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Market Comment

Bigger is not Better? Airbus' Chief Financial Officer Harald Wilhelm admitted that the manufacturer may have misjudged the market for the A380 after failing to win any new airline orders this year. The airframer said the A380 program will break even in 2015, 2016 and 2017, but it probably will not in 2018. **Airbus** has the option to upgrade the A380 with new engines or discontinue the program, Mr. **Wilhelm** told investors at a meeting in December. This is the first year since the A380 was launched in 2001 that an airline has not placed a new order for the super jumbo-jet. **Airbus** did sell 20 A380s to **Amedeo** in January, but the leasing company has yet to sign up an airline customer. The backlog shrank in July when **Airbus** abruptly cancelled **Skymark Airlines'** contract for six A380 orders, while two nearly finished **Skymark** planes sat on the ramp at Toulouse. The manufacturer has 171 A380 orders to fill, enough for five and a half years production at a build rate of 30 per year. Its biggest customer, **Emirates** has ordered 140 airplanes and has 55 in service and 85 more on backlog. **Emirates** is also the biggest promoter of the re-engined A380neo. Other airlines are finding it hard to fill the 500-plus seats in the A380 and are rethinking their commitments. **Air France KLM** CEO **Alexandre de Juniac** praised the A380, saying ñItôs an excellent plane, but it only works for the right destinations,ò but he plans to exchange **Air France's** last two A380 orders for smaller twin-engined aircraft. **Lufthansa** already cancelled three A380 orders. **Virgin Atlantic** has delayed delivery of its six A380s until after 2018 and may switch to the A330/A350 family. **Air Austral,** and **Hong Kong Aviation** are also unlikely to take their two and 10 planes, respectively. **Transaero's** order for four may be threatened by economic sanctions on Russia. All three airlines are supposed to receive their first A380s in 2015.

Airbus's Executive VP, **Chris Buckley,** faulted the company for letting customers install opulent interiors, rather than marketing the aircraft as a super-efficient, high capacity people mover. **Airbus** spent $25 billion to develop the A380, which is popular with travelers, but most carriers favor twin-jet widebodies that are more fuel efficient and can fly to more airports. **Emirates** President **Tim Clark** is pushing **Airbus** to launch the A380neo with new engines to improve the planeôs fuel efficiency, but **Airbus** is loath to invest more in a plane that is such a slow seller. The engine upgrade and redesigned wing may cost **Airbus** ú2 billion ($2.47 billion). Mr. **Clark** commented, ñItôs a pity, [because the A380] is a very big cash generator for us. I just open the doors and

Table of Contents

Market Comment 1

AIRCRAFT & ENGINE ORDERS
Airbus 3
Boeing 7
Regional 11
Order Changes 12
Leasing Companies 12
Engines 14

AVIATION BUSINESS
Airline News 15
Bankruptcy 17
Technical 19
Cargo Pallet 20
Military Market 20

AIRCRAFT DELIVERIES, SALES & LEASES
Airbus 21
Boeing 24
Regional Jet 26
Turboprop Aircraft 27
Accidents & Safety 28

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

the people come.ò **Emirates** ordered 50 new A380s at the **Dubai Airshow** in 2013 with the hope that they would be delivered as A380neos. The first of that batch are due in 2016. **Rolls-Royce** is already working on an update of the A380ôs Trent 900 engines to boost reliability and improve fuel burn. The new Trent 900 EP2 or Enhancement Package 2 will be ready in 2015, and may encourage **Emirates** to switch from its current **Engine Alliance** GP7270 engines. **Rolls** indicated it was willing to upgrade the Trent further for the putative A380neo, but that may take up to four years to accomplish. **Airbus** forecast a market for 1,200 very large aircraft when it started marketing the A380 in 2000, and has sold only 318 in the following 14 years. So far China, India and Japan have been major disappointments, because they seemed to be perfect markets for high-capacity airliners. To date, only **China Southern Airlines** has bought the plane, having taken delivery of five. **Kingfisher**, India, and **Skymark** dropped their orders, and only **Skymark** intended to operate high-density, low-fare services with its A380s. In contrast, **Airbus'** A320neo Family, the A330neo and the all-new A350 have been flying off the shelves, with 3,362, 110 and 778 sales respectively, before delivery of the first one. Some analysts say it is time for **Airbus** to pull the plug on the A380 and for the company to build down its backlog. Baring more cancellations, the last A380 would roll of the production line in 2019 or 2020.

Airbus' Management quickly rebuffed any speculation that the company would cancel the A380. **Airbus** CEO **Fabrice Brégier** vigorously defended the A380 at an investor meeting, and he insisted that it would be re-engined and stretched ï eventually. The company will address its marketing problem by pushing for sales of high-density models. The A380 can carry around 550 passengers in three classes, but airlines have configured it with spacious luxury seats lowering capacity to lower than 500 seats. The existing plane is certificated to carry up to 850 passengers in a single class. A new section could be added to the fuselage, allowing the proposed A380-stretch to carry about 1,000 people.

Emirates' President **Tim Clark** reacted strongly when **Airbus** hinted it may stop making the A380. He told the press, ñI am not particularly happy as you can imagine. We are on the hook for this plane. I get pretty miffed when we have put so much at stake.ò He reiterated that **Emirates** would buy even more super jumbo-jets if **Airbus** launches the re-engined A380neo. An upgraded **Rolls-Royce** engine could offer 12 to 15 percent lower fuel consumption. Mr. **Clark** said **Emirates** would eventually replace all of its 140 standard A380s with the upgraded version.

So far, there is no used market for the A380, since the first ones will not come off lease for several years. If **Airbus** stops A380 production, it would severely impact the second-hand value of the type. Mr. **Clark** said the airline would hold **Airbus** to its contract to deliver all the A380s it ordered, while **Airbus** said it may have to drop some **Emirates** orders to clean up its production schedule if it halts production. These questions may be moot because **Airbus Group** CEO **Tom Leahy** said there were 71 megacities that need the A380. This market has to grow, and ñthe A380 will dominate the market in years to come.ò

It is quite possible that the era is passing for giant four-engined flagships with luxurious cabins for the wealthy elite. If the jumbo-jets can be reconfigured into long-haul, low-cost, low-comfort, people-movers and marketed for mass transportation, perhaps the manufacturers will sell more of them. The 800-seat A380 is list priced at $350 million each, so the flag carriers are loath to try and the budget airlines are loath to buy. At least **Airbus Management** is having a discussion about the future of the A380 and what to do with it.

Airbus Orders

Airbus had a Big Month in November, booking 248 orders which boosted the companyôs backlog to 6,036 aircraft, an **Airbus** and industry record. The manufacturer delivered 61 airplanes during the month. U.S.-based **Delta Airlines** placed a firm order for 25A350-900s, and **Air Mauritius** firmed up its acquisition for four A350-900s, bringing the A350 XWB backlog to 778 from 41 customers. **Delta** also purchased 25 A330-900 and **CIT Group** bought 15 A330-900s. These were the first firm orders for **Airbus'** A330neo variant which was launched in July. Single-aisle A320 Family sales were led by **Azul Brazilian Airlines'** purchase of 25 A320neo and 10 A321neo aircraft. **CIT Group** ordered five A321ceo airliners, and **JetBlue Airways** booked 10 A321neos. Another U.S. carrier, **Frontier Airlines** purchased nine A321ceo aircraft. Three **Undisclosed Customers**

Boeing's 747-8I has fared even worse than the A380, winning 51 orders from four airlines, of which only 26 are on backlog. **Boeing** has sold 68 747-8Fs and delivered 55 to date. With only 39 new 747s to be built, the company decided to lower the yearly output by 2.4 aircraft starting in September 2015. Production will drop from 18 747-8s to 15.6 per annum. This will stretch the production period to 28 months, hopefully until a rebound in the international cargo market. **Boeing** said, ñWeôre making this minor adjustment because the near-term recovery in the cargo market has not been as robust as expected. We continue to believe in the long-term strength of the freighter market and the 747-8 is uniquely positioned to capture this demand.ò The company cut 747 production 14 months ago, from 21 747-8s per year to 18. Some **Boeing** suppliers warned that it would be contractually difficult to reduce the 747 production rate below 1.5 per month. There comes a point where the per-unit cost becomes prohibitive. **Boeing** won two orders for 747-8s this year, but lost two orders from **GECAS. IATA** recently predicted that annual cargo traffic growth will average about 4 percent through 2018. This is below the 5 percent yearly growth that **Boeing** said was necessary to stimulate demand for new freighters. Demand for the passenger 747-8I has failed to pick up as well. One customer, **Transaero** may not be able to take delivery of its four passenger 747s due to sanctions on Russia. **Boeing** proposed design changes that could allow the 747-8 Intercontinental to fly non-stop from Asia to the U.S. East Coast or from the Middle East to the West Coast. **Air China, Korean** and **Lufthansa** are the only flag carriers to buy the 747-8I, the others opted for the A380 or 777-300ER. In the future, the 747-8Iôs biggest competitor will be **Boeing's** newly launched 777-9X which offers the 747ôs passenger capacity and better fuel efficiency than the 777-300ER. It will be available in 2020. Even the 777-300ER is more fuel efficient on a seat-mile basis than the 747-8I, **Boeing** admitted.

placed major orders for A320 Family aircraft. One customer committed to buy 30 A320neo, 14 A320ceo and six A319ceo jetliners; another, believed to be **Spring Airlines,** purchased 30 A320ceo aircraft, and a third unidentified customer will acquire 15 A320neo, 13 A320ceo, 10 A321ceo and two A319ceo airliners. As of November 30, 2014, **Airbus'** net orders stood at 1,031 aircraft, after 297 cancellations and order conversions. The manufacturer delivered 46 A320 Family jetliners, 12 A330s and three A380s. This raised this yearôs delivery total to 554 aircraft which were received by 85 customers. This was eight fewer than at the same point in 2013.

Delta Air Lines ordered 25 **Airbus** A330-900neo and 25 A350-900 wide-body jets in November. They were worth about $13 billion at list prices. The **Rolls-Royce** Trent 7000-powered A330neos are catalog priced at $275 million, and Trent XWB-engined A350-900s are priced at $295 million before typical industry discounts. **Rolls-Royce** said the engine order was worth $5 billion and it included the **TotalCare** long-term post-delivery services as part of a support package. **Delta's** first A350-900neo will arrive in 2017 and the first A330-neos will be delivered in 2019. The airline intends to retire its last 16 747-400s by 2017, and will replace some of its long-haul 767-300ERs. The airline currently flies 57 A319ceos, 69 A320ceos, 11 A330-200s and 21 A330-300s that it acquired with **Northwest Airlines**. It ordered 10 A330-300s and 45 A321ceos last year.

Airbus Orders, Deliveries and Backlog November 2014

NOV ORD	NOV DEL	NOV CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-0-	79	79	-0-
			A319		
8	2	-0-	1,474	1,424	50
			A319neo		
-0-	-0-	-0-	49	-0-	49
			A320		
57	31	-0-	4,695	3,819	876
			A320neo		
70	-0-	-0-	2,579	-0-	2,579
			A321		
24	13	-10	1,553	1,009	544
			A321neo		
20	-0-	-0-	734	-0-	734
			A330		
-0-	12	-0-	1,354	1,139	215
			A330neo		
40	-0-	-0-	40	-0-	40
			A350		
29	-0-	-1	778	-0-	778
			A380		
-0-	3	-0-	318	147	171
This Month			**This Year**		**BL**
3	61	-11	**1,031**	**554**	6,036

Airbus sold 14,846 aircraft and delivered 8,810 as of November 30, 2014. Two hundred ninety seven orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.

Frontier Airlines placed a firm order for nine **Airbus** A321ceo (current engine option) aircraft, worth $990 million at list prices. This is the airlineôs first purchase of **Airbus'** largest single-aisle airplane. It

operates 35 A319s, and 20 A320s which are powered by CFM56 engines. **Frontier** has 80 A320neo (new engine option) Family aircraft on order. The airline has not announced its engine selection or the seating configuration for the A321s.

China Aircraft Leasing Company (CALC), Hong Kong, signed a Memorandum of Understanding (MoU) with **Airbus** for 100 A320 Family aircraft. The commitment covered 74 A320neo, 16 A320ceo and 10 A321ceo aircraft which were worth approximately $10.2 billion at list prices. The aircraft will be delivered from 2016 to 2022, and will be funded by bank loans, debt, equity financing and working capital, the lessor said. **CALC** previously placed a firm order for 40 A320 Family aircraft. **China Aircraft Leasing** wants to build up a fleet of at least 100 aircraft by 2015 and is focusing on medium-haul aircraft for the Chinaôs crowded domestic routes. The countryôs leading independent lessor has a 3 percent share in the worldôs fastest-growing aviation market. Chinaôs 800-plane leasing market is currently dominated by **AerCap** and **GECAS.**

Finnair was one of the A350 XWBôs launch customers and it exercised its options for eight additional A350-900s. The planes were list priced at approximately ú1.9 billion ($2.36 billion ï $295 million each). **Finnair** was the first European airline to buy the A350 XWB, when it ordered 11 A350-900s, and optioned eight in 2007. The carrier will take delivery of its first four A350s in the second half of 2015 and seven A350s in 2016-2017. Their first A350 (SN 018) is on the final assembly line at Toulouse and will be ready to fly by next autumn. Deliveries of the latest batch will start in 2018 and end in 2023. **Finnair's** A350 XWBs will seat 297 passengers in a two class configuration and will be deployed on long-haul routes to Asia and America from Helsinki. **Finnair** currently operates an all-**Airbus** fleet of 30 A320 Family aircraft, eight A330s and seven A340-313s. The A340s will be replaced by A350s by the end of 2017, and **Airbus** agreed to take four A340-313s (presumably SN 835, 844, 921 & 928 leased from **FAF—Finnair Aircraft Finance**) as trade-ins in 2016 and 2017. The other three early-model A340s will be returned to lessors **AerCap** and **FAF.**

Azul Linhas Aéreas Brasileiras (Azul Brazilian Airlines) ordered 25 A320neos and 10 A321neos. It will lease 20 A320neo Family from **AerCap** and eight from **GECAS.** The aircraft, valued at $6.5 billion ($103 million each) at list price, will enter service from 2016 and through 2023. The Brazilian low-cost airlineôs A320neos will be fitted with 174 economy seats. The A320neos will be powered by **CFM International** LEAP-1A engines and be used on **Azul's** long-haul and high density routes. **Azul's** CEO and Founder, **David Neeleman** said. "With more than 100 destinations, **Azul** will soon offer even more seats on our longer haul flights, allowing us to reduce operating costs. The A320neo is also a perfect complement to our E-Jet fleet, giving us additional seats and capacity that can be dedicated to strategic projects like **TudoAzul, Azul Viagens** and **Azul Cargo**.ò The airline currently operates EMBRAER 190s and E195s, and ATR 72-600s turboprops. In April, **Azul** announced that it would start operating long-haul and new international routes by early December with seven leased **Airbus** A330-200s, and they will lease five A350-900s in 2017 and 2018. **Azul** filed to sell shares in the U.S. and Brazil after buying and leasing the new jets. The Barueri, Brazil-based airline didnôt disclose the size or timing of the IPO-initial public offering, but it had been considering the IPO since May 2013. It canceled its previous plans to go public because the Brazilian stock market dropped to an almost five-year low in March.

CIT Group Inc. signed a firm contract for 15 A330-900neos and five A321ceos that were initially ordered at the **Farnborough International Airshow** in July. **CIT** joins **Delta** as the launch customers of the A330neo. The order was accompanied by the cancellation of one of **CIT's** 15 A350-900 orders in November. **Airbus** said the A330-800neo and the A330-900neo were launched in July 2014 and the first deliveries were scheduled to start in the fourth quarter of 2017. ñThe A330neo incorporates latest generation **Rolls-Royce** Trent 7000 engines, aerodynamic enhancements and new cabin features.ò The A330neo will reduce fuel consumption by 14 percent per seat, making it the most cost efficient, medium-range widebody aircraft on the market, **Airbus** said. The A330neo offers up to 400 nautical miles more range than the A330 and operational commonality with the **Airbus** family.

AirAsia X, the long-haul affiliate of Malaysiaôs low-cost airline, placed a firm order for 55 A330neo aircraft in December. So far, this is the largest single order for the A330 Family and now **AirAsia X** is the biggest airline customer for the A330. The contract firms a Memorandum of Understanding (MOU) for 50 A330neos signed during the **Farnborough Air Show** in July 2014, and added five aircraft. The latest order was list priced at $15 billion ($273 million each). The first A330neos will be delivered in 2018. **Tan Sri Tony Fernandes,** Co-Founder and Director of **AirAsia X** said, ñThis latest deal with **Airbus** will enable **AirAsia X** to consolidate its growth rate in 2015-2017 before ramping up deliveries from 2018 onwards.ò **AirAsia X** will be one of the first operators of the latest version of the highly successful A330.ò The **Airbus** press release stated that **AirAsia X** had total orders for 91 A330s after buying the 55 A330neos. The airline previously ordered 51 A330-300s. It converted seven current A330 orders to the A330neo and the fate of another eight is not yet known. **AirAsia X** also purchased 10 A350-900s (plus five options) in June 2009, for delivery in 2016. Some analysts think that the A330neo will cannibalize A350 sales, so we must wait and see if **AirAsia X** will drop its A350s and standardize on the A330 model.

At an Airbus Tianjin Final Assembly Line (FALC) ceremony in November, **Airbus China** President and CEO**, Eric Chen** said, ñThe 200th **Airbus** A320 Family aircraft assembled in Tianjin marks an important milestone of the **Airbus** partnership with China. We are happy to deliver this aircraft (A319) to **China Eastern Airlines**, and to celebrate this achievement together with the **Tianjin Free Trade Zone (TJFTZ)** and **AVIC**, our partners. We are committed to providing the worldôs best aircraft to our customers and keen to continue our win-win cooperation with China.ò **China Eastern** is one of Chinaôs largest airlines and was the first Chinese airline to operate an **Airbus** aircraft (A310) in 1985. Today, **China Eastern** operates a fleet of more than 270 **Airbus** single-aisle and widebody aircraft. **Airbus** said it, the **TJFTZ** and **AVIC** recently agreed to extend the successful joint venture for another 10 years, from 2016 to 2025. The extension, called ñPhase IIò, will include the final assembly of the A320neo Family from 2017 onwards, for delivery to the Asian region. The **FALC** joint venture was inaugurated in 2008 and was **Airbus'** first A320 Family final assembly line outside of Europe. The others are in Toulouse, France and Hamburg, Germany. The **Tainjin FALC** will be joined by the **Mobile FALC** in Alabama, in 2016. The first aircraft assembled in Tainjin was delivered to **Sichuan Airlines** in June 2009. **Airbus** said, ñChinese aviation industry companies have been fully involved in the design and assembly of **Airbus** aircraft. There are components produced in China on all **Airbus** commercial aircraft types. **Airbus** now has four joint ventures with Chinese partners covering training and support, engineering, final assembly and composite manufacturing, in addition to a number of cooperation projects.ò

Hawaiian Airlines finalized an order for six A330-800neo aircraft that were covered by a Memorandum of Understanding (MOU) signed in July. The new A330neo commitment replaced **Hawaiian's** long-standing order for six A350-800s. The airlineôs President and CEO, **Mark Dunkerley** said, ñThe A330-800neo is an aircraft which meets all of our needs. It is the right size, with the right range and costs, and shares much commonality with our A330-200 fleet.ò The A330neo will reduce fuel consumption by 14 percent per seat, making it the most cost-efficient, medium-range widebody aircraft on the market, **Airbus** said. In addition to greater fuel savings, the A330neo can fly up to 400 nautical miles farther than the A330. **Hawaiian** currently operates a fleet of 19 A330-200 aircraft, and has orders for 16 A321neo aircraft. The first A330neos will be delivered in late 2017.

Avolon Aerospace firmed its commitment for 15 A330neo aircraft that it signed at **Farnborough International Airshow** in July 2014.

Airbus Share Prices Plunged 10 Percent to a six-year low, after the plane maker predicted lackluster profits in 2016. Investors expected robust profits from the deliveries of the new A350s and upgraded A320neo Family. The manufacturer announced plans to cut A330 production to nine aircraft a month, and said it would have to cut production again in 2016. This means **Airbus** is struggling to sell its current A330 model ahead of the first deliveries of the upgraded A330neo in 2017. The company has 215 A330s in backlog, about 24 monthsô production at nine per month. CEO **Tom Enders** told analysts that ñthe most critical years are 2016 and 2017.ò The transition between current models and the new ones will be a bigger drag on profits than expected. Once the A320neo and A330neo come on line, the airframerôs core operating income should return to growth in 2017, a year later than when analysts expected double-digit growth.

Airbus Scheduled the First A320neo Deliveries in November 2015. CEO **Fabrice Bregier** told investors that the aircraft was ñon trackò for certification, and the handover would be in ña little bit less than one yearôs time,ò probably in November. He called the aircraftôs flight-test campaign ñremarkableò and said one airplane had accumulated almost 200 hours. The first test aircraft was powered by **Pratt & Whitney** PW1100G geared turbo fan engines, the same aircraft/powerplant which will be delivered to the first airline. Even though the A320neo development risk is ñrelatively limitedò, Mr. **Bregier** said, ñWe need to make it work.ò As of December 5, **Airbus** had sold 3,362 A320neo Family aircraft, which included the conversion of 102 A320ceo orders by six customers. The A321neo will achieve a 25 percent fuel-burn per seat improvement over the current A321 through higher-density cabin options as well as the new PW1100G engine.

Boeing Orders

Airlines, Lessors and Private Operators Bought One 787 and 223 737s in November, for a total of 224 new sales. **Ryanair** signed a contract for 100 737 MAX 200s and optioned another 100 on November 28. The Irish low-cost carrier finalized the deal that was announced in September. **SMBC Aviation Capital** ordered 80 737 MAX 8s which were valued at more than $8.5 billion at list prices. One **Unidentified Customer** ordered 30 737 MAX in November, and another customer bought four 737-700s and six 737 MAX. One **Business Jet/ VIP Customer** purchased two 737 MAXs in mid-month and another **VIP Customer** ordered a 737-900 BBJ3. More than 50 customers have ordered more than 2,550 737 MAXs as of December 1. **Virgin Atlantic Airways** picked up one of its four 787-9 options. No aircraft were cancelled in November, so this yearôs net bookings stood at 1,270. **Boeing** delivered 57

new airplanes, including 42 737s, two 747Fs, one 767F, six 777s and six 787s, for a total of 590 so far this year.

SMBC Aviation Capital ordered 80 737 MAX 8s in November. They were valued at more than $8.5 billion at list prices. This is the largest single order for the 737 MAX from a leasing company. It will help **SMBC** grow its portfolio of high-demand, fuel-efficient airplanes. The lessor placed its first order with **Boeing** a decade ago. The contract was signed in Tokyo on November 10. **SMBC** was the 50th 737 MAX customer and its order pushed the programôs backlog above the 2,400 mark. **Boeing's *Current Market Outlook*** forecast that airlines will need more than 25,600 single-aisle airplanes over the next 20 years. The manufacturer has done business in Japan for more than 60 years, and built close partnerships with Japanese airlines and its aviation industry. Japanese customers have purchased over 1,000 **Boeing** airplanes and Japanese aerospace companies make a significant contribution to all of its commercial airplane programs. **SMBC Aviation Capital** has 180 **Boeing** airplanes in its portfolio and has 95 airline customers in more than 40 countries.

Boeing November 2014 Orders, Deliveries

NOV ORD	NOV DEL	NOV CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			737		
223	42	-0-	12,523	8,305	4,218
			747		
-0-	2	-0-	1,537	1,498	39
			767		
-0-	1	-0-	1,114	1,066	48
			777		
-0-	6	-0-	1,807	1,254	553
			787		
1	6	-0-	1,055	210	845
This Month			**This Year**		**BL**
224	57	-0-	**1,270**	**647**	5,703

Boeing sold 25,566 aircraft and delivered 19,863 as of November 30, 2014.
The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s.
Sales totals include 106 cancellations.

Ryanair Launches 737 MAX 200. The Irish low-cost carrier finalized its order for 100 737 MAX 200s, valued at $11 billion ($110 million each) at current list prices in late November. The original commitment was announced in September, and the contract includes 100 options for the MAX 200 airplane. The airline is famous for its ability to negotiate steep (up to 50 percent) discounts off the list price. **Boeing** still insists that the 160-seat narrowbody will be the biggest niche in the market, but it developed the 737 MAX 200 for the fast growing low-cost sector, which the company forecasted to account for 35 percent of single-aisle airplane capacity by 2033. The 737 MAX 200 will provide low-cost carriers with up to 11 more seats of potential revenue and up to 5 percent lower operating costs when compared to the 737 MAX 8. **Ryanair's** 737 MAX 200s will be configured with the **Boeing Sky Interior**, which features LED lighting and larger pivoting overhead stowage bins, and 197 seats. **Boeing** can fit in the extra seats because it added an extra passenger door for emergency evacuations and removed the front and rear galleys, eliminating food service. The airline said the MAX 200 will have more leg room than its 737-800s. The 737 MAX 200 will be fitted with **CFM International** LEAP-1B engines, **Aviation Partners Boeing** winglets and other improvements to deliver the highest efficiency, reliability and passenger comfort in the single-aisle

market, **Boeing** said. **Ryanair** CEO, **Michael O'Leary** said his airline ñis proud and honored to become the lead operator of **Boeing's** ñgame-changerò 737 MAX 200 aircraft, which will expand our fleet to approximately 520 aircraft by 2024 and create another 10,000 new jobs for pilots, cabin crew and engineers in Europe, while allowing us to grow traffic from 82 million passengers last year to over 150 million by 2024. The new aircraft will allow **Ryanair** to lower our costs and airfares, while improving our customer experience. As many of Europeôs flag carriers cut capacity on short-haul routes, **Ryanair** looks forward to using these new 737 MAX 200 aircraft to grow at many more of Europeôs primary airports.ò The airline is headquartered in Dublin, Ireland, and operates more than 1,600 daily flights to 183 destinations in 30 countries. It currently operates 300 Next-Generation 737-800s and now operates the largest fleet of **Boeing** airplanes in Europe.

Comlux—The Aviation Group, a Swiss-based VIP charter operator, announced its order for two BBJ MAX 8s in December. This was **Comlux's** first purchase of the BBJ, having ordered **Airbus** ACJs in the past. The company said the long-range of the BBJ MAX 8 was critical to all of our customers, especially those in the Middle East, who often use **Comlux** aircraft for long-haul flights. **Comlux America** will install custom interiors in the two BBJ MAX 8s.

Virgin Atlantic exercised one its four **Boeing** 787-9 options in November. It will be delivered by the end of 2018. The airline may pick up the other three in short order. CEO **Craig Kreeger** said ñWe have not exercised those options, but we are communicating very clearly that we plan to.ò Mr. **Kreeger** also suggested that the airline would buy the 787-10 variant to replace seven Gatwick-based 747-400s that will be retired after the leases expire in 2019. The 323-seat 787-10 is smaller than the A350 and 777, which are also under consideration, but it offers fleet commonality and the attendant efficiency in pilot training among other areas he said. **Virgin** put its first 787-9 into revenue service, becoming the first airline in Europe to operate the variant. It will be joined by the second of the 17 firmly ordered 787s by year-end. The 787-9s are replacing A340s and London Heathrow-based 747s. The first few 787-9s will fly to Boston, Newark, New York and Washington D.C. Eventually it will serve **Virgin's** longest range routes to places like Hong Kong and Johannesburg. Today, the airline has 10 A330s, 15 A340s, 12 747s and one 787 in its long-haul fleet. By the end of 2018, the 787s will comprise almost 60 percent of **Virgin's** fleet.

An Unidentified Customer purchased four 737s at the beginning of December. By mid-month, another **Unidentified Customer** bought 30 737s and six 777s. As of December 19, **Boeing** sold 1,423 new aircraft and lost 106 previous orders for a net total of 1,317.

Jetlines, a new Canadian ultra-low cost carrier, will build its future fleet with five 737 MAX 7s that it ordered in December. The first planes will be delivered in 2021. The order was valued at $438 million at list prices, and included purchase rights for an additional 16 737 MAXs. The new airline is head-quartered in Vancouver, British Columbia, and plans to offer ultra-low-cost airfares on routes that avoid direct competition with other airlines, such as **WestJet** and **Air Canada**. The airline intends to launch services with two A319s shortly, and will have 16 A320 Family aircraft by 2017. The 737 MAX 7 will be capable of flying 140 passengers more than 3,800 nautical miles, approximately 400 nautical miles (741km) farther than the current 737-700. By mid-December, **Boeing** had sold 2,562 737 MAX airplanes to 55 customers worldwide.

BOC Aviation finalized an order for two 737-800s, valued at $186 million at current list prices. The Singapore-based lessor has now committed to buy 95 737NG and 50 737 MAX aircraft, as part of its plan to grow its portfolio of fuel-efficient airplanes. The company bought 30 737-800s, 50 737 MAX and two 777-300ERs in August. The Next-Generation 737 has accumulated more than 6,800 orders worldwide. **BOC** owns one of the youngest fleets in the industry with an average aircraft age of less than four years.

Royal Jet, an Abu Dhabi-based Very-Very Important Person charter company, placed its first orders for two new **Boeing** BBJs at the **MEBA 2014 (Middle East Business Aviation)** show. The two BBJs will be delivered ñgreenò in September and December 2015. The company is the worldôs largest BBJ operator with a fleet of six 737-700BBJs acquired from the **Abu Dhabi Amiri Flight** and **Privatair**.

Kuwait Airways finalized its order for 10 777-300ERs in late December. They were list priced at $3.3 billion, but the flag carrier said it would pay only $1.7 billion for the 10 jets. The 777 deliveries will start in November 2016 and the planes will be used to launch new routes. The press said **Kuwait** was the unidentified customer that placed a firm order for 10 777-300ERs in August. **Boeing** wants to sell as many as 360 more of its current 777 models to maintain production at Everett at its current level of eight per month until production of the new 777X starts. The airline placed a firm order for 10 **Airbus** A350-900s and 15 **Airbus** A320neos in February. That order was list priced at $4.5 billion, but the estimated cost after discounts was about $2 billion.

Boeing Commercial Airplanes VP of Marketing, Randy Tinseth, said it will not extend the 737 MAX 9ôs range to compete with **Airbus'** A321neo. ñWe are very happy with where the MAX 9 sits and feel the competition is simply doing things to catch up with it.ò He said **Boeing** can put an auxiliary fuel tank on the MAX 9, but the company does not see a business case for offering an extended-range version of the plane. Both the MAX 9 and A321neo are filling the bottom half of the 757 market. **Boeing** CEO, **Jim McNerney,** said the company would bring out a 737 MAX replacement around 2030, with a new fuselage, wings and engines, which could help fill the gap left by the 757. **Boeing** sees the single-aisle market as centering around 160 seat- airplanes, such as the two-class configured 737 MAX 8, while the larger MAX 9 will carry about 180 passengers in two classes. **Airbus** sees a greater need for the 185-passenger A321neo because some airlines are ñupgaugingò to larger jets to lower per-seat costs. The A320neo will carry about 150 people in a two-class configuration. So far, **Airbus** has sold 734 A321neos and **Boeing** has 418 MAX 9s on order, while 737 MAX 8 orders lag the A320neo by 1,423 to 2,579.

Air New Zealand (ANZ) said it will exercise two of its eight **Boeing** 787-9s options, raising its 787-9 commitment to 12. The newest two 787s will be delivered in late 2017 and the second half of 2018. The airline has three 787-9s in service, and seven more on firm order. When the options are firmed, **ANZ** will still have six more 787 options. The flag carrier flies its 787s from Auckland to Perth, Shanghai and Tokyo. It will launch services to Honolulu and Tahiti next year.

Air China announced in a regulatory filing in December, that it would purchase 60 737s, including Next-Generation 737 and 737 MAX airplanes. The aircraft will be delivered between 2016 and 2020 and are worth $5.9 billion at current list prices. The order will be posted on **Boeing's** *Orders & Deliveries* website once the order is finalized. **Boeing** said it forecast that China would need more than 6,020 aircraft in the next 20 years. This was an 8 percent rise over last yearôs forecast because overseas leisure travel is driving demand for more planes.

Boeing to Deliver 754 Commercial Aircraft in 2015. The manufacturer will increase production by almost 5.5 percent, the **Aerospace Industries Association** reported. The Washington, D.C. trade group said its forecast was based on information supplied by **Boeing**, even though the company said it would cut production of the 747 to keep from running out of orders. It may also cut 777 production to keep that line operating until it transitions to the next-generation 777X model toward the end of the decade. **Boeing** announced it will boost output of 737 and 787 models, but may delay the increases until 2016. **Boeing** said it plans to build about 752 aircraft in 2015, and it intends to deliver 715 to 725 airplanes in 2014.

Regional Report

Petroleum Air Service, Egypt, exercised an option for its second **Bombardier** CRJ900ER Next Gen, in November.

An Unidentified Customer signed a firm order for **Bombardier** 24 CRJ900 NextGen regional jets worth approximately $1.14 billion ($47.5 million each) at list price, in December.

Embraer Forecasts. The Brazilian manufacturerôs ***China Regional Aviation Market Outlook*** sees a need for 1,020 new 70- to 130-seat jets by the Chinese regional aviation market by 2033. This will represent 16 percent of jet deliveries in that segment. Air travel in China is expected to increase by 6.8 percent annually, due to the countryôs forecasted 5.5 percent annual growth in GDP. Fast urbanization and a growing middle class will also contribute to building China into one of the world's fastest growing markets. China launched an ñEssential Air Serviceò program which offers incentives to regional airlines and it is building more regional airports in central and western China. This program assures a promising future for the regional aviation sector. **Embraer** foresees the delivery of 300 new 70- to 90-seat jets and 720 90- to 130-seat jets in the next two decades. Only 13 percent of the new jets will replace old aircraft in the current fleet, and 87 percent will be used to support market growth. **Embraer** has booked 181 commercial jets from China and has delivered more than 100. It now has an 80 percent share of Chinaôs regional aviation market.

Mitsubishi Aircraft joined the wing and fuselage of it its second Mitsubishi Regional Jet flight test aircraft in December. Final assembly of the second flight test aircraft has largely been completed, except for the mounting of the engines, a **Mitsubishi** spokeswoman said. It said the MRJ program

Embraer Commercial Aviation forecasted that Latin American airlines will take delivery of 700 new 70- to 130-seat jets over the next 20 years. This will represent 11 percent of the worldwide demand. It is estimated that 63 percent of the new jets will support growth in the market and 37 percent will replace older-generation aircraft. The 70- to 130-seat jet fleet will increase from the currently 280 units to 750 by 2033. Secondary markets are poised to drive the demand for new air travel due to economic growth and regional integration. There are nearly 200 E-Jets in service in seven Latin countries, and **Embraer** controls 70 percent of the under-130-seat market. Latin America will experience solid economic growth of 3.8 percent per year over the next 20 years. The progress will be based on political and economic stability, and a more equitable distribution of income. Per capita GDP will increase by 2.9 percent annually from $9,050 to $15,960 in the same period. Over the last five years, annual growth in demand for air transport has been a robust 7 percent, and growth is expected to continue over the next 20 years at 6 percent annually. **Embraer** has sold more than 1,500 E-Jets family aircraft and delivered more than 1,000 to date.

was on track for a maiden flight in the second quarter of 2015. The manufacturer notified major suppliers that the MRJ was likely to take its first flight by the end of May. **Mitsubishi** rolled out its first flight test aircraft in October and it is currently conducting functional and performance tests on the aircraftôs various systems. It needs to test the **Pratt & Whitney** PW1200G engines, the **Hamilton Sundstrand** auxiliary power unit, perform ground vibration tests, and electro-magnetic interference tests. It will then will taxi the aircraft before the first flight. The wing and body of the third flight test aircraft will be joined soon.

Air France-KLM Group will push back five **Boeing** 777-300ER deliveries to contain costs after announcing a third downward profit revision this year. **Air France** and **KLM** were scheduled to receive four and one 777 respectively in 2015, but some deliveries will be postponed for up to two years. The number hasnôt been confirmed yet, **Air France** said. The groupôs Chief Financial Officer **Pierre-Francois Riolacci** said, ñWeôll have to look again at cutting our investments, and clearly that may involve our fleet.ò Lower oil prices have reduced any gains from having more fuel-efficient aircraft, so the airline can afford to keep its older airplanes he said. **Air France-KLM** had intended to use the 777s to replace their older 747-400s which are more costly to fly.

Order Changes and Cancellations

Airbus Reported Several Order Changes and Cancellations in November. **CIT** dropped one A350 order when it purchased 15 A330-900neos. **CIT** now has 14 A350-900s on backlog. An undisclosed customer transferred one A320 order to **Air China,** one A320 order to **China Eastern Airlines,** and two A320 orders to **Sichuan Airlines.** All four aircraft were delivered in November. **JetBlue Airways** exchanged its last three A320ceo orders (due in 2016), orders for five A320neos and seven A321ceos (due in 2016 & 2017) for 15 new orders for A321neo aircraft. The A321neos will be delivered between 2022 and 2023. The exchange essentially delayed 15 deliveries by six years. The airline has taken delivery of 132 A320ceos, and now has ordered 25 A320neos, 46 A321ceos (12 delivered) and 45 A321neos.

AirAsia X converted seven A330-300 orders to A330neos, when it firmly ordered 55 in December. The former A330-300s were scheduled for delivery from 2016-2017 and will now be received in 2018 as A330-900neos. Two of the eight -300s due in 2015 will be sold. The new schedule calls for the airline to receive six A330s in 2015, four in 2016 and five in 2017. As of November 30, **AirAsia X** had 36 A330s in backlog.

Boeing Did Not Report any Cancellations in November, but it announced customers when 737s were delivered during the month, including three -800s for **Hainan Airlines.** The airline is the probable customer for another 16 -800s that are still unidentified. **Shenzhen Airlines** received two -800s that were previously unidentified and has three more on order. **WestJet Airlines** exchanged its final 13 -700 orders for an equal number of -800 orders. The airline has taken delivery of 42 -700s and 19 -800s and has another 19 -800s on backlog. **Ruili Airlines** is the previously unidentified customer for eight -700s that were ordered in December 2013. The first was delivered in November. **Boeing** booked the order for 15 737 MAX as a model change from the -800 type. The order was part of 81 737-800s ordered by unidentified Chinese airlines in December 2013. Six of the 737 MAX will be delivered to **Ruili Airlines.**

Leasing & Finance

AerCap Holdings N.V. signed an agreement to lease 20 **Airbus** A320neo Family aircraft and five **Airbus** A350s aircraft to **Azul Linhas Aéreas Brasileiras**, the third largest airline in Brazil. The A320neos will be configured with up to 174 seats and equipped with **CFM** LEAP-1A engines. They are scheduled for delivery to **Azul** between 2016 and 2019, while the A350s are expected between 2017 and 2018. **ILFC** arranged the A350 lease prior to its acquisition by **AerCap.** Currently, **AerCap** leases four A330-243s (SN 462, 494, 527 & 532) to **Azul** for its international flights from São Paulo, Brazil, to Fort Lauderdale, Florida, and New York. The airline will also lease two A330-243s (SN 365 & 372) from **Deucalion Aviation.**

Air Lease Corporation will long-term lease two new **Boeing** 737-800s and four new **Boeing** 737 MAX 8s to **Sunwing Airlines**, Canada. These aircraft will come from **ALC's** order book and are scheduled for delivery over a four-year period starting in 2016. President of **Sunwing Airlines, Mark Williams,** commented, ñThe acquisition of our new 737-800 and 737 MAX 8 aircraft is an integral part of our overall expansion plan across an increasing number of both Canadian and U.S. gateways. This year we will be operating flights out of 45 Canadian and U.S. local airports to over 40 different destinations across North and South America, and the Caribbean. As we continue to grow, having aircraft that will enable us to offer a reliable, cost-effective and environmentally-conscious service is paramount. So we are delighted to be able to include the new 737 MAX 8 in our fleet for the first time.ò

Air Lease Corporation (ALC) entered into a joint venture with **Napier Park Global Capital LP** for the purpose of investing in commercial aircraft and leasing them to airlines around the globe. The newly formed entity was named **Blackbird Capital I LLC** and 90.5 percent of the equity is owned by a pooled investment vehicle of long-term institutional investors managed by **Napier Park,** and **ALC** owns the other 9.5 percent of the joint venture and will not consolidate the entity. **Blackbird Capital** is expected to acquire total aircraft assets worth approximately $2 billion by the end of 2016. Up to $500 million will be equity, and the remainder financed by a committed $750 million warehouse credit facility, which can be doubled to $1.5 billion, and other forms of debt financing. The revolving warehouse facility was arranged by **BNP Paribas**. **Credit Suisse** will be Joint Lead Arranger, and funds will come from **Bank of America, the Royal Bank of Scotland, Citibank,** and **MUFG Union Bank, N.A**. **ALC** will provide management services over a 12-year period to the joint venture for a servicing fee based upon aircraft assets under management, the company said. In addition, **ALC** expects to sell aircraft worth up to $500 million from its portfolio to **Blackbird** by the end of 2016. Through the joint venture, **ALC** will manage up to $2 billion of additional aircraft lease transactions to better serve the airline industry.

Air Lease Corporation (ALC) will long-term lease a third new ATR 72-600 to **KALSTAR Aviation,** Indonesia, from its order book. It will be delivered in the second half of 2015. The airline already operates two ATR 72-600s from **ALC.**

FLY Leasing Limited bought three **Boeing** 737-800s from ña leading Asian airlineò and leased them back for 10-year terms. It also purchased and leased back three new **Airbus** A321s with another Asian airline. **FLY** agreed to sell eight of the 11 **Boeing** 757 aircraft in its fleet. The sales are expected to close by the end of 2015. CEO **Colm Barrington** said, ñThe sale of these eight older 757 aircraft, averaging

15.7 years of age, will lower the average age of our fleet and substantially reduce our exposure to out-of-production aircraft. The total proceeds from this transaction will exceed the net book values of the aircraft, which continues our record of moving older aircraft at premiums to net book value.ò The lessor now has 127 aircraft in its portfolio, and it acquired 22 newer aircraft this year, and sold older models.

Royal Brunei Airlines, Brunei Darussalamôs national carrier, will lease two new **Airbus** A320s from **AWAS.** The aircraft will come from **AWAS'** existing new order book and will be delivered in the second half of 2015. The airline already has 10 A320neos on order for delivery at the end of 2017.

Lion Air will accelerate its aircraft deliveries in the 2017 to 2018 timeframe. The airline will receive 36 **Boeing** 737s in 2017, up from 24 per year now. Its A320 deliveries will reach 24 per year in 2018. Taking 60 narrowbody jets per year equals an annual fleet growth of between 15 and 17 percent toward the end of the decade, which is in line with the growth rate in the Southeast Asian market. **Lion** established **Transportation Partners** as an in-house leasing company that is based in Singapore. So far it has placed aircraft within the **Lion Air Group**, but it intends to lease aircraft to other carriers. **Transportation Partners** has access to a portion of **Lion's** order book of 234 A320s and 201 737 MAX and 78 737NGs. The lessor will be busy filling the needs of **Lion's** subsidiaries **Batik, Malindo,** and **Wings** in the near future. Larger leasing companies do not expect **Transportation Partners** to be a major competitor and they think Southeast Asian airlines will be reluctant to lease aircraft from their competitor, the **Lion Air Group**.

Engines

Pratt & Whitney's Geared Turbofan (GTF) Engine received certification from the **Federal Aviation Administration.** The engine will be installed on the **Airbus** A320neo Family aircraft. The GTF-powered A320neo took its maiden test flight in September, and certification marked a milestone for the engine and the A320neo, which is due to enter into service in late 2015. The A320neo jet is viewed as the most critical commercial platform for **P&W's** geared turbofan engine. It was already certified for the slow-selling **Bombardier** CSeries. The GTF was designed to be up to 20 percent more fuel efficient than older models.

Zhejiang Loong Airlines, China, will purchase LEAP-1A engines from **CFM International** for its nine **Airbus** A320neo aircraft. **CFM** valued the engine order at $260 million at list price, which includes spare engines. **Zhejiang Loong Airlines** is based in Hangzhou, in Eastern China, and began commercial operations in December 2013 with two CFM56-5B-powered A320s acquired from **Beijing Capital Airlines**. It has since added four new A320s and three ex-**Air China** 737-300SF freighters to its fleet.

Azul Brazilian Airlines selected **CFM International's** LEAP-1A engine to power the 35 **Airbus** A320neo family aircraft that it ordered in November. **CFM** valued the engine order at more than $900 million at list price. The airline will lease 28 additional aircraft powered by LEAP-1A engines. The first LEAP-1A engine began ground testing in September 2013. The total program encompasses all three LEAP engine variants, and includes 28 **CFM** ground and flight test engines, along with a total of 32 flight test engines for **Airbus, Boeing,** and **COMAC.** Over the next three years, these engines will accumulate approximately 40,000 engine cycles before the first deliveries. By the time this engine enters service, **CFM** will have simulated more than 15 years of airline service with 60 different engine builds, the company said.

VietJetAir, Vietnam, and **CFM International** signed a 12-year **Rate Per Flight Hour** agreement to support the airlineôs fleet of 21 CFM56-5B-powered A320ceo aircraft. The agreement was valued at $300 million, and **CFM** will guarantee maintenance costs for 45 CFM56-5B engines on a dollar per engine flight hour basis. **VietJetAir** has been a **CFM** customer since it commenced operations in late 2011 with leased A320-214s. The airline purchased CFM56-5B engines worth $800 million, for its 14 new A320ceo (current engine option) and seven new A321ceo aircraft. All of **VietJetAir's** new engines will be delivered in the CFM56-5B **Performance Improvement Package (PIP)** configuration. The **PIP** includes hard-ware changes to the core, including new high-pressure turbine blade, as well as manufacturing changes to the fan and compressor blades and vanes.

Rolls-Royce delivered its 1,500th Trent 700 engine in November, installed on an **AirAsia X** A330-343. The engine type first entered service in 1995 as the first member of the Trent engine family. Today the Trent 700 has accumulated more than 30 million flying hours and is in service with 66 operators. Another 150 Trent 700s are on firm order, making it the most numerous Trent engine type in service. The Trent-powered A330ceo has won 67 percent of new orders over the last three years. The derivative Trent 7000 is the only engine offered on the new **Airbus** A330neo aircraft. **AirAsia X** purchased 55 of the aircraft in December.

Emirates will soon decide on which engine to install on its latest batch of 50 A380s, President **Tim Clark** said. The airlines first 90 A380s are, or will be, fitted with **Engine Alliance** GP7200 engines. **Rolls-Royce** is bidding to knock **General Electric/Pratt & Whitney** off the wings of **Emirates'** latest super jumbo-jets. Mr. **Clark** said, ñWeôre close to making a decision. By the end of this month we will let the contract.ò The **Rolls-Royce** Trent 900 has more A380 customers, but there are more orders for the GP7200 since it was chosen by the A380ôs largest customer, **Emirates**. **Tony Wood,** President - Aerospace at **Rolls Royce**, said the company had a good shot at winning the competition. **Rolls** is the exclusive engine provider for the A350 widebody. This year, **Emirates** canceled its order for 70 A350s but Mr. **Clark** said he would look at a possible order after the airplane proves its efficiency in service. ñWe will look at the A350 again, and then weôll compare it to the 787-10, which didnôt exist when we bought the A350,ò he said. So far, **Emirates** has chosen to operate the much larger A380 and 777 and it is looking at a 300-seat jet for shorter-haul routes. There are ñholes appearing in our fleet planningò after 2018, Mr. **Clark** said. **Airbus** said the A350 was sold out through the end of the decade.

Finnair purchased Trent XWB engines, worth $450 million at list prices, for the eight new **Airbus** A350-900 XWBs that it ordered in November. The airline previously ordered 11 Trent-powered A350 XWBs. **Finnair** was the launch customer for the A350 XWB and will be the first European airline to receive the aircraft. **Rolls-Royce** has sold more than 1,500 XWB engines to be installed on the 778 A350s that are on backlog.

Airline News

Aeroflot launched its new low-cost carrier called **Pobeda**, which means **Victory**. Its previous budget operation, **Dobrolet,** halted services on August 4. It started operations in June with two leased **Boeing** 737-8FZ/Ws (SN 41991 & 41992). **Dobrolet's** first route was to Simferopol, Crimea, which was annexed by Russia early this year, so the **European Union** placed sanctions on the carrier and the aircraft were returned to the lessors, **Babcock & Brown Asset Management**. **Aeroflot** decided to

circumvent the restrictions by painting **Dobrolet's** 737-800s with **Pobeda** titles. Russia will celebrate **Victory Day**, the 70th anniversary of the surrender of Nazi Germany to the Soviet Union, on May 9, 2015. **Aeroflot** chief **Vitaly Saveliev** said that the name symbolises victory over ñdifficulties and external challengesò faced by Russia and its people this year. **Pobeda** began services from Moscow **Vnukovo** to Volgograd route on November 17, and its services will expand to Belgorod, Ekaterinburg, Kazan, Perm, Samara, Surgut, Tyumen, and Ufa. The airline intends to fly eight 737s and has already leased -81D/W (SN 39441) from **AWAS**, and subleased -8MA/W (SN 43664) from **Aeroflot/ Avolon.** They are operated in a single-class layout.

FlyAfrica, a Zimbabwe-based low-cost carrier, plans to compete with **South African Airways** on the Harare-Johannesburg route. The carrier has two ex-**CSA Czech Airlines** 737-55Ss in service and it plans to buy three more. **FlyAfrica** is 51 percent owned by Chief Executive Officer **Chaka Karase** and his family, with the balance controlled by a Mauritius-based company. Mr. **Karase** said, ñWe bring low-cost flying to the industry. We want to demystify air travel to the common man.ò The airline will offer tickets in the $300 range, nearly $100 less than the cheapest tickets offered by **South African. FlyAfrica** launched services with flights to Johannesburg, Windhoek, Namibia and Lusaka, Zambia**.** It also flies to Victoria Falls.

All Russian Airlines are facing a drop in passenger numbers because of Western economic sanctions and the falling ruble, which has lost half its value in the last year. Some observers expect fleet reductions and possible state support for airlines next year. The economy is now in recession, the exchange rate is now near 70 rubles per dollar and the government bank raised interest rates to 17 percent per year, raising the cost of debt for Russian companies ð much due to Western sanctions over Russian meddling in the Ukraine. The price of oil has dropped nearly 40 percent which has severely impacted the governmentôs revenue. The downturn is causing Russians to reduce travel, primarily to the West and it is affecting **Aeroflot, Transaero, S7** and **UTair**. Domestic operations are unprofitable because of competition, high airport charges, fuel costs and taxes, but higher-margin international traffic growth of 6 percent helped offset some losses. The airlines lost approximately 5 billion rubles ($106 million) last year on revenue of 718 billion rubles ($15.3 billion). International traffic on Asian routes has increased but did not offset the drop in revenue from European flights. Airlines will have to lower prices to fill planes, but this will simply exacerbate the drop in profits and will eventually lead to big losses and government support. The government is facing similar demands from oil companies and banks which are also struggling with the sanctions.

South African Airways (SAA) is considering a strategic partner to prop it up, after two government bailouts totaling 10 billion rand ($910 million); a third cash injection was rejected. The airline presented a 90-day rescue strategy to the government. **SAA** embarked on a turn-around strategy by cutting costs and said it will order 30 new fuel-efficient, long-haul aircraft from **Airbus** or **Boeing**, worth up to 60 billion rand ($5.4 billion). **SAA** strengthened its alliance with **Etihad Airways** by starting a new daily service to Abu Dhabi from Johannesburg. The two airlines will code share services on 49 routes, doubling the previous number. **Etihad** has the option of taking a strategic stake in the flag carrier, acting Chief Executive Officer **Nico Bezuidenhout** said on December 9. **SAA** also said, ñ**South African Airways** and **Etihad Airways** continue to explore areas for further cooperation, including joint sales and marketing programs.ò

Al Maha Airways, a subsidiary of **Qatar Airways,** will start operations in Saudi Arabia in 2015. The launch may have been delayed by political conflict between Qatar and Saudi Arabia over Dohaôs

support of the **Muslim Brotherhood** in Egypt. The airlineôs first **Airbus** A320-214/W (HZ-ALA, SN 6347) is still at Toulouse. It was supposed to have been delivered in November. The carrier intends to buy 10 A320s and fly routes linking Riyadh and Jeddah, in competition with flag carrier, **Saudi Arabian Airlines** and **National Air Services's Flynas.** Saudi Arabiaôs **General Authority for Civil Aviation (GACA)** approved **Al Maha Airways** and another new carrier called **Saudi Gulf Airways.** The latter airline plans to launch operations from Dammam to Riyadh and Jeddah, in the first quarter of 2015 with four new A320s.

IATA Posts December Jet Fuel Prices. The association updates the worldôs average jet fuel prices each week**.** On December 5, the average price of fuel was $2.042 per gallon, 15.2 percent lower than the November price of $2.315. It was also 32.9 percent less than in December 2013. The price of fuel is affected by location. It was only $1.955 in the Middle East region and was as high as $2.108 per gallon in Latin America. In Asia, fuel costs $2.018 per gallon. Fuel is now priced the same in Europe and North America, at $2.055. Since last year, fuel costs in those regions dropped by 33.1 and 31.9 percent respectively. **IATA** forecast that the global airline industryôs fuel bill will total $122.9 billion in 2014. This was a decrease of $7 billion over 2013.

V Air, a new Taiwan-based low-cost carrier, flew its maiden service from Taipei to Bangkok in December. The route will be operated daily, using an all-economy **Airbus** A321-231 (SN 6009) that was transferred from **TransAsia Airways**. The airline will operate fleet of A320s and A321s and focus on markets in Northeast Asia and Southeast Asia ï within a four flying hours from Taiwan.

Bankruptcy of the Month

SpiceJet Ltd, Indiaôs second largest low-cost carrier, asked the **Directorate General of Civil Aviation (DGCA)** for concessions that would allow the impoverished carrier to keep flying. **SpiceJet** has lost money for five consecutive quarters and is now facing greater competition from the largest domestic airline, **IndiGo** and the upstart **Air Asia India** and **Vistara Airlines. The DGCA** has demanded to see a plan to pay bills owed to the various airline authorities. Aviation minister **Mahesh Sharma** said, ñThey (**SpiceJet**) have given their problem to us and they have said that in case they have to shut down their operation then the sufferer will be the passenger. They have requested certain relaxations and we will discuss it with our officers, we will discuss it with the senior minister and of course the government about what best can be done.ò The **DGCA** told **SpiceJet** that it could not book tickets more than a month in advance, but then extended the deadline to March. The regulatory agency also canceled 183 of **SpiceJet's** landing and parking slots and told the company to pay delayed salaries by December 15. Approximately 85 percent of the November wages were paid as of December 5. It also extended the airlineôs credit to buy jet fuel by two weeks. The restrictions have severely impacted the airlineôs finances. Shares in the airline have lost about a third of their value this month. To save money, **SpiceJet** cut the size of its **Boeing** 737NG fleet by a third since September, and canceled about 70 flights, which slashed its revenue further. It currently operates 21 737-800s and two 737-900s (all leased) and apparently returned nine 737-800s and two -900s to lessors in the last few months. It still flies its 15 **Bombardier** Q400s. The airline needs an injection of at least $300 to $350 million to recover. Indian billionaire **Rakesh Jhunjhunwala's Rare Enterprises** bought 7.5 million shares at 17.88 rupees each on November 28 and then watched the stock plunge 15 percent by mid-December. The company is 53 percent owned by another billionaire **Kalanithi Maran**, but his company does not have the liquidity to invest more in the airline. **SpiceJet's** debt load of 20 billion rupees ($317 million) is almost twice its

market value. The airline tried to fill its seats by offering fares as low as $8. It is estimated that Indian airlines lost an average of $22 for every passenger that they boarded, causing an aggregate loss of $10 billion over the last seven years. **Air Asia India** and **Vistara** may take over some of **SpiceJet's** landing slots, driving more nails in the airlineôs coffin. **SpiceJet** recently ordered 42 737 MAX aircraft, list priced at $4.4 billion. The first planes are not due for several years so a default will not affect **Boeing** in the short term.

SpiceJet was forced to cancel dozens of flights on December 16, apparently because fuel companies refused to extend further credit to the airline and would not fuel its aircraft. The airline owes fuel suppliers 140 million rupees ($2.2 million), but said it spends 30 billion rupees ($470 million) on fuel each year. It made a partial payment of 30 million rupees ($470,000) to the oil companies, which allowed some airplanes to resume flying. The cancellations were widely reported by the Indian media, so many people were predicting **SpiceJet's** imminent failure. To bolster the carrier, the **Indian Government's** aviation ministry arranged a 15-day credit line with the fuel providers, and asked local banks to extend 6 billion rupee ($94 million) loans that are backed by Mr. **Maran's** personal finances. That money is owed to oil companies, airports, and other service providers. It is not clear that any assistance will be forth-coming, or will be enough to save the airline. The government gave **SpiceJet** two months to finalize a long-term financial deal with outside investors. The ministry said it wanted to avoid the airlineôs collapse, which it said would be a ñmajor setbackò for the civil aviation sector.

UTair, Russia's Third-Largest Airline is facing a bankruptcy lawsuit from **Avialeasing**, a domestic leasing company. The airline was struggling to pay its debts because of a devaluation of the ruble and the sanction-fueled economic recession. Some analysts expect Russian airlines to report ever larger losses, forcing them to beg for state aid and to cut their fleets. **Avialeasing** filed a lawsuit seeking overdue payments and interest amounting to 3.5 million rubles ($65,522) from the lease of a Tu-154M. **UTair** commented that the lawsuit did not affect its operations. Last month **UTair** failed to repurchase 2.68 billion rubles ($50 million) of bonds and hired **Raiffeisenbank** for advice on restructuring its credit portfolio. The airline is controlled by the **Surgutneftegaz** oil companyôs pension fund. **UTair** has tried to react to the plummeting price of oil and the 45 percent drop in the rubleôs value by laying off a third of its top managers and executives. The carrier has grounded two new A321s, one ATR 72-200, one 767-200ER, and one CRJ200. It still has 110 western-built jets and turboprops in service.

After several days of crisis, **SpiceJet** co-founder, **Ajay Singh**, who resigned as a director in 2010, and some partners, said they planned to invest up to 13 billion rupees ($206 million). They met Indian aviation ministry officials on December 22. This news gave everyone involved new confidence in **SpiceJet's** chances of survival. The airline resumed a full flight schedule before Christmas.

Merpati Airlines, an Indonesian state-owned carrier, has been grounded since February, and needs to restructure. Management is looking at a debt for equity swap and or to find strategic investors. The airline carries more than 6 trillion rupiah ($488 million) in debt and has struggled to pay employee salaries, insurance and fuel bills. The government is expected to decide the airlineôs fate by the end of the year. The airline retains 10 hushkitted **Boeing** 737-200 Advs, eight 737-300s, two 737-400s, one 737-500, and three **Fokker** F.100s. Its newest jet is 21 years old and the airline will have a hard time competing with **Garuda** and **Lion Air** with their vast fleets of new 737NGs.

Technical

Sukhoi Civil Aircraft Company received a **Supplemental Type Certificate** in November, which allows the Sukhoi Superjet 100 to perform reduced thrust takeoffs. The engines can now work at reduced speed and lower turbine gas temperatures which will decrease engine load and extend their lifetime, which will lower aircraft maintenance costs. The reduced thrust takeoff mode can be used on runways more than 2,000 meters long. Russiaôs **Aviation Register of Interstate Aviation Committee (IAC AR)** now allows the SSJ100 aircraft to perform CAT IIIa autoland under poor weather conditions. **IAC AR** has also issued **Supplemental Type Certificate** for expansion of operating conditions regarding performance of flights under RNAV1 and P-RNAV, crosswind limitation on runways with low Mu-factor, as well as aircraft operation on 30-meter-wide runways, **Sukhoi** said. The company is constantly working to expand the operating conditions of the Sukhoi Superjet 100 aircraft and to improve the aircraft design.

Comlux America, the Indianapolis, Indiana-based completion and services center of the **Comlux Group**, signed its first widebody completion contract. The **Airbus** A330 is scheduled to have a full VIP interior installed beginning in September, 2015. Since 2009, **Comlux** has installed interiors in ACJ319, ACJ320, ACJ321, BBJ, BBJ3, and 757 aircraft. The company demonstrated its ability to deliver the most customized and innovative interiors to their VIP customers, **Comlux** said. The A330 represents the ninth interior completion for **Comlux America**. The company started construction of an extension to its current hangar facility. The hanger will increase to 157,000 square feet (14,600 square meters), which will fit a 747-8-sized widebody and six narrowbody aircraft simultaneously.

MAK, Russiaôs interstate aviation committee, certificated a VIP interior configuration for the Sukhoi Superjet 100. **Ilia Tarasenko**, President of **Sukhoi Civil Aircraft,** said, ñOur company is now engaged in the activities aimed to introduce the Sukhoi Superjet 100 business version. [It] will meet not only the highest requirements for comfort, but also serve the demand for long nonstop flights which is increasingly evident in the changing business aviation market.ò The VIP SSJ100 is configured to carry 19 passengers in a cabin divided into several sections, including areas for relaxation and meetings. The interior was designed to meet the requirements of the VIP SSJ launch customer, the **Russian Government,** which ordered one **PowerJet** SaM146-engined twinjet.

Boeing, Battery Maker GS Yuasa, and the Federal Aviation Administration, were to blame for the lithium-ion battery fire aboard a **Boeing** 787-8 in Boston on January 7, 2013, a **National Transportation Safety Board (NTSB)** report said. The report said **Boeing** and the **FAA** did not properly anticipate the chance of a ñthermal runaway eventò in the aircraftôs lithium-ion battery, and it faulted shortcomings by the battery manufacturer, **GS Yuasa**. The **NTSB** report said, ñThe probable cause of this incident was an internal short circuit within a cell of the APU [auxiliary power unit] lithium-ion battery, which led to thermal runaway that cascaded to adjacent cells, resulting in the release of smoke and fire. The incident resulted from **Boeing's** failure to incorporate design requirements to mitigate the most severe effects of an internal short circuit within an APU battery cell, and the **FAA's** failure to identify this design deficiency during the type design certification process.ò The **NTSB** found insufficient oversight down the regulatory-manufacturing chain ï from the **FAA** to **Boeing,** to battery designer **Thales Group**, and to the battery manufacturer, **GS Yuasa**, Japan. The **FAA** failed to require thermal runaway tests as part of the certification process, while **Boeing's** battery safety assessment assumed a short circuit would not spread to other cells. ñ**GS Yuasa** did not test the battery under the

most severe conditions possible in service, and the test battery was different than the final battery design certified for installation on the airplane,ò the **NTSB** said. Further, the companyôs post-assembly battery inspections ñcould not reliably detect manufacturing defectsò caused by foreign object debris generated during manufacturing, and those defects could lead to short circuits, the **NTSB** said. The flight data recorders on the **JAL** 787 continued to record seemingly valid parameters after the source stopped providing data. This hampered the investigation. **Boeing** redesigned the battery box to vent hot electrolytes outside the aircraft, and to prevent the venting cell from affecting other cells and causing a thermal runaway.

International Air Transport Association (IATA) reported that demand for air freight grew 5.4 percent in October. **IATA** Director General **Tony Tyler** said, ñWe are now back to levels of demand not seen since the 2010 post-recession bounce-back. But the industry is still in the hot seat and under pressure to improve its value offering.ò Demand in Europe was lagging behind other regions. It rose only 1.4 percent, due to economic uncertainty and the impact of sanctions on Russia as a result of the Ukraine crisis.

Cargo Pallet

Aeronautical Engineers (AEI) delivered the third 11-pallet 737-400SF (SN 29000) to **FARNAIR Group,** Switzerland, in November. The aircraft will be the second -400SF to join **K-Mile Air** in Thailand. The plane was built in 1998, and converted at **Commercial Jet's** Dothan, Alabama, facility. Another 737-400 will be converted to fulfil the contract. The **AEI** 737-400SF can carry 10 full-height 88ò x 125ò containers, because its main deck cargo door is located approximately 40 inches further back than the competitorôs door. **AEI's** volumetric carrying capability is 10 percent greater than in the other 737 freighters on the market.

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Military Market

Airbus Defence and Space sold 12 A330 MRTTs (multi-roll tanker-transport), worth ú3 billion ($3.8 billion) to the **French Ministry of Defense.** The first will be delivered to the **French Air Force** in 2018, followed by the second in 2019, and then they will arrive at a rate of one or two per year. They will be delivered in a specific French configuration and named the A330 Phoenix. The French A330 MRTTs will be powered by **Rolls-Royce** Trent 700 engines, and will be equipped with both the **Airbus Refuelling Boom System** and underwing hose-and-drogue refuelling pods. The aircraft can be configured in a variety of layouts carrying up to 271 passengers as well as medevac arrangements including the French **MORPHEE** intensive care module carrying up to ten patients as well as 88 passengers. The contract includes training, spares, ground support equipment, and five years of in-service support. The air force is replacing 11 50-year-old **Boeing** KC-135FR and three KC-135RG aircraft. France is the sixth nation to order the A330 MRTT. India and Qatar have selected the MRTT and are negotiating for six and two aircraft respectively. A total of 22 A330 MRTTs are currently in service and the aircraft has been battle-proven in recent coalition actions. The A330 MRTT has won every major tanker aircraft procurement competition outside the U.S. since it has entered the market. A total of 46 have been sold to date.

Canada Will Buy its Fifth C-17A. Canadian Defence Minister **Rob Nicholson** announced plans to purchase the fifth C-17 strategic airlifter on December 19, and said the deal will extend the overall service life of the fleet by at least seven years. A **Boeing** spokeswoman said two of the 10 C-17 white tails have been ordered, leaving eight more available. Australia said it was in the market for additional C-17s.

The Embraer KC-390 First Flight is scheduled for early January. The Brazilian airframe manufacturer said the preparations for the flight were proceeding according to plan, although the press said the flight was delayed from December due to **Embraer's** annual Christmas break. Deliveries of the KC-390 jet transport to the **Brazilian Air Force** are scheduled to begin in 2016. Brazil is purchasing 28 aircraft, while another five nations have committed to purchasing a total of 32 additional KC-390s.

The Republic of Tunisia received its second C-130J Super Hercules during a ceremony in December. The countryôs air force received its first C-130J in April 2013. **Lockheed Martin** signed a two-plane sales contract with Tunisia in 2010. The deal included training and an initial three years of logistics support.

The European Defence Agency (EDA) announced that three **NATO** nations, Norway, Poland and the Netherlands**,** could acquire four **Airbus** A330 MRTTs (multi-role tanker/transport). The three countries ñhave decided to prepare negotiations with **Airbus Defence & Space** for a fleet of A330 MRTT aircraft,ò the **EDA** said. It was decided that ñonly one military off-the-shelf solution met their key requirements in terms of capabilities and timeframe,ò including the under-wing hose and drogue refuelling pods and a refuelling boom, the **EDA** said. Further, the MRTT would ñmeet the userôs requirements in terms of passenger transport, strategic airlift, and medical evacuationò. The first ones will be delivered in 2019. The pooling initiative will enable additional nations to participate. The Dutch defence ministry wants to finalize the contract by 2016, so that it can retire its two **McDonnell Douglas** KDC-10 tankers by 2020. Poland is also considering buying two aircraft without its partners, and is looking at the A330 MRTT or **Israel Aerospace Industries'** modified **Boeing** 767-200ER.

AIRCRAFT DELIVERIES & SALES

Airbus

Airbus A319. Two A319s were delivered in November, including the seventh of nine -115/Ws (SN 6349) to **Z/C Aviation Partners.** It was leased to **American Airlines. TACA International Airlines** transferred new -132/W (SN 6132) to its sister airline, **Avianca. SMBC Aviation Capital** sold two A319-100s to an unnamed financial institution based in China.

Airbus A320. **Airbus** delivered 31 A320s during November. **China Aircraft Leasing Co. (CALC)** leased three -216/Ws (SN 6248, 6292 & 6357) to **Chengdu Airlines.** The airplanes were originally allocated to **AirAsia**. **CALC** also leased one -214/W (SN 6323) to **China Eastern Airlines. China Eastern** took delivery of one **Tianjin FAL**-built -214/W (SN 6228) and one European assembled -214/W (SN 6373). **Spirit Airlines** received three -232/Ws (SN 6327, 6331 & 6345) for a fleet total of 48 ordered and leased A320s. **Lion Air** took delivery of three -214/Ws (SN 6309, 6356 & 6361). The

airline transferred the first A320 to **Lion's** full service subsidiary **Batik Air**. The second -214/W (SN 6356) was sold to **AWAS** and the third (SN 6361) was sold to **Avolon Aerospace**. Both were leased to **Batik Air**. **Batik** now operates five new A320s. **Citilink** leased -214/W (SN 6322) from its parent, **Garuda Indonesia Airways,** and it leased -214/W (SN 6333) from **ICBC. Sichuan Airlines** accepted two -214/Ws (SN 6339 & 6369). **BOC Aviation** leased two -232/Ws (SN 6311 & 6343) to **Vistara Airlines,** India. The airline will start flying passengers in January. **SMBC Aviation Capital** leased -214/W (SN 6315) to **Juneyao Airlines,** and -214/W (SN 6335) to **Peach Aviation. AWAS** leased a fourth new -214/W (SN 6320) from its order pipeline to **Vanilla Air,** a low-cost regional subsidiary of **ANA Holdings.** In Asia, **VietJetAir,** Vietnam, received its first new -214/W (SN 6341) ordered directly from **Airbus.** The airline has another 13 A320ceo, seven A321ceo and 42 A320neo aircraft on firm order and reserved purchase rights for another 30 aircraft. **IndiGo** accepted its 100th and final -232/W (SN 6336), and it has 180 A320neos on order. **Cebu Air** acquired its 22nd -214/W (SN 6325). **Airbus Tianjin FAL** delivered -232 (SN 6217) to **Shenzhen Airlines,** and -214 (SN 6239) to **Air China**. The **Royal Thai Air Force** accepted ACJ320-214/W Prestige (SN 6112). **EasyJet** received its 74th -214/W (SN 6353), **Wizz Air Hungary** acquired -232/W (SN 6352), and **Tunisair** bought -214/W (SN 6338). **Volaris** accepted -233 (SN 6332) in early November.

SMBC Aviation Capital purchased one of the three A320-232s (SN 6345) that were delivered to **Spirit Airlines** and leased back. This was the third of a four aircraft sale and leaseback transaction. **SMBC** sold one A320-200 to an unidentified airline based in the U.S. The company purchased one new A320-200 from **Lion Air** and leased it to **Batik Air,** Indonesia. This was the fourth of a six aircraft sale and leaseback transaction. **SMBC** bought one new A320-233 (SN 6332) from **Concesionaria Vuela Compañía De Aviación (Volaris)** and leased it back. This was the first of a seven aircraft sale and leaseback transaction.

CIT Aerospace leased A320-214 (SN 3646) to **VietJet Air** in October. The CFM56-7B-engined aircraft was the second aircraft **CIT** has leased to the Vietnamese low-cost carrier**. VietJet** currently operates 17 A320s and it will soon launch a joint venture in Thailand, named **VietJet Thailand**.

Air Seychelles wet-leased its first A320-232 (SN 1944) from 40 percent shareholder **Etihad Airways**. The A320 is configured with 16 business class and 120 economy class seats, and it will be used to launch three new routes, including Mumbai, Dar es Salaam and Antananarivo. **Air Seychelles** also wet-leases two A330-243s from **Etihad,** and operates six **Viking Air** DHC-6-400 Twin Otters, and one Shorts 360 freighter.

Airbus A321. **Airbus** delivered 13 A321s in November, including two -211/Ws (SN 6342 & 6351) to **GECAS** for lease to **Thomas Cook Scandinavia. GECAS** is scheduled to deliver a total of nine aircraft to **Thomas Cook Group's** airlines in 2014 and 2015. **UTair Aviation** leased two -211/Ws (SN 6210 & 6232) from **VEB Leasing** in late November. The airplanes were built in July and August respectively and were stored before delivery. They still have not entered service due to **UTair's** financial difficulties. In the Americas, **American Airlines** leased its fifth and sixth -231/Ws (SN 6334 & 6346) from **Aviation Capital Group. American** also took delivery of a **US Airways**-ordered -231/W (SN 6337) for a fleet total of 136, and **JetBlue Airways** acquired one -231/W (SN 6359). **LATAM Airlines Group** received one -211/W (SN 6364) for operation by **LAN Airlines.** This was **LAN's** first of 48 ordered A321s. The plane was fitted with 220 seats in single-class configuration. In Asia, **Philippine Airlines**

purchased two new -321/Ws (SN 6363 & 6371). **Air China** leased -232/W (SN 6354) from **Air Lease Corporation (ALC). Vietnam Airlines** accepted its 38th of 41 new -231s (SN 6344).

Maldivian, the national airline of the Maldives, will long-term lease A321-212 (SN 2599) from **Air Lease Corporation (ALC)** in the first quarter of 2015. **ALC** acquired the airplane from **Iberia.** It will join one A320 which is already leased from **ALC.**

Airbus A330. **Airbus** delivered one -200, one -200F and 10 -300s in November, including the second of three -243s (SN 1573) to **Hanan Airlines**. **Qatar Airways Cargo** received its first of five -243Fs (SN 1578). The airline also leases three -243Fs from **BOC Aviation** and took delivery of -243F (SN 1584) in December. **Philippines Airlines** acquired its last two -343Es (SN 1566 & 1568) for a total of 23 in its fleet. The first (SN 1566) was sold to **CIT Aerospace** and leased back. It was the third A330 to be sold to **CIT.** The latter one (SN 1568) was sold to **Avolon Aerospace** for lease back. It is the fourth airplane that **Avolon** is leasing to the Philippine flag carrier. **China Southern Airlines** received its 27th -323 (SN 1575) and **Intrepid Aviation** leased a third new -343 (SN 1579) to **Sichuan Airlines. Oman Airlines** took delivery of its fourth of six -343s (SN 1572), and **Turkish Airlines (THY)** accepted -303 (SN 1571). It has 18 -303s in its fleet and another dozen on order. **AirAsia X** acquired its 15th -343 (SN 1581) and **Garuda Indonesia** received its 10th -343 (SN 1577) and sold it to **Avolon Aerospace** for lease back. **Avolon** leased a fourth -343 (SN 1585) to **Garuda** in December. **CIT Aerospace** leased one -343 (SN 1574) to **Skymark Airlines**. The Japanese low-cost carrier now leases four -343s from **Intrepid Aviation. Skymark** will acquire its sixth -343 (SN 1592) in the near future. **Korean Air** bought its 18th -323 (SN 1576), and it has four more on order.

Airbus A350. **Airbus** delivered the first A350-941 (A7-ALA, SN 006) to **Qatar Airways** on December 22, a week later than originally scheduled. At the delivery, the airlineôs CEO **Akbar Al Baker**, said, ñReceiving the A350 XWB as global launch customer is a very proud moment for **Qatar Airways,** and after much anticipation, I am delighted that the day has come when we will welcome this latest generation aircraft into our rapidly expanding fleet.ò **Qatar** should have eight A350-900s in service by December 31, 2015. It has ordered 43 -900s and 37 -1000s. **Airbus** is building three A350s per month. The manufacturer currently has 12 A350s on its final assembly line, including airplanes for **Finnair, Qatar** and **Vietnam Airlines.** The airframer intends to produce five planes per month by December 2015, and up to 10 a month by mid-2018. **Airbus** invested $15 billion to bring the A350 to market by the end of the year. At the end of November 2014, the A350 XWB had won 778 orders from 41 customers worldwide.

WORLDWIDE AVIATION MARKETING AND MANAGEMENT SERVICE

Intrepid Aviation purchased A330-300 (SN 1367) from **GECAS** and leased it to **China Airlines.** The A330 was delivered in December 2012 and was leased from **GECAS** at that time. This is the second A330-300 that **Intrepid** has acquired to lease to the Taiwan flag carrier.

Airbus A380. Three A380s were delivered in November, including the second of 10 -861s (SN 143) to **Qatar Airways. Emirates** accepted another two -861s (SN 164 & 165) for a total of 55**.**

Etihad Airways welcomed the first of its 10 new **Airbus** A380-861s (SN 166) at a ceremony in Abu Dhabi on December 18. **Etihad** is the 13th airline to operate the A380, and the aircraft is the 150th A380 delivered by **Airbus.** "The airlineôs super jumbo-jet is designed to carry 498 guests in four living spaces on the aircraft, including two VIP guests in **The Residence by Etihad**Ê **,** nine guests in the **First**

Apartments, 70 guests in the **Business Studio**, and 417 guests in **Economy SmartSeats.** Equipped with the latest entertainment systems and the plush surroundings of the interior, passengers can expect an exceptionally comfortable journey,ò **Airbus** said. The airline will have five A380s in operation by the end of 2015. The aircraft will serve **Etihad's** most in-demand routes, such as Abu Dhabi to London, New York and Sydney. Now all the major Gulf carriers operate the A380 and it will be interesting to see how that affects **Emirates**, which was the exclusive A380 operator in the region until this year.

Qatar Airways received its fourth A380-861 (SN 160) at Doha one day after its first A350 arrived. The airline is now first carrier in the world to have operated every **Airbus** aircraft family, including the A300/A310, A320, A330/A340, A350 and A380.

Boeing

Boeing 737 NG. **Boeing** delivered 42 737s in November, including one -91MER/W (SN 40069) and three -81M/Ws (SN 40066, 40067 & 40068) to **Oman Air (SAOC). Hainan Airlines** accepted three -84P/Ws (SN 38417, 39217 & 41377). **Lion Air** leased two new -8GPER/Ws (SN 39827 & 39828) to **Batik Air. China Eastern Airlines** bought two -89P/Ws (SN 41512 & 41513), and **Shenzhen Airlines** acquired two -87L/Ws (SN 39158 & 39159). **American Airlines** accepted two more -823/Ws (SN 31205 & 33330) for a fleet of 244, and **Delta Air Lines** received two -932ER/Ws (SN 31940 & 31941) for a total of 30. **Air Lease Corp.** leased -8SH/W (SN 41347) to **Aerolineas Argentinas**, and -89L/W (SN 41325) to **Air China**. **Aviation Capital Group** leased a second -8HX/W (SN 40550) to **Kenya Airways**, and **Avia Capital Leasing** leased -8LJ/W (SN 41201) to **Orenair (Orenburg Airlines)**, Russia. **Avolon Aerospace** leased the second of two -8MA/Ws (SN 43664) to **Aeroflot. S7—Siberian Airlines** leased a third -8GJ/W (SN 41401) from **BOC Aviation. SMBC Aviation Capital** took delivery of -8FH/W (SN 39951) and leased it to **Sun Country Airlines,** and **GECAS** leased one -86N/W (SN 41255) to **Okay Airlines. Aeromexico** leased -852/W (SN 36705) from **Jackson Square Aviation. Qantas'** 74th and last -838/W (SN 44577) arrived in Sydney on November 17. It was painted in a unique retro livery that harkens back to the airlineôs red and orange color scheme from the 1970s. **Ruili Airlines,** a new private airline, took delivery of its first -7ME/W (SN 60460) from **Boeing**. **Ruili** is based at **Changshui International Airport** in Kunming, Yunnan, and has another seven 737-700s and six 737 MAXs on order. **China Southern Airlines** received its 22nd -81B/W (SN 38924), and **SilkAir** acquired its eighth of 23 -8SA/Ws (SN 44224). **Ceiba Intercontinental,** Equatorial Guinea, accepted its third and final -8FB/W (SN 41158), and **Jet Airways** received its 29th of 30 -85R/Ws (SN 42805). **Flydubai** took delivery of its 41st -8KN/W (SN 40268), and sold it to **Avolon** for lease back. The **Republic of Iraq** leased the seventh of 30 -81Z/Ws (SN 40078) to **Iraqi Airways. Norwegian Air Shuttle** accepted -8JP/W (SN 43879), and **Ryanair** received its 353rd -8AS/W (SN 44690). It was sold to **Aviation Finance and Leasing** for lease-back. In the Americas, **COPA Airlines** bought its 38th -8V3/W

Military 737 Delivered. Boeing delivered the 32nd P-8A Poseidon (737-8FV, SN 42260) to the **U.S. Navy** on November 20. It was joined by C-40A (737-7AF, SN 43828) VIP transport on the same day. The **Navy** has 29 P-8As and one more C-40A Clipper on order.

The India Navy's eighth P-8I Neptune maritime patrol aircraft (737-8FV, SN 40617) was delivered on November 4. It and SN 40616 are being fitted with their mission suites before entering service in 2015. The fifth P-8I (SN 40615) was ferried from **Boeing Field** to Indian **Naval Air Station Rajali** on November 24, and is ready to enter service.

(SN 40785), sold it to **SMBC Aviation Capital** and leased it back. This was the fourth of a four airplane sale-leaseback deal. **Southwest Airlines** received its 74th -8H4/W (SN 36971), and **United Airlines** accepted of its 103rd of 139 -924ER/Ws (SN 60122).

Malaysia Airlines celebrated the 100th 737 delivery, when its -8H6/W (SN 40162) arrived in Kuala Lumpur, Malaysia, in December. The airline has another 10 737-800s on order. **Malaysia** took delivery of its first 737, a 737-200, in 1972 and has operated the 737-200, -300, -400, -500 and -800 as well as 747-400s and 777-200ERs.

Boeing 747. **Air China** accepted its second of five 747-89L Intercontinentals (SN 41192). **Nippon Cargo Airlines** received its seventh -8KZF (SN 37393). The airline has seven more on order. **Boeing** flew two -83QFs (SN 60117 & 60118) to storage. The planes first flew in May and July, 2014, and were allocated for delivery to **Silk Way Airlines.** The second 747F will be delivered to **Asiana Cargo**, which is not officially listed as a customer. The Azeri cargo airline ordered the two freighters in July 2013. To date, **Boeing** has delivered 55 747-8 Freighters and 25 passenger 747-8Is.

737 Leases. CIT Aerospace leased the second of two new 737-9GPER/Ws (SN 38299) to Indonesiaôs **Lion Group** in October. The aircraft was powered by CFM56-7B26E engines. **SMBC Aviation Capital** purchased the fifth new -8GP/W (SN 39828) from **Lion Air** in November. The airplane was leased back to **Lion** and subleased to **Batik Air. SMBC** will buy a sixth 737 from **Lion** for lease back. **SMBC** sold one 737-700 and one 737-800 (SNs unknown) to a financial institution based in China. **AWAS** announced it leased a new -81D/W (SN 39441) to **Aeroflot** from its new order pipeline in October. The airplane was assigned to **Aeroflot's** new low-cost subsidiary, **Pobeda**. **AWAS** purchased two new -8GP/Ws (SNs unknown) from **Lion Air** and leased them back by November 1. The lessor will buy a third -8GP/W from the airline for lease back.

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Boeing 767. **Federal Express** took delivery of its eighth -3S2F (SN 42710) in November. The cargo airline has 40 more on order.

Boeing 777. **Boeing** delivered six 777s in November, including the second of four 777-F60 freighters (SN 42032) to **Ethiopian Airlines. Cathay Pacific Airways** received another -367ER (SN 41766), and now has 42 in its fleet and seven on backorder. **China Eastern Airlines** received its third of 20 -39PERs (SN 43270), and **Emirates** purchased its 70th of 120 -31HERs (SN 41369). **China Airlines** leased the airlineôs third -36NER (SN 41845) from **GECAS** in November. **Singapore Airlines** acquired its 23rd -312ER (SN 42238) and it has four more on order.

Intrepid Aviation acquired a 2012-model 777-328ER from another lessor. The aircraft is equipped with two **General Electric** GE90-115B engines and is still on long-term lease with **Air France**. **Intrepid** said the lease helps consolidate its existing relationship with **Air France**, one of the worldôs largest operators of 777-300ER.

Boeing 787. **Boeing** delivered only six 787-8s in November, including one -8 (SN 36112) to **AerCap/ ILFC** which leased it to **Royal Jordanian.** The airline also leased -8 (SN 37166) from **CIT,** and it now operates five -8s. **Air Canada** received its sixth -8 (SN 35262), and **Qatar Airways** acquired -8 (SN 38336). **Japan Airlines** took delivery of its 16th -8 (SN 34860), and **LAN Airlines** purchased its 10th -8 (SN 42225).

December 787 Deliveries. Avianca received its first 787-8 (SN 37502) on December 18, and it hopes to put the jet in commercial service by year-end. **Avianca's** 787-8 will carry 28 passengers in business class and 222 in economy class. The airline was founded 95 years ago and now flies to 24 destinations in Colombia and 98 destinations in South America, North America and Europe. **AZAL—Azerbaijan Airlines** acquired its first 787-8 (SN 37920) and became the first airline in the **Commonwealth of Independent States** to operate the 787. It will be used on long-haul routes from Baku. **Etihad Airways** will take delivery of its first two 787-9s (SN 39646 & 39647) by the end of December.

Boeing May Miss its 787 Dreamliner Delivery Target this year because it is waiting for luxury seats for the planesô interiors. Engineers at **Zodiac Aerospace**, France, are struggling to meet demand for the custom berths. The manufacturer blamed the delays on a month-long strike at its in Gainesville, Texas, for the shortage of the angled, lie-flat seats. The seat maker is working through its backlog of delayed shipments and should be back on schedule by mid-2015. Premium seats can cost more than $200,000 each, because expensive finishes and development costs for complex motors are spread over relatively few units. **Boeing** needs to deliver 14 787s in December to meet its annual forecast for 110. It will keep its delivery center at Everett open during the year-end holidays to handle an anticipated late-month rush. The manufacturer will have to perform lots of out of sequence rework on the interiors. The premium lie-flat seats can require extensive rewiring, ductwork changes and reinforced cabin floors. Units arriving out of sequence may also have to be disassembled to fit through the doors.

Boeing Chief Operating Officer **Dennis Muilenburg** said at a conference that it would meet its 110 delivery target even though Novemberôs 787 deliveries fell below the normal 10 per month goal. Mr. **Muilenburg** also said that **Boeing** lost a large **Delta Air Lines** widebody order to **Airbus** because the manufacturer did not have 787 delivery slots. **Delta** needed the airplanes ñsooner than we had slots available,ò he said.

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American Airlines' first two 787-8s (SN 40618 & 40619) are now scheduled for delivery in the first quarter of 2015, at least two month later than planned. The delay is due to the certification and installation of new premium seats that **American** had developed specifically for the 787. **American** is expected to take at least 11 787s in 2015, and the airline has firm orders for 16 787-8s and 26 787-9s. Its 787s will enter service on domestic routes in the second quarter of 2015.

Air Wisconsin agreed to operate 26 **Bombardier** CRJ200s for **Delta Air Lines** beginning in January 2015. The last 50-seat aircraft should be in service by December. The CRJ200s will be transferred from **Delta's** wholly-owned subsidiary **Endeavor Air**. The regional airline is transitioning to a fleet of dual-class **Bombardier** CRJ900 regional jets. **Endeavor** will transferred 12 of its CRJ200s to **SkyWest Airlines** next year. **Endeavor** said, ñEliminating 50-seat aircraft and going to a single fleet type is part of [our] plan to streamline operating processes and become a more efficient and viable airline for the long term.ò It now operates 77 CRJ200s and 75 CRJ900s. **Air Wisconsin** operates 71 CRJ-200s, and has a contract to fly for **American Airlines** and **US Airways.**

Regional Jet

Bombardier delivered three CRJ900 NextGen aircraft (SN 15340, 15342 & 15343) to **American Airlines Group.** The aircraft will be operated by the groupôs wholly-owned subsidiary **PSA Airlines** under the **American Eagle** brand. **American** accepted its 13th of 30 CRJ900s (SN 15345) in December. **Delta Air Lines** accepted its 74th CRJ900LR NextGen (SN 15341), and leased it to

Endeavor Air for operation on behalf of **Delta Connection.**

AeroCentury purchased two **Bombardier** CRJ900s from **Adria Airways** and leased them back. The national carrier of Slovenia is a **Star Alliance** member, and offers scheduled flights to twenty-two destinations throughout Europe.

Embraer delivered the 1,100th production E-Jet to **Aeromexico** in December. The E190-100LR (SN 19000673) was also the 200th E-Jet family aircraft to fly in Latin America. **Aeromexico's** regional subsidiary, **Aeromexico Connect/Aerolitoral, S.A de C.V.,** operates 27 E190s, six E170s, three E175s, and 26 ERJ 145s. **Embraer** delivered its first E -Jet to Latin America in 2005 and now eight airlines from seven countries operate the E-Jet.

Embraer. **Republic Airways** accepted two more EMBRAER 170-200 LRs (E175s) (SN 17000434 & 17000435) in November, for operation on behalf of **American Eagle. United Airlines** leased five new E175s (SN 17000431, 17000432, 17000433, 17000436 & 17000437) to **Mesa Airlines. SkyWest Airlines** received two E175s (17000439 & 17000440). **Royal Air Maroc** leased two EMBRAER 190-100s (E190) (SN 19000680 & 19000681) from **Aldus Aviation** in November and leased E190 (SN 19000682) from them in December.

Finnair will sell three EMBRAER 190s to **GOAL—German Operating Aircraft Leasing** by the end of March, 2015, and lease them back for eight years. The transaction is valued at approximately ú55 million ($67.1 million, $22.37 million each) at current market value. The E190s are currently operated by **Flybe Finland**. After the sale, **Finnair** will sublease the aircraft back to its regional subsidiary **Flybe Finland**.

Sukhoi Civil Aircraft Company delivered the seventh of 10 Sukhoi Superjet 100LRs (SN 95073) to **Gazpromavia**, Russia, in November. **Gazpromavia** was the launch customer of the long range SSJ100LR which features full-economy class seating for 90 passengers. The first two SSJ100LRs were handed over to **Gazpromavia** in January and they entered commercial service from Moscow to Sovetskiy City in northern Russia in March. Now the airline operates domestic and international routes. Also in November, **Aeroflot** received its 11th 87-seat Sukhoi Superjet 100 (SN 95059), which was leased from **Sberbank Leasing,** and named for the Air Chief Marshal of the USSR, **Boris Bugaev. SCAC** President **Ilya Tarasenko** said, ñThis particular aircraft marks the start of the second ten of the Sukhoi Superjet 100 deliveries to our launch customer pursuant to the contract signed earlier this November. It is expected that by the end of 2014 **Aeroflot** will receive five more aircraft of this type.ò The 12th SSJ100 (SN 95068) was handed over on December 4. The carrier operates SSJ100s on the routes throughout the central part of Russia, Western and Eastern Europe and the near-abroad.

Turboprop Aircraft

ATR. In November, **White Airways** took delivery of its second ATR 42-600 (SN 1016) and leased it to **Portugalia**. **Avianca** received ATR 72-600 (SN 1185), and **MASwings** accepted one -600 (SN 1187). **Wings Abadi Airlines** acquired one -600 (SN 1188) and **Garuda Indonesia** leased its eighth of 20 -600s (SN 1191) from **Nordic Aviation Capital (NAC)**. **Azul Linhas Aéreas** took delivery its 38th -600 (SN 1190), and **Air Tahiti** received its third -600 (SN 1192). **Lao Airways** accepted -600 (SN 1189).

Alliance Air, Air India's fully-owned regional subsidiary, leased its first new ATR 72-600 (SN 1197) from Singapore-based **Avation.** The airline will lease four more ATRs by July 2015. The ATR 72-600 is configured with 70-seats, and joins four ATR 42-320s in **Alliance Air's** fleet. The aircraft is fitted with **Pratt & Whitney** 127M engines, and features a full-glass cockpit with the most modern navigation aids.

ATR delivered its 200th ATR -600 aircraft (SN 1223) to **Air Algerié** in December. It is the airlineôs first of three -600s that were ordered earlier this year. The last one will be delivered in June 2016. **Air Algerié** operates 12 ATR 72-500s.

Bangkok Airways, a long-time and loyal customer for **ATR,** took delivery of its first ATR 72-600 (SN 1194) at Toulouse, France, on November 27. The carrier plans to take delivery of nine new ATR aircraft by 2017. **Bangkok Airways** operates a fleet of eight ATR 72-500s on an expanding network of domestic and regional services. There are currently more than 300 ATR aircraft flying in Asia-Pacific, by more than 50 airlines. **ATR** has taken orders for 430 aircraft from airlines in Asia-Pacific since 2005, which account for two-thirds of total sales of regional aircraft below 90 seats.

Bombardier. **Nok Air**, Thailand, received its third and fourth high-density, 86-seat Q400NGs (SN 4479 & 4480) in November. It has two more on order and two on option. **Arik Air**, Nigeria, took delivery of its fourth Q400NG (SN 4470), and **Air Côte d'Ivoire** accepted its first two Q400NGs (SN 4474 & 4478). The first of the planes was previously allocated to **Arik Air.** The airline ordered the two Q400NGs and took two options in December, 2013. The airline opted to enroll its Q400 NextGen fleet in **Bombardier's** ó**Smart Parts'** program, which offers competitive and predictable component exchange and repair costs, as well as superior quality and availability of key components. The five-year **Smart Parts** agreement is customized to meet the airlineôs specific operational and performance needs, the manufacturer said.

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Bombardier Commercial Aircraft officially welcomed **Investec Bank plc** to its family of Q400 aircraft lessors when Thai low-cost carrier **Nok Air** closed the sale and leaseback of two 86-seat aircraft. **Investec** was established in 1974 and its current market capitalization is approximately £3.6 billion ($5.63 billion).

Accidents and Safety

From Aviation Safety Foundation

Indonesia AirAsia Airbus A320-216 (PK-AXC, SN 3648) crashed into the Java Sea between Surabaya, Indonesia, and Singapore, on December 28, 2014. All 155 passengers and seven crew members were killed. The flight took off from **Juanda Airport,** Surabaya at 05:35 local time and it disappeared from the radar at 07:24, a few minutes after the pilot asked permission to climb to 38,000 feet to over fly severe weather. The air and naval forces of Australia, Indonesia, Malaysia and Singapore hunted for three days before finding wreckage. The search was impeded by severe weather. The aircraft was owned and managed by **Doric Leasing.** This was **Indonesia AirAsia's** first serious accident in its 10 years of operation.

Shaheen Air Boeing 737-4H6 (AP-BJN, SN 26460) was damaged after landing at **Allama Iqbal International Airport,** Lahore, Pakistan, on December 30, 2014. The airplane ran off the right side of

the runway and came to rest in the grass. The left hand main gear collapsed. There were no injuries to the passengers and crew.

Air Sirin Antonov An-26 (4L-AFS, SN 8608) flew into a forested mountainside near Uvira, D.R. Congo, on December 28, 2014, and all six crew members were killed. The airplane was flying from Entebbe, Uganda to Pointe Noire, Congo.

The Sri Lanka Air Force lost **Antonov** An-32 (SCM-864, SN 3509) on December 12, 2014. Four of the five crew members were killed and the other was seriously injured in the post-crash fire. The plane was on approach to the **Colombo Airport** in Ratmalana, Sri Lanka, and may have hit a buildingôs roof before crashing in a rubber estate, northeast of the airport. Weather may have been a factor in the crash.

Transportes Aereos Terrestres de Havilland Canada DHC-6 Twin Otter 300 (XA-UOA, SN 721) sustained substantial damage in an accident at **Tequesquitengo Airport**, Mexico, on December 22, 2014. The aircraft was landing or taking off from a small airstrip, when the right hand wing hit a tree. The aircraft smashed into some shipping containers and its tail section was sheared off.

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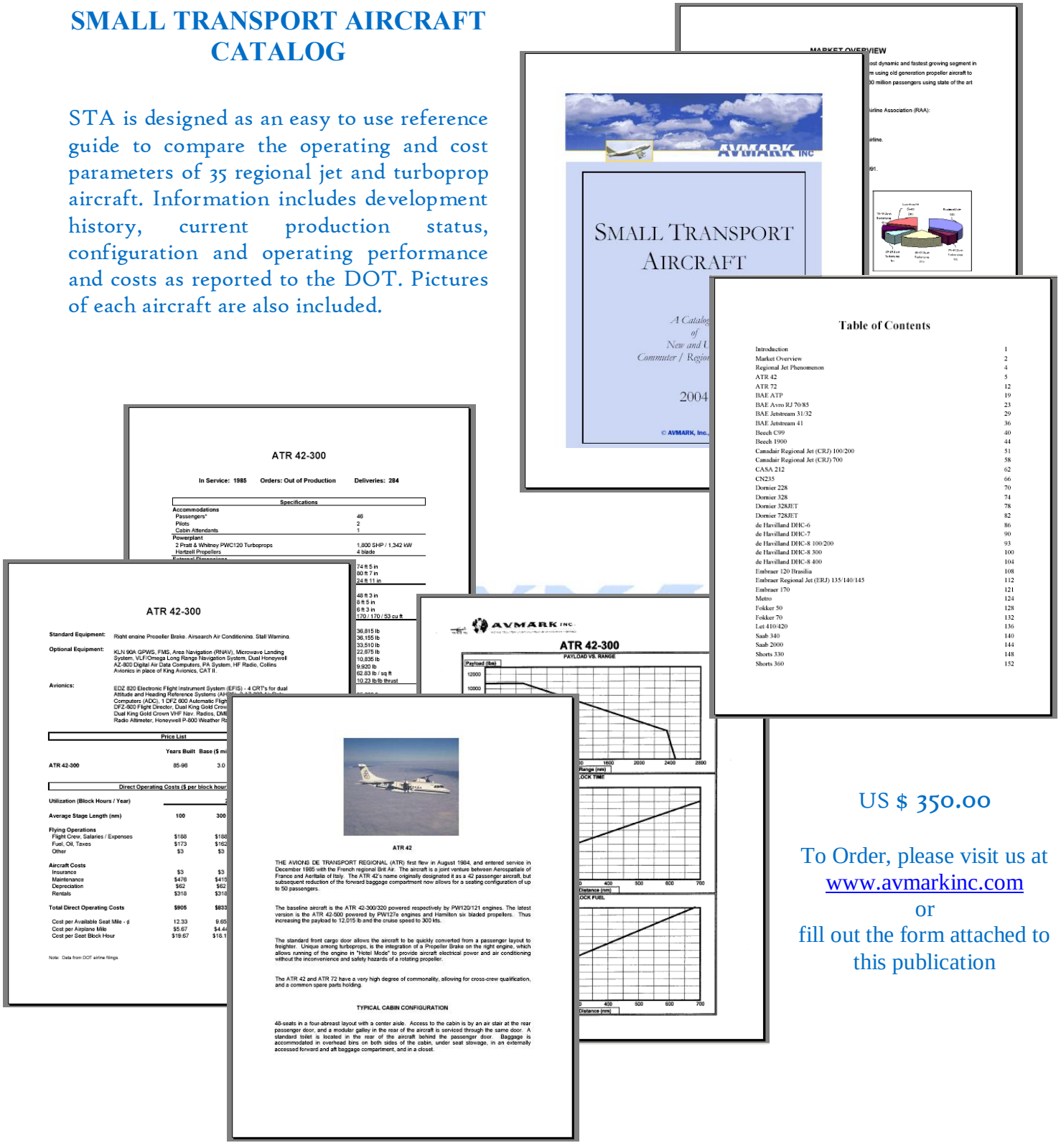

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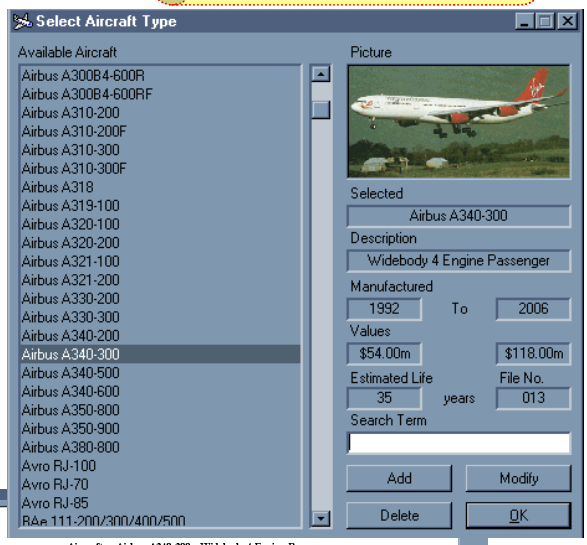

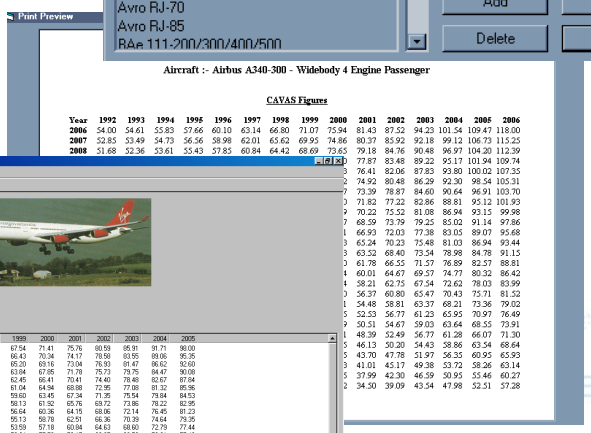

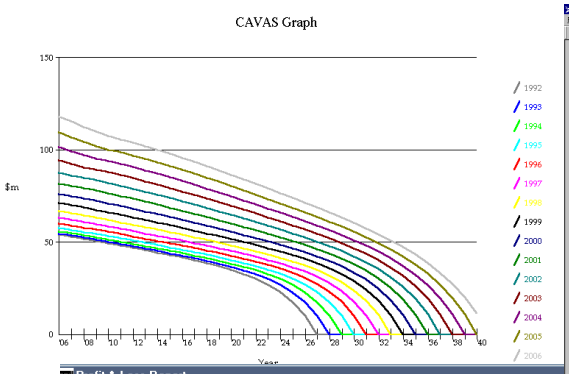

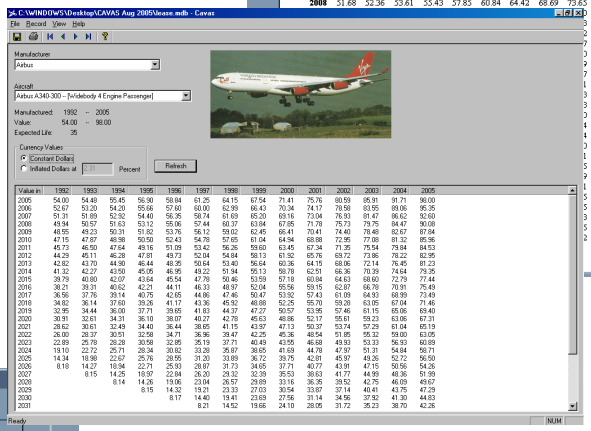

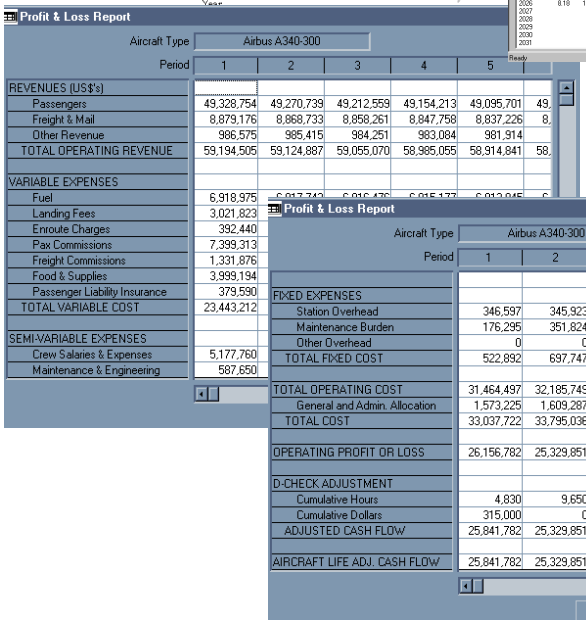

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