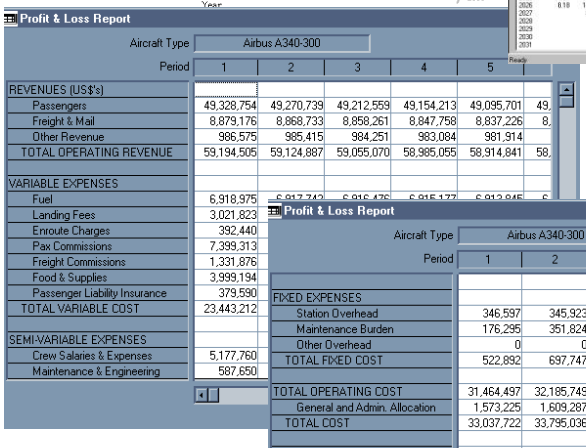

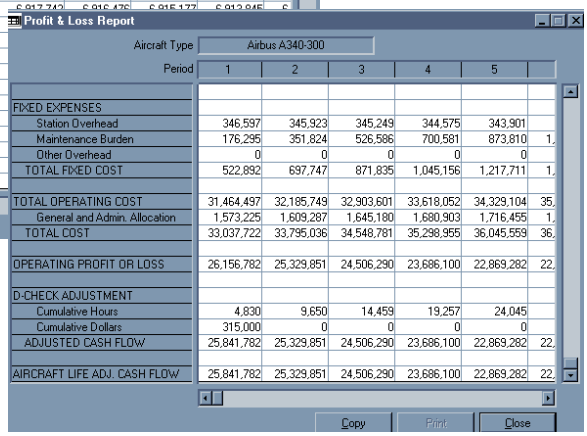

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