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Newsletter

Market Comment

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Widebody Twin Jet Price War? Airbus launched its new A330neo airliner this summer and list priced the A330-800neo at \$241.7 million, \$20 million more than the current A330-200. Airbus expects the A330-900neo to retail at \$275.6 million, a \$30 million premium over the A330-300. Boeing list priced the 787-8 at \$218.3 million, the larger 787-9 is valued at \$257.1 million and the largest 787, the -10, is selling for \$297.5 million. Airbus thinks it can sell its A330neo for 25 percent less than a 787-9, and still will not cannibalize sales of its own A350. Boeing is betting that customers will pay a premium for the 787's carbon-fiber technology and will compete with the A330 on value rather than price. There is a debate whether the airline market can absorb the A330neo as well as the A350 and 787. Analysts say the competition could push down prices and margins across the industry. Early A330neo sales (127 at the launch), the forecast that Airbus will sell 1,000 A330neos by 2030, and backlogs of 750 A350s and 865 787s made the widebody market look overheated. One analyst said "the herd is running" there appears to be demand for it now, but it just adds to the ordering. Another analyst forecast "serious problems at the end of decade" when the A330neo, A350-1000 and 787-10 enter service, followed by the 777X several years later. Airbus and Boeing dismissed the worry about an order bubble. In the next two decades they forecast that they will sell more than 4,500 jets worth \$1 trillion in the 250-300 seat category – the prime market for the A330neo, A350 and 787. Jeff Knittel, president of CIT Transportation sees room for both manufacturers. "When we look at the supply-demand curve, it looks fine to us," he said. Analysts question whether both planemakers can continue on this route, while preserve pricing power for their newer jets. Delta Air Lines wants to replace some of its 95 767-300/-300ERs which were delivered between 1987 and 2001. Its CEO Richard Anderson made a low-ball bid for the A330neo, offering the "high 70s, low 80s" for the plane, a third of the list price. Boeing will not want to cut its prices but could offer discounts to airlines that don't need the 787's long range, perhaps by de-rating the engines and reducing the fuel capacity. It could also cut 787 production costs within the company and its supply chain, so that it can shave prices further without sacrificing margins. It may increase 787 production to avoid being crowded out of the market. Boeing is currently building 10 787s a month, and will boost this to 12 a month in 2016 and 14 by 2020. It could further increase its build rate to 16 a month. Boeing may also overbook its yearly production capacity to insure against delays and cancellations in

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assuming a fairly stable order attrition rate. **Boeing** oversells its narrowbodies because of its ability to shuffle its delivery schedules to accommodate the changes. Another analyst said several airlines delayed retirement of older aircraft because the new ones were not available. Acceleration in retirements of fuel inefficient widebodies will allow airlines to absorb the thousands of new jets to be built in the next decade. He doubted **Airbus** and **Boeing** would allow themselves to launch a price war like they did in the narrowbody market a decade ago.

Airbus Orders

Airbus logged 13 orders for its A320 Family aircraft and eight A350-900s in August, raising **Airbus'** gross sales to 1,001 for the year. During the month, 37 jetliners were delivered to customers worldwide, bringing total 2014 deliveries to 389. The month's largest transaction was **International Airlines Group's (IAG)** conversion of eight A350-900 options into firm orders for its Spanish-based carrier, **Iberia**, which became a new A350 customer. The A350 XWB order book now stands at 750 firm sales. **Airbus** sold two more A319s (a total of five) to **Z/C Aviation Partners** for lease to **American Airlines**, four A320neos to **China Aircraft Leasing Corporation (CALC)**, two A320neos to **Aegean Airlines**, one A320 to a private customer and four A320neos to **AirAsia**. The A320neo order book rose to 3,257 firm sales from 60 customers. The year's net orders totaled 722 aircraft in 2014, after taking 279 cancellations into account.

Airbus delivered 30 A320 Family jetliners, six A330s and one A380 in August, providing 389 aircraft to customers so far in 2014. **Airbus'** backlog totaled 5,892 aircraft at August 31, comprised of 4,733 from the A320 Family, 230 A330s, 750 A350s and 179 A380s. These numbers represented an average of eight to nine years of output at full production rates, but only two years production for the A330 program.

Airbus said 73 of the 186 A320 Family cancellations this year were conversions from the current-generation A320 to the newer and more efficient A320neo. In August, **AirAsia** switched four of its A320ceo orders to the A320neo for a total number of A320 order conversions to 73 this year. The 279 total cancellations also include the loss of 70 A350 orders from **Emirates** in June. To date, **Airbus** has booked 3,257 firm orders for the A320neo Family from 60 customers, which represents a 60 percent market share in its category.

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Aegean Airlines, Greece's largest airline, ordered two additional A320ceo aircraft. It purchased five A320s in September 2007. The new planes will be equipped with Sharklet wing tip devices and will be powered by **IAE V2500** engines. The aircraft will feature the enhanced 78-ton take-off weight capability, which will enable the carrier to fly longer-range routes. **Aegean Airlines** is a member of **Star Alliance**, and operates two A319s, 28 A320s and six A321s. This new order will strengthen the airline's network that encompasses 205 international routes (scheduled and charter flights) from its eight Greek bases, thus supporting tourism in Greece.

AirAsia switched four of its A320ceo orders to the A320neo. To date, the airline dropped 27 of its near-term A320ceo deliveries in favor of the A320neo which will enter service after late 2016. Apparently, four of **AirAsia's** near term A320ceo delivery positions were taken over by **China Aircraft Leasing Corporation (CALC)** for lease to **Chengdu Airlines**, China.

Airbus Orders, Deliveries and Backlog August 2014

AUG ORD	AUG DEL	AUG CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-0-	79	79	-0-
			A319		
2	1	-0-	1,510	1,416	94
			A320		
11	17	-4	7,079	3,737	3,342
			A321		
-0-	12	-0-	2,266	969	1,297
			A330		
-0-	6	-0-	1,342	1,112	230
			A350		
8	-0-	-0-	750	-0-	750
			A380		
-0-	1	-0-	318	139	179
This Month			This Year		BL
21	37	-4	722	389	5,892

Airbus sold 14,537 aircraft and delivered 8,646 as of August 31, 2014. Two hundred seventy nine orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.

Lufthansa Group's SWISS (Swiss International Air Lines) added 15 A320neo aircraft to its A320 fleet in September. The firm order included purchase rights for an additional 10 of the type, which will be confirmed at a later stage. The A320neos will gradually renew and replace **SWISS'** existing fleet of five A319s, 23 A320s and eight A321s. No engine selection has been made for the A320neos. They will be delivered to **SWISS** from 2019 onwards. **SWISS** is the national airline of Switzerland, and operates 14 A330-300s and 15 A340-300s along with the A320 Family fleet.

Lufthansa Group's supervisory board also approved the purchase of ten A320ceo aircraft for its subsidiary **Eurowings**. The airline will be **Lufthansa's** new low-cost unit that was launched by the **Group's** board in July 2014. **Lufthansa** is a full-service airline which targeted business customers, and it wanted to expand **Eurowings** to serve tourist destinations outside Germany. It already operates domestic budget services under the **Germanwings** brand. The new A320s will replace **Eurowings'** 23 **Bombardier CRJ900s**, which were deemed not cost-efficient enough. **Lufthansa** will transfer another

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13 of its A320s on order to **Eurowings** starting in 2015 as the **Group** seeks to expand budget operations to tap into a segment of the market that it sees as offering strong growth, **Lufthansa** said. **Eurowings** operated A319s in the 1990s and early 2000s. **Lufthansa's** 25 new A320s were valued at €2.5 billion (\$3.24 billion) at list prices. The **Lufthansa Group** runs one of the largest A320 Family fleets in the world, with almost 300 A320 Family aircraft currently in service. The **Group** did not announce its engine selection for the new A320s.

EasyJet Converted its Last Options into an order for 27 current engine option A320s in September. The low-cost carrier now has ordered 315 A320ceo Family aircraft and 100 A320neos. It will take delivery of this last batch of single-aisle airliners from 2015 through 2018. The airline placed the purchase options as part of a larger order in 2002 and it now has 70 A320ceos on firm order. **EasyJet** currently has 153 A319s and 73 A320s in its fleet. It still holds purchase rights for 100 A320neo jets that were reserved when it bought 100 A320neos in June 2013. **Airbus** said **easyJet** was the largest A320 Family customer and operator in Europe and operates one of Europe's most extensive route networks. The airline is the U.K.'s largest by numbers of passengers carried.

Airbus Flies First A320neo. The A320neo flew on September 25 for around two and a half hours. The aircraft A320-271N (F-WNEO, SN 6101) was crewed by two **Airbus** Experimental Test Pilots, a Test-Flight Engineer on the flight deck and two Flight-Test Engineers in the cabin. It was powered by **Pratt & Whitney** PW1100G-JM Geared Turbofan engines and weighed around 60 tons. **Airbus** President and CEO **Fabrice Brégier** said, "The A320neo, which has taken to the air today, builds on the outstanding success of the A320 Family. The aircraft through its incremental innovations combines the most efficient engine and aerodynamic technologies, as well as new cabin features to bring to market a product which will consume 20 percent less fuel per passenger." The maiden flight marked the beginning of a rigorous flight test campaign involving eight aircraft encompassing all models and both new engine options, the PW1100G-JM and the **CFM International** LEAP-1A turbofans. The NEO development fleet will perform a combined total of around 3,000 hours of test flying. The **Pratt & Whitney** powered A320neo will be the first of the NEO Family to receive type certification and will enter airline service in the fourth quarter of 2015 with **Qatar Airways**.

International Airlines Group (IAG) decided to convert eight A330-200 options into firm orders for Spain's flag carrier **Iberia**. The airline will become a new operator of the A330-200 when the first aircraft are delivered starting in late 2015. The last of the new 242-ton A330s will be handed over in 2018. The A330s will be equipped with **GE** CF6 engines. **Iberia** operates an all-**Airbus** fleet of 13 A319s, 12 A320s, 18 A321s, eight A330-300s, eight A340-300s and 17 A340-600s. **IAG** placed the options when it bought eight A330-300s for **Iberia** in 2010. **IAG** took 10 more A330 options when it finalized this order. The newly ordered A330s, and the A350s it purchased in August, will replace 16 A340 family aircraft in **Iberia's** long-haul fleet. The airline flies to more than a 100 destinations in 38 countries. The A330 Family, which carries from 250 to 300 passengers, has won more than 1,300 orders, with more than 1,000 aircraft in service.

Airbus Sales Chief John Leahy told the airline and leasing industry at the **ISTAT** conference that it may increase A320 production. It was cautiously looking at its supply chain and other conditions, before deciding on further increases in output of the A320. **Boeing** said it might lift the 737 series production

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rate to 52 planes a month in 2018, up from 47 per month by 2017, and the current 42 per month. **Airbus** is considering an increase to 50 a month. Mr. **Leahy** said, "We are not going to chase marginal production... and we will not take marginal deals just to keep up volume." He also commented that the company would look at boosting A350 production past the already planned rate of 10 a month to meet demand. That discussion will be made after the aircraft had been in service for about a year.

Emirates President **Tim Clark** said he would order 60 to 70 A380neos if **Airbus** decides to launch the enhanced derivative. The Dubai-based airline has already ordered 140 A380s, and taken delivery of 50. Mr. **Clark** has long advocated that **Airbus** re-engine the A380 with advanced engines from **Rolls-Royce**. Mr. **Clark** admitted that he has yet to convince **Airbus** that it should invest its time and money to develop the proposed A380neo, which could offer a double-digit improvement in operating economics and be available from around 2020. "Rolls-Royce is in the market [to power an A380neo]. They're quite keen to do that," he said. He realized the A380neo business case is not stacking up very well in Toulouse. Hopefully we can persuade them in the next six months or so." His proposed order for 60 or 70 A380neos would bring the airline's backlog to 150-160 aircraft, which would represent two thirds of the A380 backlog, up from 45 percent now. **Emirates** wants to convert at least 25 of its 90 A380s on order to the A380neo. Can **Airbus** afford to disappoint its largest customer and dismiss another 70 orders for the slow selling A380? An **Emirates** order would bring the A380 sales total to 388, past the current plane's break-even level, but the new orders would probably not pay for the development of the A380neo.

Boeing Orders

Airlines and Lessors Bought 93 737s and 14 777s in August, for a total of 107 new sales. **Boeing** has now booked a net of 1,047 orders in the first eight months of the year. Cancellations of 63 aircraft lowered the net order total to 984. **Boeing** delivered 61 new airplanes in August, including 37 737s, three 747s, eight 777s and 13 787s, for a total of 461 so far this year.

In August, Boeing sold 30 737-800NGs, 50 737 MAX 8s and two 777-300ERs to **BOC Aviation**. The lessor has now ordered 143 737s, three 767-300ERs and 16 777s, and taken delivery of 61 737s, the 767s and all but two 777s. **Copa Airlines** ordered two more 737-800NGs,

Boeing August 2014 Orders, Deliveries

AUG ORD	AUG DEL	AUG CANX	TOTAL ORD	TOTAL DEL	BACK LOG
737					
93	37	-0-	12,188	8,180	4,008
747					
-0-	3	-0-	1,538	1,492	46
767					
-0-	-0-	-0-	1,110	1,062	48
777					
14	8	-0-	1,803	1,230	573
787					
-0-	13	-9	1,048	183	865
This Month			This Year		BL
107	61	-9	941	461	5,540

Boeing sold 25,217 aircraft and delivered 19,667 as of August 31, 2014.

The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s. Sales totals include 63 cancellations.

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for a total of 60 -800s and 14 -700s. A **VIP Customer** purchased one 737 BBJ2 Boeing Business Jet. The manufacturer sold 10 777-300ERs to one **Unidentified Customer** (believed to be **Kuwait Airways**) and two more 777-300ERs to another customer. A third customer purchased 10 737 MAX aircraft. **Boeing** lost five 787 orders from **Batik Air** and four 787s from **Transaero** in August.

In Early September, an **Unidentified Customer** (**Ethiopian Airlines**) ordered 20 737s. Later in the month, another unidentified customer committed to buy 67 737s, and **Avolon** bought five 737s and six 787s). **Boeing** lost six 737s as of September 18. **Ethiopian Airlines'** order for 20 737 MAX was previously listed as unidentified.

BOC Aviation placed the largest order in the lessor's 20-year history in August. It committed to buy 50 737 MAX 8s, 30 Next-Generation 737-800s and two 777-300ERs, valued at \$8.8 billion at list prices. The 737s will be delivered from 2016 to 2021. The two 777-300ERs have already been contracted for lease with an existing customer. The Singapore-based leasing company is growing its portfolio of fuel-efficient airplanes. **Robert Martin**, managing director and chief executive officer of **BOC Aviation** said the lessor successfully placed the 50 737NGs aircraft it ordered in 2006, and the new order was part of their commitment to respond to airline customers which are expanding or replacing older fleets. He said, "BOC expects healthy demand for the Next Generation 737 and 737 MAX in the next seven years." **BOC Aviation** claims its fleet is among the youngest in the leasing industry with an average of less than four years old. They have now purchased 143 737s, three 767s and 16 777s. As of June 30th, **BOC Aviation's** fleet of 251 aircraft included 118 **Boeing** aircraft (95 737 NGs), which are operated by 27 airlines. **BOC** bought 43 **Airbus** A320 Family, including seven A320neos at the **Farnborough Airshow** in July. The company is the leasing arm of **Bank of China**, and its A320 contract came several weeks after rival Chinese lessor, **SMBC Aviation**, ordered 115 **Airbus** jets worth \$11.8 billion. Leasing companies are riding a boom in aviation financing and see strong demand from airlines. Seeking to keep lean balance sheets, airlines are increasingly turning to lessors to upgrade fleets with fuel-efficient aircraft. The Asia-Pacific region's customers are expected to buy almost \$2 trillion worth of airplanes over the next 20 years, representing 39 percent of global sales of \$5.2 trillion, according to **Boeing's** latest forecast.

Qantas will exercise some of its 50 options for **Boeing** 787-9s for delivery from 2017 after its international business rebounds to profitability. The airline ordered 787s in 2006, but it downgraded most of the firm order into 50 options in 2013, reserving delivery positions from 2016 onwards. The airline kept 14 787-8 orders that will be delivered to its budget unit **Jetstar**. Three of those 787s were also deferred. Chief Financial Officer **Gareth Evans** said, "We've pushed back the first couple of those [options] from 2016 into 2017 and we're very much looking forward to exercising [them] and bringing those aircraft into the **Qantas** fleet." The airline linked the exercise of the 787 options to its troubled international operations returning to profitability. In the meantime, it will refurbish the cabins of its 10 A330-300s, and use them on Asian routes and to replace their 14 747-400s, which will be retired by early 2016. The airline is also accelerating the retirement of some older **Boeing** 767-300s to reduce costs. **Qantas** is refurbishing the 737-800s it uses on domestic services, to give passengers a newer product as the airline copes with intense competition in the Australian market.

Copa Airlines, Panama, added two more **Boeing** 737-800NGs, which will enter service in 2017. The new 737s will replace older jets that were scheduled to leave the fleet, although the management said

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they could also be used for growth if needed. **Copa** plans to end the year with a fleet of 98 aircraft, comprising 54 737-800s, 18 737-700s and 26 **Embraer** E190s, and it now has 25 737-800NGs on order. The airline retained an additional 14 737-800 options, after conversion of the two aircraft.

Ethiopian Airlines announced its order for 20 737 MAX 8s, worth more than \$2.1 billion at list prices. The contract included options and purchase rights for a further 15 737 MAX 8s. The order was recently published on the **Boeing Orders & Deliveries** website as "unidentified." The sale was the largest single order for **Boeing** planes from an African carrier in terms of numbers. **Tewolde Gebremariam**, CEO of **Ethiopian Airlines**, told the press, "Today's order underlines our commitment to our 15-year strategic plan, 'Vision 2025' in which **Ethiopian** will strive to become the leading airline group in Africa carrying 18 million passengers per annum." **Ethiopian** currently flies to 83 destinations across five continents from **Bole International Airport** in Addis Ababa. The Ethiopian flag carrier operates a fleet of more than 50 **Boeing** airplanes, including 737NGs, 757s, 767s, 777s, 787 Dreamliners and a cargo fleet of 757s, 777 Freighters and MD-11Fs. The airline also operates 15 **Bombardier** Dash 8-Q400s and has 15 **Airbus** A350-900s on order with the first deliveries scheduled for 2017.

Boeing Launched its Newest Member of the 737 MAX Family with the sale of 100 airplanes to **Ryanair**. The European low-cost carrier is purchasing the 737 MAX 200, which is a 200-seat variant of the 737 MAX 8. The commitment was valued at \$11 billion (\$110 million each) at list price. **Ryanair** took options on another 100 737 MAX 200s. The airline currently operates more than 300 Next-Generation 737-800s, the largest fleet of **Boeing** airplanes in Europe, and the airline took delivery of its first 737 in 1994. "Ryanair is proud and honored to become the lead operator of **Boeing's** 'game changer' 737 MAX 200, which will expand our fleet to 520 aircraft by 2024, and create another 3,000 new jobs for pilots, cabin crew and engineers in Europe, while allowing us to grow traffic from 82 million last year to over 150 million annually by 2024," said CEO **Michael O'Leary**. The 737 MAX 200 was developed to fill the needs of the fast growing low-cost sector, **Boeing** said, which was forecasted to account for 35 percent of single-aisle airline capacity by 2033. The 737 MAX 200 will offer airlines up to 11 more seats than the 737 MAX 8

Boeing Commercial Airplanes Chief Executive **Ray Conner** said, "Our focus today would be around a 52-a-month rate somewhere in that 2018 time frame. Now, I can tell you that the demand is there... significant demand. So I'm not uncomfortable with the timing or with [the] rate." The remarks were the most explicit by **Boeing** to support the view that the company will announce another planned rate increase for the 737. It currently builds 42 737s a month and has firm plans to lift the production rate to 47 a month in 2017. Mr. **Conner** said there is "incredible pressure" to increase the 737 production rate beyond current targets. **Boeing** President **Dennis Muilenburg** said the company "had taken a serious look" at raising rates, but he declined to say whether a decision had been made. Mr. **Conner** said the company will not lift the 787 production targets beyond 12 a month in 2016, and 14 per month by the end of the decade. **Boeing** had difficulty with 787 production this year. Out-of-sequence work backed up the assembly line, forcing workers to finish aircraft outside the factory. Widebody production is less flexible than the 737, because of the wider range of interiors available, and the need to coordinate suppliers' production with the assembly line, Mr. **Conner** said. As mentioned above, **Airbus** is also looking at raising A320 Family output beyond the 46 a month rate it plans for 2016. It may decide by year-end. **Boeing** had a backlog of 4,008 737 orders on August 31, which represented nearly eight years of production at current rates. **Airbus'** A320 Family backlog stood at 4,733.

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by incorporating a mid-exit door. This will allow the entire cabin to exit the airplane in 90 seconds. The extra passengers will be accommodated by adopting slimline seats with less back padding, stripping out galley space and the moving toilets. The changes will add \$1 million a year in revenue for each jet, the CEO said. Mr. **O'Leary** spent years persuading **Boeing** to find a way of raising the 737's capacity. "Two-hundred seats are the sweet-spot in single-aisle market. There's a real opportunity to take traffic from established carriers," he said. **Boeing** said 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 than the 737 MAX 8, driving economic growth and increasing access to air travel. The manufacture forecasted the majority of the single-aisle market will remain at 160 seats. **Boeing** has sold 2,239 737 MAX to 46 customers worldwide, as of late September.

Avolon finalized an order for six 787-9 Dreamliners and five additional 737 MAX 9s, which were valued at more than \$2.1 billion at list prices. The commitment to purchase the airplanes was announced during the **2014 Farnborough Airshow** in July. This was **Avolon's** first order for the 787 Dreamliner and will increase the lessor's 737 MAX portfolio to 20 airplanes. The lessor ordered 15 737 MAX in September 2012.

Kuwait Airways is close to buying 10 777-300ERs valued at \$3.3 billion at list prices. The aircraft could join the fleet by 2016 if the order is signed. So far, the negotiations have not been made public. Kuwait's civil aviation council gave the state-owned airline the go-ahead for negotiations with **Boeing**, one source said. The **Kuwaiti** 777s will replace the airlines's two 777-200ERs and four **Airbus** A340-300s. A firm order could be announced by year's end.

Boeing Forecast that China Needs More Than 6,020 Aircraft in the next two decades to meet growing overseas leisure travel demand. This was eight percent more than the 5,580 airplanes they estimated last year. The airplanes are valued at \$870 billion, and represent a near tripling of China's current fleet. The country is the world's second-biggest aircraft market, and is essential to **Boeing's** long-term global strategy. The company expects China to overtake the United States as the world's single-biggest aircraft market by 2032. **Randy Tinseth**, VP of Marketing at **Boeing Commercial Airplanes**, said low-cost carriers and regional airlines are driving demand for more direct flights to more destinations. Chinese airlines are increasingly looking at overseas routes as their domestic market cools amid a slowing economy and government budget austerity. He said, "For years the carriers have grown internationally at a fairly slow rate. They are starting to expand the rate of growth." **Boeing** estimated that single-aisle jets would account for about three-quarters of future deliveries to China. The company has received orders for at least 210 737s and two 777s this year from **China Eastern**, **Juneyao Airlines** and **BOC Aviation**. The manufacture sold 13 percent more aircraft to China in the first eight months of the year than it got in all 2013. Chinese airlines and lessors purchased 260 airplanes so far in 2014, compared with 230 last year. **Boeing** expects to deliver about 140 planes to Chinese airlines and lessors this year, close to the record 143 it handed over in 2013. China was forecast to operate 6,930 commercial airplanes by 2033, more than triple the 2,310 it had at the end of 2013.

The FAA Certified Boeing's 787-9 Dreamliner in August. The first deliveries of the **General Electric** GENx engined aircraft to **United Airlines** were scheduled for early September. The GENx (next-generation) family of the GENx-1B64, -1B67 and -1B70 are all certified for the 787-9 and the 787-8. The GENx-1B70 is also planned to be certified for the 787-10, which is scheduled for delivery to

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customers in 2018. The 787-9 already obtained **FAA** certification with **Rolls-Royce** engines. The first 787-9 in that configuration was delivered to **Air New Zealand** in June.

Regional Report

Malmo Aviation declined to be the first customer to fly the new **CSeries** jet commercially. **Malmo** is owned by **Braathens Aviation**, Sweden, and was due to be the first customer to take delivery of the new **CSeries** in the second half of 2015. It ordered 10 **CSeries CS100s** and was to originally to take the first airplane in mid-2014. In its second-quarter 2014 report the airline said, "It has subsequently emerged that [the May engine failure] may cause another delay to the **CSeries** introduction. We have informed **Bombardier** that we will not assume the role of formal launch operator of the aircraft type."

Because of the increased uncertainty, it was in discussion about other possible changes to the delivery schedule. The airline assured **Bombardier** that it was not going to cancel its order due to the multiple delays. Spokesman **Geir Stormorken** said, "We have a firm delivery contract with **Bombardier**. So we are fully committed." **Bombardier** hopes the **CSeries** will win a good portion of the 100- to 149-seat jet market because of its superior operating and fuel efficiencies, but many airlines are taking a wait-and-see attitude and waiting for the flight tests to be completed. The company said the engine incident would not delay deliveries and that the **CSeries** was still on track to go to customers in the second half of 2015, the current entry-into-service time frame. It is now speculated that the in-service date will be closer to the end of 2015, or possibly early 2016. **Bombardier** is in advanced talks with an unidentified airline that could become the first operator of the **CSeries** when it is delivered next year.

Macquarie AirFinance placed a firm order for 40 **Bombardier CS300** aircraft to be delivered between 2017 and 2019. The deal includes options to buy another 10 **CS300s**. This was the largest single order for the **CSeries** since February 2010. **Macquarie AirFinance** is a wholly-owned affiliate of the Ireland-based company, and currently owns or manages 136 jet aircraft leased to 73 operators in 43 countries. Its chairman **Stephen Cook** said, "The **CS300** will allow us to offer our customers the only type of aircraft optimized for the upper end of the 100- to 150-seat market segment. Its advanced technologies, attractive economics and environmental attributes were key factors in our selection of the **CS300** jetliner."

Bombardier announced that the **CSeries** flight test vehicle two (FTV2) resumed flying on September 8, at its facility in Mirabel, Québec. The flight followed an in-depth review and analysis of the engine-related incident that occurred during stationary ground maintenance testing involving **CSeries** aircraft FTV1 on May 29, **Bombardier** said. **Pratt and Whitney** has taken appropriate measures to address the issue, including the modification of the engine's oil lubrication system, the company explained. **Rob Dewar**, Vice President, **CSeries** Aircraft Program commented, "We are pleased to see the **CSeries** aircraft back in the air. The geared turbofan (GTF) engine has over 10,000 hours of ground and flight testing and we're confident that it will enter into service meeting or exceeding the fuel burn, emissions, thrust and noise specifications, as promised by **Pratt & Whitney**." **Bombardier's** projected development costs have soared to about \$4.4 billion, about \$1 billion more than originally estimated, after the company twice delayed its schedule and got a late start on test flights. Mr. **Dewar** said, "Aircraft flight test programs are complex and involve extreme testing meant to draw out any potential issues and correct them prior to entry-into-service." The test aircraft have completed 330 flight hours out of a 2,400-hour program, which means the schedule will tighten significantly.

Republic Airways contracted to purchase of 50 more **Embraer** E175 jets, valued at \$2.1 billion based on 2014 list prices. The firm order will be included in **Embraer's** third-quarter backlog and will be filled from the third quarter of 2015 through the end of 2017. The aircraft will be operated for **United Airlines** under the **United Express** brand. The airline ordered 47 firm and 47 option E175s in January 2013 and 34 have already been delivered. **Republic** maintains 32 options for E175s from the January order. As part of the deal with **Embraer**, **Republic** will sell its 31 **Bombardier** Dash 8-Q400s to **Flybe**, U.K. Concurrently **Flybe** cancelled 20 of its 24 E175 orders. The associated deals will increase **Embraer's** backlog by 30 E175s in the third quarter. **Republic Airways** was one of the first U.S. carriers to fly E-Jets and received its first E170 in 2004. With this new order, **Republic** will have 72 E170s and 151 E175s for a total of 223 E-Jets in its fleet.

Japan Airlines (JAL) placed a firm order for 15 **Embraer** E-Jets for its subsidiary **J-Air**, at Osaka's **Itami Airport**. The airline will acquire the E170-E1 and E190-E1 variants, and took options for an additional 12 aircraft. The first jets will be delivered in 2015. The **Oneworld** carrier has 15 E170s in its **J-Air** fleet, which currently operates 176 daily flights across its network of 21 cities that include Osaka, Sapporo, Sendai, Kagoshima, Miyazaki, and Fukuoka. The firm order is valued at an estimated at \$677 million (\$45.13 million each), based on list prices. The order will be included in **Embraer's** third-quarter backlog.

Japan Airlines has signed a Letter of Intent to buy 32 Mitsubishi Regional Jets (MRJ) worth approximately \$1.5 billion (\$46.875 million each). The MRJs will be operated by **JAL's** wholly-owned regional subsidiary **J-Air** on domestic routes. The first will be delivered in 2021. The order gives Japan's first domestically manufactured commercial jet a sales boost. **Mitsubishi** has long tried to woo the flag carrier, but **JAL** was cool towards the MRJ, because it did not want to add a new aircraft type to its fleet. The MRJ program is 64 percent owned by **Mitsubishi Heavy Industries**, which has struggled to win orders due to production delays and strong competition from **Bombardier** and **Embraer**. The company is spending \$1.9 billion to develop the MRJ, but it risks being a commercial flop like its made-in-Japan predecessor, the YS-11 turboprop. So far the MRJ has won less than 200 confirmed orders, and is still far away from breaking even. The project was launched by **All Nippon Airways** which ordered 15 MRJs and optioned 10 more. It will receive the first one in 2017. The MRJ will be powered by fuel-efficient **Pratt & Whitney** PurePower Geared Turbofan engines, but its plan to get its product to market before new versions from **Embraer** and **Bombardier** have been stalled by delays in

Mitsubishi Aircraft Corporation announced today that it has signed an Aircraft Purchase Agreement with **Air Mandalay Limited (AML)** for the purchase of six firm MRJ90s with purchase rights to an additional four MRJ90s. Deliveries are scheduled to commence in 2018. **Air Mandalay** is based in Yangon, Myanmar, and it currently operates three **ATR** regional turboprops to 15 domestic destinations. It plans to expand and enhance its fleet through the introduction of regional jets. To date, **Mitsubishi Aircraft** has booked 185 firm orders and 180 options from five Japanese and American carriers. **AML** is the first Asian airline outside of Japan to select the **MRJ**. **Mitsubishi Aircraft** forecasted demand of about 1,000 airplanes in the expanding Asian regional jet market by 2032.

Eastern Air Lines Group signed a firm order contract for 20 MRJ90 aircraft and took purchase rights to an additional 20 MRJ90s. **Mitsubishi Aircraft** and **Eastern** signed a Memorandum of Understanding for the MRJ90s at the **Farnborough International Airshow** in July. Deliveries are scheduled to commence in 2019.

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development. **Mitsubishi Aircraft** forecasts a demand for up to 5,000 70- to 90-seat regional jets over the next two decades. That number is twice what **Bombardier** and **Embraer** forecasted. The Japanese government looks at the MRJ as a strategic investment because it helps the aerospace industry retain engineers and learn new skills that could help it win new business. It is likely that the **Japanese Government** leaned on **JAL** to buy the MRJ in spite of the flag airline's reluctance. **Mitsubishi Aircraft** said it was making steady progress on the MRJ's development, and it expects to deliver the first ones in 2017.

Cambodia Bayon Airlines, a start-up carrier, signed a contract for up to 20 **Xi'an Aircraft** MA60 turboprops with **AVIC Aircraft**. The airline firmly ordered two "Modern Ark" MA60s, and included a letter of intent for 18 more. The first two MA60s are scheduled to be delivered to the carrier by the end of 2014. The new airline is a wholly-owned subsidiary of **Bayon Holding Limited**, which is owned by China's **Joy Air**. The carrier is based in Phnom Penh and will operate domestic services starting in December. It also plans to acquire up to 10 **Airbus** A320s for regional services to cities in China, Japan, Korea, Laos, Thailand and Vietnam. **Bayon Airlines** is the second airline to win the rights to fly domestic routes after **Angkor Air**.

China's Joy Air also ordered 30 **Xi'an Aircraft** MA60 "Modern Arks" in August, for delivery starting in 2015. The airline optioned 30 more and took delivery of a previously ordered MA60 last month. **Joy Air** is a joint venture between **AVIC Group** (parent of **Xi'an Aircraft**) and **China Eastern Airlines**.

Order Changes and Cancellations

Airbus Order Changes and Cancellations. In August, **AirAsia** changed four A320ceo orders to the newer A320neo model. It has now switched 27 A320ceos to the neo. **Airbus** transferred one A319 and one A320 order from the undisclosed category to **China Eastern Airlines**. **LATAM Airline Group** took over **TAM's** order for 27 A350-900XWBs.

Boeing reported the cancellations of five 787-8 orders from **Lion Air** and four 787-8s from **Transaero** during August. **Avia Capital Leasing** switched one 737-700 and one 737-900ER order to two 737-800s. The planes will be leased to **Aeroflot**. **Boeing** announced the customers for 737s when they were delivered during July, including one -700 to **Shanghai Airlines**, and one -700 to **China Eastern**. Other Chinese airlines

Air Berlin, Germany's second largest airline, said it would cancel 18 of its 20 **Boeing** 737-800 and all 15 787-8 Dreamliner orders, valued at almost \$5 billion at list price. **Air Berlin** is 29 percent owned by **Etihad Airways** and in financial straits. It is working to refinance its debt and cut spending, after losing more than \$1 billion in the last six years. Chief Financial Officer **Ulf Huettmeyer** said, "Not taking on the 33 aircraft ordered will significantly reduce future capital expenditure for **Air Berlin** and improve our balance sheet." The airline ordered the 737s in 2006 and 2007 and the 787s in July 2007. The loss of the 737 orders will hardly be a blip in **Boeing's** backlog, but the 787s represent 5.1 percent of the 787-8 program's outstanding orders. **Boeing** continues to list **Air Berlin** as having ordered 787-8s, but the press reported that the airline switched to the 787-9 model in 2013, which delayed the Dreamliner deliveries until 2017. Many of the cancelled 737-800s are already on the production line. **Boeing** should have little problem selling those near term delivery positions to other customers. **Boeing** can easily re-jigger its 787 schedule to accommodate the cancellation.

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were revealed to be the purchasers of -800s, including two for **Shenzhen Airlines**, two -800s for **Xiamen Airlines**, three -800s for **Hainan Airlines**, three -800s for **Shandong Airlines**, one -800 for **Shanghai Airlines**, and one -800 for **China Eastern**. **Okay Airlines** unveiled its previously unannounced order for four 737-800s and six 737 MAX that was placed in May 2014. **Copa Airlines** ordered two -800s in January 2013 as an unidentified customer and took delivery of them in August and September. Three **SpiceJet** -800 orders were transferred to **BOC Aviation**. The airline ordered 13 airplanes in October 2010 and now has eight in backlog. **Goiana**, Ukraine, switched two of its four -900ER orders to the -800 model. **Lion Air** dropped seven -900ER orders and picked up seven new -800s. **Kenya Airways** was the previously unidentified customer for one 777-300ER that was ordered in September 2011 and delivered in August. **Air Canada** switched two 787-8 orders dating from November 2005 to 787-9s and then changed two 787-9 orders placed in April 2007 to 787-8s. Both **Oman Airlines** and **Saudi Arabian Airlines** chose GE GENx engines for their 787s.

ATR Announced the Names of Some Farnborough Customers. **Air New Zealand** picked up one ATR 72-600, and **Air Tahiti** ordered two ATR 72-600s and placed an option on a third. **FlyMe**, Maldives Islands, purchased one ATR 72-600 and optioned a second, and **Synergy Group** ordered 10 ATR 72-600s and optioned 20 more. They will be operated by **Avianca Brasil**. **Dubai Aerospace Enterprise** optioned 20 ATRs, **Myanma Airways** optioned six ATRs and **Nordic Aviation Capital** place options to buy 50 ATR 42-600s. There are still 63 orders and 14 options that are undisclosed.

Leasing & Finance

AerCap Holdings N.V. announced that it has signed agreements to purchase and leaseback of seven Boeing 787-9 Dreamliners with **Virgin Atlantic Airways**. The planes are on order from **Boeing**, and deliveries will start in October 2014. The lease terms for all seven aircraft will be twelve years. **AerCap** has a total of ten Dreamliners in its portfolio and additional 74 committed purchases including those for **Virgin Atlantic Airways**.

FLY Leasing bought two more **Airbus A330-300s** built in 2013 and leased them back to a leading airline in Asia. **FLY** now has a fleet of 122 aircraft on lease to more than 65 airlines in over 35 countries.

Air Lease Corporation will long term lease two new **Airbus A321-200s** to **Sichuan Airlines**, China. Both aircraft are scheduled for delivery in the first half of 2015, and will be fitted with

BOC Aviation earned a \$163 million net profit after tax for the six months ended June 30, 2014. It had a record number of deliveries in the first half to boost the fleet size above 250 for the first time. Its total assets rose to \$10.8 billion. The company held \$496 million in total cash and had over \$2.3 billion in unused credit facilities at the end of the quarter. It paid a dividend of \$139 million in June 2014 to its parent company, **Bank of China**. **BOC Aviation** raised over \$1.2 billion in new financing from the debt capital markets and banking markets in the first half because it maintains investment grade credit ratings. In the first half, **BOC** took delivery of 37 new aircraft, and sold 12 owned and managed aircraft. At the end of the period, the portfolio comprised 251 aircraft, i 232 owned and 19 managed i in service with 56 airlines in 30 countries worldwide. It ordered 43 Airbus A320 Family aircraft in July and 30 737-800s and 50 737 MAX in August. **BOC** added two new customers, **Aeromexico** and **WestAir** in the first half, completed delivery of six **Embraer E190** aircraft to **KLM Cityhopper**, and delivered an **Airbus A321** to **Etihad Airways**. In April, **BOC** also completed the delivery of eight A330-300s and four A320s to **Iberia**.

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Sharklets and powered by **IAE V2533** engines. The aircraft will come from **ALC's** order book.

AWAS Selling Planes. The Dublin-based lessor is offering its fleet of newer aircraft for sale for \$5 billion. It has reportedly received bids from **Hong Kong Aviation Capital**, which is owned by China's **Bohai Leasing** and **HNA Group**, and from **SMBC Aviation Capital**, a subsidiary of **Sumitomo Mitsui Financial**. Asian tycoon **Li Ka-shing's Cheung Kong** said it had submitted a bid for the aircraft portfolio as well. The press said **Macquarie AirFinance**, Australia and **Orix Aviation**, Japan, are considering a bid. **AWAS** is the world's third biggest aircraft lessor after **GECAS** and **International Lease Finance/AerCap**. It is owned by British private equity firm **Terra Firma**, which bought the lessor from **Morgan Stanley** in 2006 for \$2.5 billion. A year later **AWAS** acquired **Pegasus Aviation Finance** for \$5.2 billion. **AWAS** has about 300 aircraft on lease to more than 100 airlines. It intends to sell newer aircraft for approximately \$5 billion, and is looking at an initial public offering (IPO) for the remaining portfolio of older planes that could be worth about \$8 billion.

China Investment, China's sovereign wealth fund and state-owned aerospace company, **Aviation Industry Corporation of China (AVIC)**, are in talks to buy **Avolon**, which recently put itself up for sale. Asian buyers are eager to enter the aircraft leasing market at a time when airlines in the region are growing quickly. Leasing earns good returns and the assets can easily be repossessed and moved to new markets.

Macquarie AirFinance, a global aircraft leasing company based in Dublin, Ireland, has finalized agreements with **AirAsia X**, the Malaysia-based long-haul, low-cost carrier for the purchase and leaseback of three new **Airbus A330-343s**, powered by **Rolls-Royce Trent** engines. The aircraft are scheduled for delivery in February 2015, April 2015 and September 2015.

Engines

BOC Aviation purchased 100 **LEAP-1B** engines for the 50 **737 MAX 8s**, and 60 **CFM56-7BE** engines for the 30 **737-800s** it ordered in August. The deal is valued at \$2 billion at list prices. Both aircraft types are exclusively powered by **CFM International** engines. **BOC Aviation** has also placed orders for the **LEAP-1A** to power **Airbus A320neo** aircraft and the **LEAP-1C** engine to power the **COMAC C919**.

BOC Aviation purchased four **General Electric GE90-115B** engines to power two **Boeing 777-300ER** aircraft. The engine order was valued at close to \$140 million at list price. **Snecma**, France, and **IHI Corporation**, Japan, are revenue-sharing participants in the **GE90** program. The **GE90-115B** engine is part of **GE's** "recomagination" product portfolio – **GE's** commitment to implementing innovative, cost-effective technologies that enhance the customers' environmental and operating performance, the company said.

IAE International Aero Engines won **Federal Aviation Administration** certification of the **V2500-E5** engine which will be installed on **Embraer's KC-390** aircraft. The military transport's launch customer was the **Brazilian Air Force**. The **V2500-E5** engine is rated at 31,330 pounds of thrust, and was selected in July 2011 by **Embraer Defense & Security** and the **Brazilian Air Force**, which was pivotal in defining the aircraft's design and capabilities. While **Embraer** and its customers desire maximum commonality with the **V2500** engine, changes have been made to optimize installation with the new airframe, **IAE** said.

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JAL Group (JAL) ordered **General Electric** CF34 engines to power their **Embraer** E-Jets. Maintenance, repair and overhaul services for the new CF34 engines will be provided through multi-year **OnPoint** solution agreements. The engine order and **OnPoint** agreements were valued at more than \$550 million over the life of the contract.

GE Capital Aviation Services (GECAS) reported that its engine leasing unit purchased two new GENx engines from **TUI Travel** and leased them back to the airline. The engines will be used as spares to support the **TUI Travel** subsidiary airlines' **Boeing** 787 fleets.

Ryanair announced it would purchase 200 **CFM** LEAP-1B engines to power the 100 **Boeing** 737 MAX 200 aircraft that it will order. **Boeing** formally launched the 200-seat variant of the MAX 8 on September 8 with the **Ryanair** commitment. Once finalized, the firm engine order will be valued at more than \$1.3 billion at list price. **Ryanair** also has options to purchase another 100 LEAP-1B-powered 737 MAX 200 airplanes.

Airline News

Monarch, a British leisure airline, will quit its charter flight business in order to focus on the scheduled European market. It will reposition itself as a smaller rival to Europe's low-cost carriers such as **easyJet** and **Ryanair**. It will cut its workforce by a third when it closes the charter operations. The Luton-based **Monarch** is privately-owned by the **Mantegazza** family, and it plans to become a scheduled European low-cost carrier with a fleet of 30 **Boeing** 737 MAX 8s in 2018. It currently operates 37 A320 Family aircraft, two A330s and three 757s. They will all be retired during the transition. **Monarch** said it would move to scheduled-only flying from the summer of 2015; currently its scheduled flights account for 85 percent of its operations. Its charter operations include some long-haul flights to Florida, the Caribbean, as well as to Goa, India, and Gambia.

San Miguel Corp. will sell its holdings in **Philippine Airlines** back to billionaire **Lucio Tan** in a deal valued at \$1 billion. **San Miguel** bought an indirect 49 percent stake in **Philippine Airlines** and an affiliate for \$500 million in 2012. It took management control, which led to the carrier's return to Europe and the U.S. The purchase will give the 80-year-old **Mr. Tan**, full control of the airline. For **San Miguel** the deal is a step back from its diversification spree. Its core businesses include oil and food. **Mr. Tan** pledged bank shares and real estate assets for a \$750 million loan from **BDO Unibank**, **China Banking Corp.**, **Philippine National Bank** and **Asia United Bank** to fund the purchase. **PAL Holdings** reported 1.47 billion pesos (\$34 million) income in the second quarter, compared with a loss of 1.06 billion pesos a year

SpiceJet will lower costs by flying fewer and newer aircraft in a bid to return to profit. The airline returned two 14-year-old 737-800s (SN 29925 & 20036) to **CIT Aerospace** and could retire more old planes to improve fleet efficiency and cut fuel cost. **SpiceJet** cut capacity by 10 percent this year, and aims to shrink by another 4 percent by December. The older planes have higher fuel consumption and are costlier to maintain than newer ones. The airline operates 29 leased **Boeing** 737-800s, six -900s and 15 **Bombardier** Q400 turboprops. The carrier deferred delivery of two 737-800s until next year. The company will lay off up to 600 employees by December. So far its plan is working because its fuel expenses rose 4 percent in the second quarter, but revenue per available seat kilometer increased 9.4 percent as capacity was cut. **SpiceJet** increased its market share to 19.5 percent last month from 17.8 percent in March, and is now India's third largest domestic carrier by market share.

earlier. The carrier will acquire 64 planes from **Airbus**, and it recently launched services to New York and London. It also expanded a code-sharing agreement with **Etihad Airways**.

Qantas Airways reported its biggest financial loss after taking an AU\$2.6 billion (\$2.4 billion) write-down because it re-valued the cost of aircraft purchased by its international fleet during the restructuring of the company. The company established a new holding structure that split the group into four units: **Qantas International**, **Qantas Domestic**, **Qantas Freight** and **Qantas Loyalty**. After the write-down, the carrier showed an unprecedented AU\$2.8 billion net loss for the year ended June 30, compared with a restated net profit of AU\$2 million the previous year. Its loss before taxes was AU\$646 million, while it earned an AU\$186 million profit before taxes in 2013. Chief Executive Officer **Alan Joyce** said, "There is no doubt today's numbers are confronting, but they represent the year that is past. We have now come through the worst." The Australian flag carrier said it expected a return to underlying profit growth in the first half of the current financial year. The airline was buffeted by high fuel costs, the strong Australian dollar, increasing international competition and a domestic price war with rival **Virgin Australia**. Management said it was at a disadvantage due to government laws restricting its access to foreign funding. Some investors wanted the carrier to sell some major assets such as its profitable **Loyalty** frequent flyer plan, which analysts valued at up to AU\$2.5 billion. It identified other potential asset sales, including airport terminals, property and land holdings. The money from such sales would be used to repay debt. Mr. **Joyce** pointed to a "clear and significant" easing of both international and domestic capacity growth, which should stabilize the revenue environment. This year **Qantas** delayed delivery of 21 A320s, eight A380s and delayed the exercise of some of its 50 787 options. In the past year, **Qantas** and **Virgin Australia** waged a fare war to retain or boost their respective market share. **Virgin** posted a loss after tax of AU\$355.6 million in the first half of this year. **Air New Zealand**, which owns around 26 percent of **Virgin Australia**, earned a net profit to NZ\$262 million this year. The New Zealand flag carrier still plans to add capacity in 2014.

Southwest Airlines unveiled its new color scheme to mark several significant company events. The airline will fully incorporate **Air-Tran Airways** and launch international flights under its own name this year. **Southwest** is transforming from a short-haul budget carrier into a trans-continental carrier that flies to the Caribbean and Mexico. It will also be freed from the restrictions on long-haul flights from **Love Field** in Dallas caused by the **Wright Amendment**. In 1979, Congress passed a law, sponsored by Rep. **Jim Wright** that limited **Southwest** to flying from **Love Field** to states contiguous to Texas. The law was to protect the recently opened **DFW Airport** from competition. The new livery features an all-blue fuselage, while the tail and winglets have stripes of red, yellow and silver. The **Southwest** name was moved from the tail to the fuselage and has a new font. The old orange, red and gold paint scheme was supposed to represent the desert southwest. The new livery will be more national to reflect the fact that it is America's largest domestic carrier. About 60 airplanes will be painted in the new color scheme by the end of the year, and it will take five to six years to paint the rest. The airline will phase in new uniforms in 2015 to 2016.

Emirates said it was not interested in investing in **Qantas**. The Australian airline is cleaving its international arm from its domestic business. This will allow a foreign airline to take up to a 49 percent of the international carrier, an increase from the government's previous limit of 35 percent. There could

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have been some symbiosis with **Emirates**, because **Qantas** moved its European operations base from Singapore to Dubai, where it shares a new A380-only terminal with **Emirates**.

Lufthansa will launch its planned long-haul, low-cost airline in the autumn of 2015. It will operate under its **Wings** family of low-cost subsidiaries. The long-haul subsidiary is supposed to complement the mainline operation by serving tourist destinations that promise above-average growth in leisure traffic, the airline said. It may be based in Cologne, Dusseldorf or Munich. The German flag carrier is talking with **Turkish Airlines (THY)** about a collaboration, and would put the new airline under the umbrella of **Sun Express**, a 50-50 joint venture with **THY**. The new airline, provisionally named **Jump**, will start flying in November 2015. The airline will start with three A330-300s and would then grow to seven A340s. The mainline carrier operates 19 A340-300s which were delivered from 1994 to 2001. The parent company is considering leasing the A340s to Switzerland-based **PrivateAir** which would operate them with Swiss flight crews. The budget service has run into stiff opposition from its **Vereinigung Cockpit** pilots union, so **Lufthansa** said no final decision had been made on whether to launch.

IATA Posts September Jet Fuel Prices. The association updates the world's average jet fuel price each week. On September 19, the average price of fuel was \$2.687 per gallon, 4.9 percent lower than in August. It was also 9.3 percent less than in September 2013. The price of fuel is affected by location. It was only \$2.606 in the Middle East region and was as high as \$2.831 per gallon in Latin America. **IATA** forecast that the global airline industry's fuel bill will total \$122.9 billion in 2013. This was a decrease of \$7 billion over 2012.

Lufthansa will re-configure the cabin of up to 14 A340-300s that it will fly to leisure destinations. The A340s will be fitted with 261 economy, 19 premium-economy, and 18 business-class seats, increasing the capacity from 220 passengers to 298. By eliminating the first class cabin, **Lufthansa** will be able to operate the A340s on routes which it considered dropping. The airline's strategy was to strengthen its multi-hub system by developing low-cost platforms, while **Lufthansa Group's** mainline brands focus on quality and the premium sector, the airline said. **Lufthansa** is based at Frankfurt and Munich, and its wholly-owned subsidiaries **Austrian Airlines** and **Swiss International Air Lines** and the partly-owned **Brussels Airlines** fly from Vienna, Zurich and Brussels, respectively.

Urumqi Air, based in northwest China's Xinjiang Uygur Autonomous Region, launched operations from Urumqi to Yining near the Kazakhstan border. The carrier flies three **Boeing** 737-800s and it is expected to add three or four more airliners by the end of 2015. The airline plans to develop trunk routes between Urumqi and destinations like Beijing, Shanghai and Guangzhou. It also aimed to develop additional regional routes within Xinjiang. **Urumqi Air** registered capital of 3 billion yuan (\$487 million), and **Hainan Airlines** owns 70 percent of the stock. A local government-owned investment company, **Urumqi City Construction Investment** holds the rest.

Technical

The First COMAC C919 Mid Fuselage rolled off **AVIC Xi'an Aircraft Industry's** production line, and was shipped to **COMAC's** Manufacturing and Final Assembly Center at Pudong, near Shanghai. This was the second section delivered by **AVIC Jiangxi Hongdu Aviation Industry Group Co.** after the forward fuselage section that was delivered on August 24. A **COMAC** spokesman said, "The successful roll out of the mid-fuselage is an important achievement of the whole fuselage work package,

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and at this point, the C919 aircraft has taken a solid step towards structure roll off. The two sections were butt-joined on September 19, which was hailed as a milestone in the research and development of C919 program. The forward fuselage, mid-fuselage-center wing, mid-aft fuselage and aileron of the first C919 aircraft have passed the airworthiness inspection of **Civil Aviation Administration of China (CAAC)**. The Chinese airframer is working towards a first flight by the end of 2015.

Cargo Pallet

Aeronautical Engineers reported that it will provide eight 737-400SF passenger-to-freighter conversions to **Swiftair S.A.** The contract calls for four firm orders, plus four options. The first aircraft is a 1991-era, high gross-weight 737-400 (SN 24438), and it is currently being modified at **Commercial Jet** in Miami, Florida. The modification of the second aircraft (SN 24445) started in mid-September. All eight aircraft will be modified by **Commercial Jet**.

Atlas Air expanded its operations for **DHL Express'** North American routes with four additional **Boeing** 767-200 freighters which are owned by **DHL**. **Atlas Air** expects to start flying the first two aircraft in December 2014, and the other two will enter service by the end of January 2015. The additional aircraft will raise **Atlas Air's** 767 fleet to 15 aircraft, including nine 767s operated for **DHL** in North America and two flown for **DHL** in the Asia-Pacific region. **DHL Express** terminated **ABX Air's** Crew, Maintenance and Insurance (CMI) contract to operate the four **DHL**-owned 767-200 freighters. Excluding those four aircraft, **ABX Air** currently operates 21 freighter aircraft over scheduled routes for **DHL**, including 17 **Boeing** 767s and four **Boeing** 757s.

Air France-KLM's board agreed to reduce its fleet of all-cargo planes following a strategic review of the loss-making business. By the end of 2016, the group expects to have cut its cargo fleet from 14 freighters in 2013, to two **Boeing** 777Fs based in Paris, and three **Boeing** 747-400ERFs based in Amsterdam. Freight carriers have lost business to surface shipping and to the bellies of large passenger planes, hurting volumes and profits for cargo-only airlines. As of September, **Air France** operated two 747-400ERFs, and two 777Fs, while **KLM** had four 747-400ERFs. Apparently **KLM's** subsidiary, **Martinair Holland**, which operates one 747-400F and six MD-11Fs, is not part of the planned capacity cuts.

AWAS leased a third 757-200 freighter (SN 24567) to **Cargojet Airways**, a leading Canadian cargo airline that recently celebrated its tenth year of service. The aircraft was from **AWAS'** existing portfolio and had previously flown for **Icelandair**. **Cargojet** is a leading provider of time sensitive overnight air cargo services and operates a network across North America as well as global air charters.

Airbus' A300 Beluga Cargo Aircraft is celebrating 20 years of transporting **Airbus** component parts between its European manufacturing sites. The Beluga aircraft is named after the white whale because of its shape, and it

Cargo Air Lines (CAL) purchased a **Boeing** 747-400ERF to complete the upgrade of its fleet to two modern open nose and door freighters. The aircraft was built in 2007 and was equipped with **GE** engines. **CAL** signed a long-term lease for 747-412F (SN 26561) from **Evergreen** in July which entered service in September. The second will come on stream in November. The airline already operates two 747-200Fs. **CAL** says the new freighters will allow it to operate non-stop from its Liege, Belgium, base to Latin America and the Asia-Pacific and will support and expand **CAL's** specialisation in non-standard cargo.

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first flew on September 13, 1994. **Airbus** operates a fleet of five airplanes that were designed to replace the ancient **Boeing** Super Guppy transporters. They fly large aircraft assemblies, such as wings, fuselage sections, and tail stabilizers to the final assembly lines in Toulouse and Hamburg. The Beluga was based on the twin-engine A300-600R and powered by **General Electric** CF6-80C2 engines. The aircraft can carry a maximum payload of 47 metric tons over a range of 900 nautical miles. **Airbus Transport International (ATI)** operates more than 60 Beluga flights each week between 11 sites. They carry parts for all of the **Airbus** programs, including the A380, the company said. The increase in production rates for all **Airbus** programs and the start of serial production of the A350 will cause **Airbus** to substantially increase Beluga operations over the next five years. Since **Airbus** cannot build new Belugas based on the A300, the company is making the loading procedures more efficient and is flying more hours per week.

PACAVI Group announced that it was launching a passenger-to-freighter conversion program for **Airbus** A320 and A321 aircraft. **AeroTurbine**, a wholly-owned subsidiary of **AerCap**, will perform freighter conversions at its Goodyear, Arizona, facility. It currently offers MRO services and parts reclamation for **Airbus**, **Boeing** and **Douglas** aircraft and has experience in passenger to freighter conversions. **PACAVI** CEO, Dr. **Stephan Hollmann**, said, "There are currently about 600 freighters of the size category of the A320 and A321 operating globally, and this market is set to grow rapidly in the **BRIC** countries and around the world. We look forward to the opportunity to provide **Airbus** operators and others technologically advanced freighters at highly competitive price points." Commercial deliveries are said to begin in 2017 or earlier. Dr. **Hollmann** commented, "Airbus canceled [its A320 and A321 freighter conversion] program to focus on its main business, manufacturing new aircraft, and demand has only increased since then. Passenger to freighter conversions is very much a niche business, and our key people have excellent track records in previous successful **Airbus** passenger to freighter conversion programs."

Military Market

Airbus Defence and Space's A400M transport aircraft performed an air-to-air refuelling test campaign using a **Boeing** F/A-18 Hornet. The A400M performed 33 dry contacts over five flights. The transport also transferred 18.6 tons of fuel to a Hornet during 35 wet contacts, **Airbus** said. The A400M has a basic fuel capacity of 50.8 tons, and has refuelling provisions as standard equipment. The fuel capacity can be increased through the installation of cargo hold fuel tanks.

The Royal Air Force will receive its first two of 22 **Airbus** A400M Atlas tactical transports (SN 015 & 016) in late September. **Airbus** said four Atlas will be handed over this year, with the last to

The Third Peace Eagle Airborne Early Warning and Control (AEW&C) aircraft was delivered to the **Turkish Armed Forces**, in September. The AEW&C aircraft will be operated out of the **Konya Air Base**. **Boeing** is scheduled to deliver the final aircraft in 2015. **Boeing** provides ground support, mission crew training, mission support and system maintenance. The AEW&C provides advanced airborne surveillance and battle management capabilities and can simultaneously track airborne and maritime targets, **Boeing** said. Turkey is the third operator of the AEW&C platform. The other two are the air forces of Australia and South Korea, which operate six and four of the type, respectively.

Boeing Delivered the Fifth P-8I Maritime Patrol Aircraft to India on September 9 as part of its contract for eight aircraft to meet the **Indian Navy's** maritime patrol requirements. The aircraft (SN 40614) will be operated from **Naval Air Station Rajali**, and joined the four previously delivered P-8Is.

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be built in mid-2018. The U.K.'s Atlas fleet will be based at **RAF Brize Norton** in Oxfordshire.

Boeing Has 10 White Tail C-17s for Sale. It is offering several of them to Algeria, which is also looking at the **Airbus A400M** and the upgraded **Ilyushin Aviation Complex Il-76MD 90A**. **Boeing** demonstrated the C-17 for the country's air force in 2013. Algeria is considering a possible order of between four and six aircraft and a decision could be made this year. A top **Boeing** executive commented that Algeria's "disciplined acquisition process" may be too slow, because other customers may buy up the last unsold "white tails" available. **Boeing** will shut down the production line in June 2015. Several existing customers are lining up to make deals. The company expects to close some sales within the next six months.

Boeing C-40A Clipper Marketing Program. Company officials have re-started a global marketing campaign to sell the C-40A, the military version of the 737 that can haul passengers and cargo. The Clipper is offered as a substitute to the **Boeing C-17** which will no longer be available. The first **US Navy C-40A** entered service in 2001 and 13 have been delivered to date. The **Navy** has two more C-40As on order. Three airlines have ordered five 737-700Cs, the commercial combi version of the Clipper, and have taken delivery of three of them so far. **Paul Oliver**, VP of **Boeing International for the Middle East and Africa**, said **Boeing** is marketing the Clipper as an alternative to the **Lockheed Martin C-130J Hercules** in Africa and other developing nations. "This is kind of our C-40A coming out party," he quipped. Mr. **Oliver** said the C-40A represented **Boeing's** post-C-17 strategy for the mobility market. The company debuted the new marketing campaign in South Africa which is also considering the **Airbus A400M Atlas** and the C-130J. Mr. **Oliver** admits the C-40A is not a tactical airlifter, because it cannot land on unimproved runways nor perform aerial drops of cargo or paratroopers. The plane features a forward cargo door, and can carry 121 passengers or eight pallets. The cabin can also be configured to carry 70 passengers and three pallets, with a maximum range of 3,200 nautical miles (5,930km). The Clipper will sell for \$80-\$85 million, but customers must move quickly. **Boeing** will begin 737 MAX family production in 2017 and phase out the 737NG family completely by mid-2019. It has no plans to build a 737 MAX version of the C-40A/737-700C.

The Australian Government approved the AU\$4 billion (\$3.7 billion) acquisition of eight P-8A Poseidon maritime patrol aircraft, plus options for four more, in February. This allowed **Boeing** to place lead time orders for the first four aircraft. They will be purchased from the **U.S. Government** under the **Foreign Military Sales** program. The first four will be delivered during 2017. The Poseidons will replace the **Royal Australian Air Force's (RAAF)** fleet of 40-year-old **Lockheed AP-3C Orions**. The **RAAF** will decide on

Israel Aerospace Industries (IAI) is offering converted **Boeing 767** aerial refueling tankers to fill the **Polish Air Force** requirement. Currently the country uses **NATO Strategic Airlift Capability Boeing C-17s** to meet its aerial refuelling needs. **IAI** is proposing a 767 tanker with a probe and drogue system that is also compatible with the **Air Force's** inventory of 67 Russian-built MiG-29s and **Sukhoi Su-22** fighters. Poland also operates 48 **Lockheed Martin F-16C/Ds** fighters that need a boom-equipped tanker. The Israeli company successfully performed test flights with a converted 767-300ER fitted with the new fly-by-wire boom. **IAI** will build the tankers with the help of Polish defence contractor **PGZ**. **IAI** claims its 767 conversion offers lower life-cycle costs than a purpose-built tanker. The manufacturer will replace or upgrade key parts including the aero-structure, wiring and other systems. It can offer new engines, avionics, a state-of-the-art glass cockpit, and self-protection systems that are tailored to the customer's specific requirements, **IAI** said.

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exercising the four options once a government white paper is released in 2015. All eight aircraft are expected to be delivered by 2018 and fully operational by 2021.

Poland Issued a Request for Proposals For Airtankers. The country wants up to four aerial refuelling tankers to meet NATO alliance requirements. It expects to make a decision expected late this year. The Central European nation is a member of the **European Defence Agency (EDA)**, which requires a total of eight airtankers, but **Poland** wants to ensure its air force is not constrained by decisions made by the **EDA**. **Boeing** has submitted a bid to sell for four KC-46As, based on the 767. **James Eisenhower**, a director of military sales said, "International delivery slots for the KC-46A are available from 2018, and when we deliver those aircraft, they will have been through USAF flight-test certification." The **Boeing** sales pitch highlighted the compatibility of the **Boeing**-developed boom system, which is suitable for the 64 different receivers used on aircraft operated by NATO members, plus the critical mass provided by the **USAF's** planned fleet of 179 tankers. Four prototype 767-2C aircraft are being developed for the KC-46A program and the first will fly by the end of this year. The first fully equipped KC-46A will fly in the first quarter of 2015. The first delivery of a production aircraft is planned for early 2016. **Airbus Defence & Space** is offering the A330 MRTT (Multi Roll Tanker Transport), which is already in service and **Israel Aerospace Industries** is proposing a converted passenger 767.

AIRCRAFT DELIVERIES & SALES



Airbus A319. Only one A319 was delivered in August, an **Airbus Tianjin Final Assembly Line (FAL)**-built -115W (SN 6116) to **China Eastern Airlines**.

Airbus A320. **Airbus** delivered 17 A320s during its slow month of August, when many people in Europe take vacation. **China Eastern Airlines** accepted two -232/Ws (SN 6020 & 6137) and one -214/W (SN 6213). The airline leased one **Tianjin FAL**-built -214/W (SN 6127) from **China Aircraft Leasing Co. (CALC)**. **AirAsia** received two -216/Ws (SN 6204 & 6215) and **ICBC Financial Leasing** leased two -214/Ws (SN 6224 & 6243). **Spring Airlines** acquired **Tianjin FAL**-built -214/W (SN 6073) and leased -214/W (SN 6216) from **SMBC Aviation Capital**. **Hong Kong Express Airways** leased -232/W (SN 6142) from **BOC Aviation**. Newly founded **Tigerair Taiwan** leased -232/W (SN 6187) from **Tigerair**. In Europe, **Airbus** delivered the 71st -214/W (SN 6225) to **Lufthansa**, and **Iberia** leased -232 (SN 6244) to **Iberia Express**. Elsewhere, **South African Airways** received -232/W (SN 6200), **Air Arabia** took delivery of -214/W (SN 6234), and **Indigo** accepted -232/W (SN 6247).

AWAS Leased Another Two New A320 passenger (SN 6218 & 6220) to **Spring Airlines**, China. These aircraft come from **AWAS'** existing pipeline order with the manufacturer and will assist with **Spring's** growth domestically and to new regional routes such as Singapore. **AWAS** also leased the fourth planned new A320-214/W (SN 6242) to **VietjetAir**. **VietjetAir** is an expanding low cost carrier operating a modern, all-A320 fleet from Vietnam's three major economic and tourist hubs in Ho Chi Minh City, Da Nang and Hanoi, and is the first private airline in Vietnam to be licensed to operate domestic and international flights.

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BOC Aviation acquired three of the 21 A320neos that **Qantas/Jetstar** cancelled in June and leased them to **Beijing Capital Airlines**. The three -232/Ws (SN 6198, 6212 & 6229) were parked at Toulouse for several months. The first was ferried to Beijing and delivered to **Beijing Capital** on September 24. The other two will be handed over in the fourth quarter of 2014. **BOC** will lease another three A320s to **Beijing Capital** by the end of the second quarter of 2015.

BOC Aviation delivered the first of 20 A320 aircraft to the **TATA-SIA Airlines** joint-effort named **Vistara**. The order includes seven A320neo variants and the aircraft will be delivered over the next four years. **Vistara** leased -232/W (SN 6223) in September and will receive -232/W (SN 6278) shortly. Another three are due this year. This was **BOC's** largest leasing agreement to date and underscored the company's confidence in both **Vistara** and the Indian market. The airline will launch operations in October to five cities in India.

GE Capital Aviation Services (GECAS) leased one used A320-214/W (SN 4907) to its new airline customer **VietJetAir**. **VietJetAir** is a private, low-cost carrier, and operates a fleet of 16 aircraft to destinations in Vietnam as well as Singapore, South Korea and Thailand.

Airbus A321. **Airbus** delivered 12 A321s in August, including six -231s (SN 6194, 6214, 6230, 6236, 6249 & 6255) to **US Airways**. Its merger partner, **American Airlines** leased the second of four -231/Ws (SN 6222) from **Avolon**, and -231/W (SN 6238) from **Aviation Capital Group**. **China Southern Airlines** received two -231s (SN 6233 & 6241). **TACA International** leased -231/W (SN 6209) to **Avianca**. **JetBlue Airways** accepted its ninth -231/W (SN 6245).

GECAS purchased two new A321-231/Ws (SN 6253 & 6291) from **Philippine Airlines** and leased them back. The two aircraft were delivered in September and they will be used to expand the airline's fleet. The flag carrier of the Philippines operates a fleet of some 50 aircraft to more than 40 destinations.

Airbus A330. **Airbus** delivered one -243 (SN 1555) to **Airbus Military** for conversion into a tanker for the **Royal Air Force**. Five -300s were delivered in August. **China Eastern Airlines** took delivery of -343E (SN 1551), and **Air Asia X** acquired -343E (SN 1549). **Airbus** delivered the 20th -343 (SN

At a Ceremony in Hamburg, Qatar Airways took delivery of its newest flagship, A380-861 (SN 137). **Qatar Airways Group** Chief Executive **Akbar Al Baker** figuratively took the keys of the first of 10 A380s on order from **Airbus** President and CEO **Fabrice Brégier**. **Airbus** said, "The A380 has become a firm favorite with passengers and airlines due to the smoothness of the flight, quietness of the cabin and the spaciousness of the overall aircraft layout. These unique characteristics allow **Qatar Airways** to achieve their ambition of providing excellent services to their passengers. The A380's built-in cabin flexibility has also given **Qatar Airways** the opportunity to make innovative use of the aircraft's space, offering the airline's passengers an exceptional in-flight experience." The A380 will accommodate a total of 517 people – 461 in Economy, 48 in Business and eight in First Class, which features the widest first-class seats in the industry. The aircraft has two full-length passenger decks - First and Business Class cabins will both be located on the aircraft's upper deck, along with a special lounge area for premium passengers. **Qatar** is the 12th carrier to fly the A380 and will fly it to **London Heathrow** and **Paris Charles de Gaulle** from **Hamad International** in Doha. The delivery was delayed by a three-month standoff with **Airbus** over the quality of its luxurious cabin fittings. The other two previously rejected aircraft (SN 143 & 145) will be delivered shortly.

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1553) to **Philippine Airlines**, and -343E (SN 1553) to **Garuda Indonesia Airways**. It was sold to **Avolon** and leased back. **Avolon** will do three more sale-leaseback transactions with **Garuda**. **Intrepid Aviation Group** leased -343E (SN 1552) to **Cebu Pacific Air**.

Airbus A380. **Emirates** added its 51st -861 (SN 158) to its fleet in August. It took delivery of -861 (SN 157) in September and sold it to **Amedeo**. The plane was leased back for a 12-year term. **Amedeo** (formerly **Doric**) financed the aircraft with a combination of senior and junior loans provided by a bank syndicate, including **Commercial Bank International**, **Qatar National Bank (QNB)**, **Sumitomo Mitsui Trust Bank** and **Westpac Banking Corporation (Westpac)**. **Westpac** acted as the Senior Agent and the Security Trustee and **QNB** acted as the Junior Agent.

Intrepid Aviation acquired one A330-302 (SN 1367), equipped with **GE CF6-80E1A4** engines, from **GECAS**. The aircraft was manufactured in late 2012 and has since been on lease to **China Airlines**. This is the second A330-300 aircraft **Intrepid** has acquired on lease to the Taiwan-based flag airline. **Intrepid** leased the fourth of five -343Es (SN 1554) to **Skymark Airlines**, Japan, in September. The airline will lease another -343E (SN 1574) from **Intrepid** by the end of the year.

Boeing

Boeing 737 NG. **Boeing** delivered 37 737s in August. **Southwest Airlines** took delivery of four more -8H4/Ws (SN 36907, 36935, 42525 & 42528) for a fleet total of 69. **Lion Air** took delivery of three -8GP/Ws (SN 39820, 39821 & 39822). The first was sold to **Transportation Partners Pte.**, which leased it along with -8GP/W (SN 39819) to **Air 9**, China. **Lion Air** sold the second of a three -8GP/Ws (SN 39821) to **AWAS** for lease to **Batik Air**, and the third -8GP/W (SN 39822) was leased directly to its full-service subsidiary, **Batik Air**. Several airlines took two 737s each in August, including **Delta Air Lines** which received two -932ER/Ws (SN 31936 & 31937), **Malaysia Airlines** accepted two -8H6/Ws (SN 40160 & 40161), and **United Airlines** acquired two -924ER/Ws (SN 44562 & 44563). **Boeing** delivered one -79P/W (SN 39737), and one -89P/W (SN 41478) to **China Eastern Airlines**, as well as five -800s to other Chinese airlines. **Air China** accepted one -89L/Ws (SN 40042), **Hainan Airlines** bought -84P/W (SN 39214), and **Shandong Airlines** took delivery of one -85N/W (SN 41617). **Shanghai Airlines** received -86D/W (SN 39311), and **Shenzhen Airlines** purchased one -87L/W (SN 37624). **SMBC Aviation Capital** took delivery of two -8LJ/Ws (SN 39947 & 39948) and flew them to storage because its leases to **Dobrolet** were cancelled. **BOC Aviation** leased -8GJ/W (SN 41399) to **S7 Airlines**, Russia. **GECAS** leased another new -86N/W (SN 41252) to **China Southern Airlines**, and **ILFC/AerCap** leased i 8U3/W (SN 41798) to **Garuda Indonesia Airways**. **Aerolineas Argentinas** leased -8HX/W (SN 39893) from **Aviation Capital Group**. **Alaska Airlines** accepted its 22nd -990ER/W (SN 41702), and **American Airlines** took delivery of its 239th -823/W (SN 31200). It was the sixth of eight 737s to be sold to **SMBC Aviation Capital** and leased back. **Aeromexico** received -852/W (SN 36707) and sold it to **AWAS** for lease back. **COPA Airlines** accepted its 35th -8V3/W (SN 44155). **Boeing** delivered the 71st of 74 -838/Ws (SN 44574) to **Qantas**, and the 28th -881/W (SN 33908) to **All Nippon Airways**. **Jet Airways** bought -85R/W (SN 42800), and sold it to **Avolon Capital Partners**. The airplane was leased back to **Jet**. It was the second aircraft of a multi plane deal. **SilkAir** received -8SA/W (SN 44221), and **Virgin Australia Airlines** acquired -8FE/W (SN 40702). The **United States Navy** took delivery of its 29th -8FV (P-8A, SN 42256), and a private customer, **Hansel Prime Ltd.**, received -7ZF/W-BBJ (SN 60406).

SMBC Aviation Capital delivered one new -800 to **Batik Air** in September.

Boeing 747. Boeing handed over the 15th -830I (SN 37840) to **Lufthansa German Airlines. Silk Way Airlines**, Azerbaijan, celebrated the delivery of the airline's two 747-830F freighters (SN 44444 & 44937). The airplanes were leased from **GECAS. Silk Way Airlines** is considered as one of the leading cargo carriers in the region, providing full-fledged services to Europe, the United Kingdom and Middle East, as well as the Far East including South Korea, China and Hong Kong, **Boeing** said. In addition, the carrier also serves international destinations through a network of alliances, operating 747-400F freighters and 767-300F freighters. To date, **Boeing** has delivered 49 747-8 Freighters and 23 passenger 747-8Is.

Boeing 767. **AWAS** placed three -300ERs to a current customer, **Boliviana**, as part of the airline's plan to commence long-haul service from Cochabamba to Miami, and Madrid. Two of the aircraft will be placed into immediate service, while the third will be parted out to provide spare engines and parts to support to the fleet. The new routes will allow a significant improvement of services as well as travel options for the Bolivian passenger.

Boeing 777. Boeing delivered eight 777s in August, including one 777-FFT freighter (SN 44682) to **Air China Cargo. Cathay Pacific Airways** received two more -367ERs (SN 41758 & 41762) for 39 of the 49 it ordered. **China Southern Airlines** accepted its third and fourth of 10 -31BERs (SN 43221 & 43222). **Emirates** purchased its 67th of 120 -31HERs (SN 41366), and **Qatar Airways** acquired its 26th -3DZER (SN 43216). **Thai Airways International** took delivery its third of six -3D7ERs (SN 42112).

Intrepid Aviation acquired one 777-328ER (equipped with GE90-115B engines) that was on long-term lease to **Air France**. The aircraft was purchased with cash earlier this year and **DVB Bank** provided the long-term financing.

Boeing 787. Boeing delivered 13 787-8s in August, including three 787-8s (SN 34496, 40750 & 42249) to **ANA—All Nippon Airways**. The airline now operates 31 787-8s and one 787-9. **British Airways** received its eighth -8 (SN 38615), and **LAN Airlines** accepted -8 (SN 38477). **Qatar Airways** acquired its 15th -8 (SN 38333), and **Kenya Airways** took delivery its fourth of nine -8s (SN 36041). **Qantas** leased two -8s (SN 36232 & 36233) to **Jetstar Airways**. **Ethiopian Airlines** added its ninth of ten Dreamliners (SN 34751) to

China Southern Airlines took delivery of its 600th airplane in September, a new **Boeing 777-300ER**. The Guangzhou-based carrier is the now largest in Asia and the fifth largest worldwide, after **Delta Airlines, United Airlines, FedEx** and **American Airlines**. The 777-300ER will fly the Guangzhou-New York route, and is the fifth of ten 777-300ERs ordered by **China Southern** to be delivered by 2016.

China Eastern Airlines celebrated the delivery of its first of 20 777-39PERs (SN 43629) on order. **China Eastern** will operate the 777s on routes between China and North America, which will become a major market for **China Eastern** over the next three years. The carrier plans to open new routes to North America and also boost frequencies on existing routes from Shanghai to Los Angeles, New York, San Francisco, Vancouver and Toronto. Starting in November, the carrier will deploy its first 777 on services to Los Angeles and New York. The airline configured its new 777-300ER in three distinct cabins. Passengers will find six first class suits, 52 business class seats in a 1-2-1 configuration and 258 economy seats in a 3-4-3 configuration.

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its fleet on August 3. **Boeing Business Jets** took delivery of VIP -8 (SN 40059) and sold it to the **Saudi Arabian Ministry of Finance & Economy**.

Royal Jordanian celebrated the delivery of its first 787-8 Dreamliner (SN 37983) in August. The airplane will play a central role in the Amman-based flag carrier's fleet modernization. **Royal Jordanian** leased this airplane from **AerCap**. **AerCap** will lease two more -8s to **Royal Jordanian** later this year. With this delivery, **Royal Jordanian** becomes only the second airline in the Middle East to operate the 787. The airline will configure its Dreamliner to carry 24 passengers in business class and 246 in economy class.

United Airlines became the first North American carrier to take delivery of a stretched Dreamliner when it received 787-9 (SN 36401) in September. It was powered by GENx-1B engines and can accommodate 40 more passengers than the -8 model. The aircraft is the first of 26 787-9s the airline has on order. It will enter domestic service from **United's** Houston hub in late September. It will eventually be flown on what will become the longest 787 route, a nonstop service between Los Angeles and Melbourne, Australia. **United** now operates 11 787 Dreamliners and has an additional 54 on order, including the 787-10.

Boeing Delivered the First 787-8 to Xiamen Airlines in August. **Xiamen Airlines** became the third Chinese airline to operate the Dreamliner. The airline will use the 787-8 (SN 41538) on long-haul routes from its Fujian province base to Europe, North America and Australia. **Xiamen Airlines** was formed in 1984 as China's first joint venture between the **Civil Aviation Administration of China (CAAC)** and a municipal government. It started services in 1985 with two 737-200s and has been a **Boeing** customer since then. It is now China's sixth largest airline and serves 218 domestic routes and 26 international and regional routes. By the end of 2015, the carrier will operate 150 airplanes, including six 787s.

Regional Jet

Bombardier delivered two CRJ700 NextGen aircraft (SN 10338 & 10339) to the Chinese **People's Liberation Army Air Force** in August. **American Airlines Group's** fifth and sixth of 30 enhanced CRJ900 NextGen aircraft (SN 15327 & 15328) was delivered in August and not in July as **AVMARK** previously stated. The aircraft will be operated by the group's wholly-owned subsidiary **PSA Airlines** under the **American Eagle** brand. **Delta Air Lines** accepted delivery of four CRJ900 NextGens (SN 15324, 15325, 15326 & 15329). They were leased to **Endeavor Air**.

Embraer. **Skywest Airlines** took delivery of two more EMBRAER 170-200 LR (E175) Enhanced (SN 17000416 & 17000420) in August. **Republic Airways** accepted two more E175s (SN 17000417 & 17000418) for operation on behalf of **American Eagle**. **BA Cityflyer** received one EMBRAER 190-100 SR (E190) (SN 19000674) in September.

Turboprop Aircraft

ATR. **Jet Time** leased its fifth ATR 72-600 (SN 1165) from **Nordic Aviation Capital** in August. The airplane will operate regional services for **SAS**. **ATR** delivered one -600 (SN 1168) from **Wings Abadi Airlines**, and one -600 (SN 1170) to **MAS Wings**. **Aviation PLC** took delivery of a new ATR 72-600 (SN 1169) and leased it to **Virgin Australia Regional Airlines**. This aircraft is the 11th ATR 72-600

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variant that **Aviation** has received. It has now taken delivery of 17 ATR 72 aircraft. **Avianca** accepted another -600 (SN 1174), and leased it to **Aviateca**, Guatemala, for operation by **Avianca Inter Regional**. **Islena Airlines**, Honduras, received one -600 (SN 1172) and is operating it for **Avianca**. **Azul Linhas Aereas** took delivery of one -600 (SN 1166) and sold it to **DAE Capital** for leaseback. **Azul** operates 35 ATR 72-600s and has another 18 on backlog. **DAE Capital** announced an order for 20 ATR aircraft at the **Singapore Air Show** in February, and took 20 options. Its first aircraft is scheduled to deliver next year. **ATR** delivered ATR 42-600 (SN 1014) to **FijiLink** in September.

TransNusa Aviation Mandiri, a fast-growing Indonesian airline, took delivery of its first new generation ATR 42-600 (SN 1015) in September. The carrier has options for three more ATR 42-600s. The airline won a five-year contract to support the Indonesian oil industry with the airplane, which will enter service in November.

Airstream International Group arranged the dry lease of one ATR 72-500 (PK-KSC, SN 638) to **Kalstar Aviation**, Indonesia, for its U.S. based owner. The ATR was previously owned and operated by **Air Dolomiti** before being purchased by the lessor as part of a three aircraft package. **Airstream International** arranged the purchase and onward lease of ATR 42-500 (SN 497) to **Hevilift Group**, in collaboration with a large U.S. lessor. The plane was previously owned and operated by **Danish Air Transport**, Denmark, and it will now be used on dedicated mining contracts in Papua New Guinea. This is the second ATR aircraft transaction that **Airstream** has completed involving both **DAT** and **Hevilift**. **Airstream** has successfully arranged the sale or lease of thirteen ATR aircraft over the last two years, and expects to close on several more in the second half of this year.

Bombardier. **Nok Air**, Bangkok, Thailand, took delivery of its first 8Q-402 NextGen (SN 4455) in August. The aircraft was the first Q400 NextGen to be delivered with the new extra capacity 86-seat configuration. It was part of **Nok Air's** purchase agreement for up to eight Q400 NGs that was announced in November, 2013. Since then the airline exercised some options and purchase rights, and now **Nok Air** has firm orders for six Q400 NGs and retains two purchase rights from the original contract. **Nok Air** sold the Q400 to **GECAS** and leased it back. The airline will also sell the aircraft delivered in September to **GECAS**.

Palma Holding received two 8Q-402 NextGens (SN 4475 & 4476) and leased them to **Ethiopian Airlines**. **Nordic Aviation Capital** leased one Dash 8-400 (SN 4129) to **Air Berlin** in August.

Antiques and Other Junque

Boeing Expanded its Aftermarket Parts Portfolio through its agreement with **GA Telesis**. **Chris Rauch**, senior VP of Global Sales at **GA Telesis** said, "By combining **GA Telesis'** expertise in the used serviceable market with the customer-centric **Boeing PART Page**, we have created a

Viking delivered new Series 400 Twin Otter (SN 881) to **Aurora Airlines** in Vladivostok, Russia, in August. The **Vietnamese Navy** received -400 (SN 885) in August and -400 (SN 872) in September. The airplanes were modified into "Guardian 400" aircraft by **IKHANA Aircraft Service**, Murietta, California. Two **UAE Air Force's** -400s (SN 875 & 882) were deregistered in the U.S. in August and readied for the ferry flight to the UAE. The **UAE AF's** -400 (SN 896) was modified by **IKHANA** and flown back to Victoria, Canada. **Viking** delivered -400 (SN 901) to **Hilcorp Equipment**, Alaska, and one -400 (SN 902) to the **Peruvian Air Force**.

September 2014

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first-of-its-kind e-commerce platform in the commercial aftermarket. The **PART Page Marketplace** will be an efficient solution for end-users that also simplifies their sourcing strategies. The **Boeing PART (Part Analysis and Requirements Tracking) Page** is available to customers, and is one of the most frequented e-commerce sites in the aerospace industry. More than 43,000 users log over 40,000 interactions on the **Boeing PART Page** every day, **Boeing** said. The page lists new surplus, repairable and overhauled parts. **Tim Copes**, VP of Material Services, **Boeing Commercial Aviation Services** said, "At **Boeing**, we want to be the one place our customers can come for almost any kind of airplane part they need – whether new or serviceable. **Boeing** is actively working to expand its offering of serviceable parts to include parts for non-**Boeing** airplanes. Serviceable parts are a fast-growing segment of the aviation parts market, outpacing new part sales. The serviceable parts market is valued at more than \$3 billion annually. **GA Telesis** is headquartered in Fort Lauderdale, Florida, and has distribution centers in the United States, the United Kingdom and mainland China. It offers aircraft and engine leasing, asset management, and engine and component overhaul and repair. **Boeing** now sells new surplus parts, overhauled parts which have been repaired in accordance with the **Component Maintenance Manual** and repairable parts which have been repaired to serviceable condition.

US Airways retired its last **Boeing** 737-400 on August 19, bringing a quarter century of airline service to an end. The last flight was performed by -400 N435US which flew from Charlotte, N.C. to Dallas, and Philadelphia before returning to Charlotte. **US Airways** and its merger partner, **American**, have taken delivery of 53 new mainline aircraft this year, including the **Airbus** A321s that replaced the 737-400s. The A321 carries 43 more seats and is much more fuel efficient than the 737-400. **US Airways** operated up to 54 737-400s from September 1988 to August 2014. **Alaska Airlines** and the new **People Express** still fly the 737-400 on scheduled services in North America.

At the **Aircraft Fleet Recycling Association (AFRA)** conference speakers reported that 41 percent of the current global in-service fleet of aircraft will be retired over the next two decades. The airlines will replace them with fuel-efficient re-engined narrowbodies and new generation wide-bodies. Airlines and lessors are currently scrapping 400 airplanes per year. That number should rise to 1,000 aircraft per year by the end of the decade. **AFRA** provides dismantling services as well as salvaging and recycling of aircraft parts and materials. Since its establishment in 2006, the group's members have contributed to 2,000 aircraft being returned to the market. **AFRA** has seen significant market penetration over the last eight years, but it is looking to establish **AFRA** accreditation as the industry standard for aircraft recycling, the group said.

Werner Aero Services acquired **Airbus** A321 (SN 538) for teardown. The A321 will be disassembled by **AeroTurbine**, and its components will be used to support **Werner's** asset management business.

TrueAero acquired three CFM56-5C4/P engines. The first will be parted out to support **TrueAero's** parts re-distribution business, while two will remain on lease to the operator.

Virgin Atlantic will retire its last two inefficient A340-300s and two of its 14 A340-600s by the end of February 2015. They are being replaced by the first of **Virgin's** 16 new 787-9s. The last five 747-400s based at **London Heathrow Airport** will be withdrawn between September 2015 and July 2016, and **Virgin** is looking to replace the seven 747-400s that are used by its **London Gatwick**-based long-haul leisure unit.

Accidents and Safety

From Aviation Safety Foundation

Ukraine Air Alliance Antonov An-12BK (UR-DWF, SN 8345802) crashed in a mountainous area three minutes after takeoff from **Tamanrasset Airport**, Algeria, on August 30. All seven crew members were killed. The airplane was in route from Glasgow to Malabo, Equatorial Guinea, and carried oil field equipment.

Safari Expresss Cargo Fokker F.27-500 cargo plane (5Y-SXP, SN 10681) crashed in the **Serengeti National Park** in Tanzania, on August 31. The airplane departed Mwanza, Tanzania, and was headed to Nairobi, Kenya, when it disappeared. All three crew were dead when the burnt wreckage was found the following morning.

Jubba Airways Fokker F.50 passenger aircraft (5Y-BYE, SN 20204) ran off the runway after landing at **Mogadishu International Airport**, Somalia, on September 6. The plane went down a small embankment and collided with a concrete perimeter fence. The right hand main landing gear collapsed, the nose was crushed and the forward fuselage sustained structural damage. None of the 24 people on board were killed. The 23-year old aircraft will probably be written off.

Hevilift deHavilland Canada DHC-6-300 Twin Otter (P2-KSF, SN 528) hit the top of Mount Lawes, Papua New Guinea, in bad weather, on September 20. Both pilots and two of the seven passengers were killed. The aircraft was on a charter flight from Woi tape to Port Moresby, Papua New Guinea.

Indian Air Force Antonov An-32 transport (registration unknown) was damaged in a landing accident at **Chandigarh Airport**, India, on September 20. Several people on board suffered minor burn injuries after a fire broke out. The fire was quickly suppressed.

Egyptian Air Force Lockheed C-130 Hercules (registration unknown) crashed during a training flight near Kom Ashwin, Fayoum, Egypt. Reportedly one of the seven crew members survived the accident.

AVMARK CAPABILITIES

Since its establishment in 1962, AVMARK has been providing consulting management services to all sectors of the aviation community. From offices in Washington DC and Singapore, together with associates based in United States (North America), Ecuador (South America), Spain (Europe), Congo (Africa), New Delhi (India and Asian Market), we serve a worldwide clientele. Our staff is comprised of professionals with extensive, successful careers in technical, commercial and managerial areas of aviation enterprises; combining real world operational experience with sophisticated analytical tools to provide our clients with the most effective solutions to their problems.

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Aircraft appraisal, inspection and technical monitoring; analysis of market conditions and forecast of values; assistance with aircraft acquisitions and placement; valuation of facilities, equipment and other assets.

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PUBLICATIONS

We publish the *AVMARK Newsletter* monthly; containing market information, various analyses and commentary; also reports all orders, purchase sales and leases of new and used transport aircraft. We also publish several other statistical compilations from our extensive database on aircraft, carriers, traffic, costs and operations.

AVMARK's Transport Aircraft Values (TAV); reports current fair market values by year of build and projects the future value of all transport category aircraft.

AVMARK's Historic Jet and Turboprop Values; summary of the then current fair market values as published in the AVMARK Newsletter for all jets and turboprops in service.

AVMARK's Small Transport Aircraft Catalogue (STA); designed as an easy to use reference guide to compare the operating and cost parameters of 35 regional jet and turboprop aircraft.

Sample of Avmark Publications

SMALL TRANSPORT AIRCRAFT CATALOG

STA is designed as an easy to use reference guide to compare the operating and cost parameters of 35 regional jet and turboprop aircraft. Information includes development history, current production status, configuration and operating performance and costs as reported to the DOT. Pictures of each aircraft are also included.

SMALL TRANSPORT AIRCRAFT
A Catalog of New and Used Commuter / Regional Aircraft
2004
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MARKET OVERVIEW

Most dynamic and fastest growing segment in the world, using old generation propeller aircraft to carry 90 million passengers using state of the art technology.

Airline Association (RAA):

Aviation:

DOT:

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ATR 42-300

In Service: 1985 Orders: Out of Production Deliveries: 284

Specifications	
Accommodations	
Passengers*	46
Pilot	2
Cabin Attendants	1
Powerplant	
2 Pratt & Whitney PWC120 Turboprops	1,800 SHP / 1,342 kW
Hamilton Propellers	4 blades
External Dimensions	
Length	74 ft 8 in
Wingspan	60 ft 7 in
Height	24 ft 11 in
Weight	
Empty	48,815 lb
Max Ramp	77,000 lb
Max Takeoff	77,000 lb
Max Landing	77,000 lb
Max Ramp	77,000 lb
Max Takeoff	77,000 lb
Max Landing	77,000 lb

Standard Equipment: Right engine Propeller Brakes, Airsearch Air Conditioning, Stall Warning.

Optional Equipment: KLN 900 GPS/W, FMS, Area Navigation (RNAV), Microwave Landing System, VLF Omegat Long Range Navigation System, Dual Honeywell AZ-800 Digital Air Data Computers, PA System, HF Radio, Collins Avionics in place of King Avionics, CAT II.

Avionics: EDZ 820 Electronic Flight Instrument System (EFIS) - 4 CRT's for dual Attitude and Heading Reference Systems (AHRS), Dual Autopilots, Dual GPS, Dual King Gold Crown VHF Nav, Radios, DME, Radio Altimeter, Honeywell P-800 Weather Radar.

Price List

Years Built	Base (\$ mil)
85-99	2.0

ATR 42-300

Direct Operating Costs (\$ per block hour)

Utilization (Block Hours / Year)	Cost (\$ per block hour)
100	300

Average Stage Length (nm)

Length (nm)	Cost (\$ per block hour)
100	300

Flying Operations

Item	Cost (\$ per block hour)
Flight Crew, Salaries / Expenses	\$198
Fuel, Oil, Taxes	\$173
Other	\$3

Aircraft Costs

Item	Cost (\$ per block hour)
Insurance	\$3
Maintenance	\$478
Depreciation	\$62
Rentals	\$318

Total Direct Operating Costs

Cost (\$ per block hour)	Cost (\$ per block hour)
12.33	6.65
Cost per Available Seat Mile - \$	\$5.67
Cost per Airplane Mile	\$4.44
Cost per Seat Block Hour	\$16.67

Note: Data from DOT Airline Reports.

ATR 42-300

PAYLOAD VS. RANGE

Range (nm)

Distance (nm)

ATR 42

THE AVIONS DE TRANSPORT REGIONAL (ATR) first flew in August 1984, and entered service in December 1985 with the French regional Air. The aircraft is a joint venture between Aerospatiale of France and Aeritalia of Italy. The ATR 42's name originally designated it as a 42 passenger aircraft, but subsequent reduction of the forward baggage compartment now allows for a seating configuration of up to 50 passengers.

The baseline aircraft is the ATR 42-300/320 powered respectively by PW120/121 engines. The latest version is the ATR 42-500 powered by PW127s engines and Hamilton six-bladed propellers. Thus increasing the payload to 12,015 lb and the cruise speed to 300 kts.

The standard front cargo door allows the aircraft to be quickly converted from a passenger layout to freighter. Unique among turboprops, is the integration of a Propeller Brake on the right engine, which allows running of the engine in "Hotel Mode" to provide aircraft electrical power and air conditioning without the inconvenience and safety hazards of a rotating propeller.

The ATR 42 and ATR 72 have a very high degree of commonality, allowing for cross-crew qualification, and a common spare parts holding.

TYPICAL CABIN CONFIGURATION

48-seats in a four-abreast layout with a center aisle. Access to the cabin is by an air stair at the rear passenger door, and a modular galley in the rear of the aircraft is serviced through the same door. A standard toilet is located in the rear of the aircraft behind the passenger door. Baggage is accommodated in overhead bins on both sides of the cabin, under seat stowage, in an externally accessed forward and aft baggage compartment, and in a closet.

US \$ 350.00

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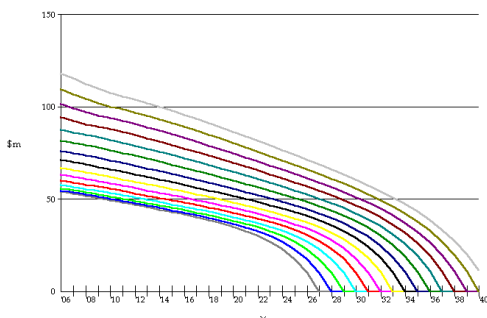
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TRANSPORT AIRCRAFT VALUES (TAV)

TAV reports current fair-market values by year of build and projects the future value of 116 transport category aircraft. The future values are based on an economic model that projects the values based on the earning stream of approximately 130 different types of aircraft for their useful lives. The model takes into account the operating cost and characteristics of each aircraft, worldwide and future traffic volumes, fare levels and current and future fleet compositions. The values are presented in both constant and then-current dollars.

CAVAS Graph



Profit & Loss Report

Aircraft Type	Period	1	2	3	4	5	6
REVENUES (US\$)							
Passengers	49,328,754	49,270,739	49,212,559	49,154,213	49,095,701	49,037,189	48,978,677
Freight & Mail	8,879,176	8,868,733	8,858,261	8,847,758	8,837,226	8,826,673	8,816,141
Other Revenue	986,575	985,415	984,251	983,084	981,914	980,744	979,574
TOTAL OPERATING REVENUE	59,194,505	59,124,887	59,055,070	58,985,055	58,914,841	58,844,627	58,774,413
VARIABLE EXPENSES							
Fuel	6,918,975	6,917,340	6,915,705	6,914,070	6,912,435	6,910,800	6,909,165
Landing Fees	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823
Enroute Charges	392,440	392,440	392,440	392,440	392,440	392,440	392,440
Pax Commissions	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313
Freight Commissions	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876
Food & Supplies	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194
Passenger Liability Insurance	379,590	379,590	379,590	379,590	379,590	379,590	379,590
TOTAL VARIABLE COST	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212
SEMI-VARIABLE EXPENSES							
Crew Salaries & Expenses	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760
Maintenance & Engineering	587,650	587,650	587,650	587,650	587,650	587,650	587,650
TOTAL SEMI-VARIABLE COST	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410
TOTAL OPERATING COST	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622
OPERATING PROFIT OR LOSS	29,985,883	29,916,265	29,846,448	29,776,631	29,706,814	29,636,997	29,567,180
D-CHECK ADJUSTMENT							
Cumulative Hours	4,830	9,660	14,490	19,320	24,150	28,980	33,810
Cumulative Dollars	315,000	0	0	0	0	0	0
ADJUSTED CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646

Profit & Loss Report

Aircraft Type	Period	1	2	3	4	5	6
FIXED EXPENSES							
Station Overhead	346,597	345,923	345,249	344,575	343,901	343,227	342,553
Maintenance Burden	176,295	351,824	526,586	700,581	873,810	1,047,039	1,220,268
Other Overhead	0	0	0	0	0	0	0
TOTAL FIXED COST	522,892	697,747	871,835	1,045,156	1,217,711	1,390,266	1,562,821
TOTAL OPERATING COST	31,464,497	32,185,749	32,907,130	33,618,052	34,329,104	35,040,156	35,751,208
General & Admin. Allocation	1,573,225	1,609,287	1,645,180	1,680,303	1,716,455	1,752,607	1,788,759
TOTAL COST	33,037,722	33,795,036	34,552,310	35,308,355	36,045,559	36,792,763	37,539,967
OPERATING PROFIT OR LOSS	26,156,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
D-CHECK ADJUSTMENT							
Cumulative Hours	4,830	9,660	14,490	19,320	24,150	28,980	33,810
Cumulative Dollars	315,000	0	0	0	0	0	0
ADJUSTED CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646

Select Aircraft Type

Available Aircraft

- Airbus A300B4-600R
- Airbus A300B4-600RF
- Airbus A310-200
- Airbus A310-200F
- Airbus A310-300
- Airbus A310-300F
- Airbus A318
- Airbus A319-100
- Airbus A320-100
- Airbus A320-200
- Airbus A321-100
- Airbus A321-200
- Airbus A330-200
- Airbus A330-300
- Airbus A340-200
- Airbus A340-300
- Airbus A340-500
- Airbus A340-600
- Airbus A350-800
- Airbus A350-900
- Airbus A380-800
- Avro RJ-100
- Avro RJ-70
- Avro RJ-85
- BAe 111-200/300/400/500

Picture

Selected: Airbus A340-300

Description: Widebody 4 Engine Passenger

Manufactured: 1992 To 2006

Values: \$54.00m \$118.00m

Estimated Life: 35 years File No. 013

Search Term

Add Modify Delete OK

Aircraft: Airbus A340-300 - Widebody 4 Engine Passenger

CAVAS Figures

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
2006	54.00	54.61	55.83	57.66	60.10	63.14	66.80	71.07	75.94	81.43	87.52	94.23	101.54	109.47	118.00
2007	52.85	53.49	54.70	56.56	58.99	62.01	65.63	69.95	74.86	80.37	85.92	92.18	99.12	106.73	115.25
2008	51.68	52.36	53.61	55.43	57.85	60.84	64.42	68.69	73.65	79.18	84.76	90.48	96.97	104.20	112.39
2009	50.49	51.19	52.46	54.29	56.70	59.67	63.24	67.50	72.44	77.95	83.52	89.34	95.81	103.44	111.63
2010	49.28	49.99	51.27	53.10	55.50	58.46	62.01	66.24	71.15	76.64	82.21	87.94	94.61	102.54	110.73
2011	48.05	48.77	50.05	51.88	54.27	57.22	60.76	64.97	69.84	75.33	80.94	86.75	93.60	101.73	110.00
2012	46.80	47.52	48.80	50.63	53.01	55.95	59.48	63.68	68.53	73.99	79.56	85.34	92.37	100.70	109.13
2013	45.53	46.25	47.53	49.36	51.73	54.66	58.18	62.37	67.21	72.65	78.20	83.94	91.15	99.68	108.21
2014	44.24	44.96	46.24	48.06	50.42	53.34	56.85	61.02	65.84	71.26	76.78	82.59	89.98	98.71	107.34
2015	42.93	43.65	44.92	46.74	49.09	51.99	55.50	59.65	64.43	69.81	75.30	81.07	88.64	97.56	106.29
2016	41.60	42.32	43.59	45.40	47.74	50.63	54.13	58.26	63.01	68.36	73.81	79.44	86.19	95.30	104.03
2017	40.25	40.96	42.23	44.04	46.37	49.25	52.74	56.86	61.58	66.88	72.44	78.13	84.94	94.25	103.08
2018	38.88	39.59	40.85	42.65	45.00	47.87	51.35	55.45	60.14	65.39	70.94	76.61	83.50	92.90	101.73
2019	37.49	38.20	39.45	41.25	43.59	46.45	49.92	54.00	58.67	63.80	69.34	75.00	81.87	91.27	100.10
2020	36.08	36.79	38.03	39.82	42.15	45.00	48.46	52.52	57.16	62.25	67.76	73.40	80.25	89.64	98.47
2021	34.65	35.36	36.59	38.38	40.70	43.54	46.99	51.03	55.65	60.71	66.19	71.80	78.63	88.01	96.84
2022	33.20	33.91	35.13	36.91	39.22	42.05	45.49	49.52	54.12	59.15	64.61	70.19	76.99	86.36	95.19
2023	31.73	32.44	33.65	35.43	37.73	40.55	44.00	48.01	52.59	57.60	63.04	68.60	75.38	84.75	93.58
2024	30.24	30.95	32.15	33.92	36.21	39.02	42.45	46.45	51.02	56.01	61.43	67.06	73.82	83.19	92.02
2025	28.73	29.44	30.63	32.40	34.68	37.48	40.89	44.88	49.44	54.41	59.76	65.36	72.10	81.47	90.30
2026	27.20	27.91	29.09	30.85	33.12	35.91	39.30	43.28	47.82	52.77	58.10	63.66	70.38	79.75	88.58
2027	25.64	26.35	27.52	29.27	31.49	34.27	37.64	41.60	46.12	51.04	56.34	61.88	68.57	77.94	86.77
2028	24.06	24.76	25.92	27.66	29.87	32.63	36.00	40.00	44.50	49.39	54.66	60.17	66.84	76.21	85.04
2029	22.46	23.16	24.31	26.04	28.24	31.00	34.36	38.34	42.82	47.69	52.94	58.43	65.08	74.45	83.28
2030	20.84	21.53	22.67	24.39	26.58	29.32	32.67	36.64	41.10	45.94	51.16	56.63	63.26	72.63	81.46
2031	19.20	19.88	21.01	22.71	24.89	27.61	30.95	34.90	39.34	44.14	48.94	54.30	60.89	70.26	79.09
2032	17.53	18.21	19.33	21.02	23.19	25.90	29.22	33.15	37.54	42.31	47.08	52.41	58.96	68.33	77.16
2033	15.84	16.51	17.61	19.29	21.45	24.14	27.44	31.36	35.72	40.46	45.19	50.48	56.99	66.36	75.19
2034	14.13	14.79	15.88	17.54	19.68	22.35	25.63	29.53	33.86	38.56	43.26	48.52	54.91	64.28	73.31
2035	12.40	13.05	14.13	15.77	17.89	20.54	23.80	27.68	31.94	36.52	41.19	46.41	52.76	62.13	71.16
2036	10.64	11.28	12.34	13.96	16.05	18.68	21.91	25.75	29.96	34.50	39.04	44.24	50.56	59.93	68.96
2037	8.86	9.48	10.52	12.12	14.19	16.80	19.99	23.79	27.96	32.45	36.94	42.11	48.39	57.76	66.79
2038	7.06	7.66	8.68	10.26	12.31	14.89	18.05	21.81	25.93	30.37	34.81	39.94	46.19	55.56	64.39
2039	5.23	5.81	6.81	8.37	10.40	12.95	16.08	19.81	23.90	28.28	32.68	37.76	43.91	53.28	62.09
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