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WORLDWIDE AVIATION MARKETING AND MANAGEMENT SERVICE

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# Newsletter

## Market Comment

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**Go Big or Go Home.** Low-cost airlines in the Southeast Asia-Pacific Rim area ordered more than 1,000 new aircraft to serve the exploding growth in air travel. **Boeing** shows 405 unfilled orders placed by airlines in Australia, Indonesia, Malaysia, Singapore, Taiwan and Thailand. **Airbus** lists 1,040 A320neo Family orders from the larger Asia-Pacific region. This number does not include the hundreds of A320ceos delivered or in backlog. During the order boom, which is apparently still ongoing, **AVMARK** remarked that it did not seem possible that all the low-cost carriers (LCC) would survive and that all the planes would be delivered. This augury seems to be coming true. One of the biggest purchasers of **Airbuses** in the region, **AirAsia** recently delayed delivery of 27 A320s by the expedient of converting A320ceo orders into A320neos, which will not be delivered for several years. The financially distressed **Qantas Airways** dropped 21 A320ceos in favor of taking 21 A320neos several years later, and **Tigerair**, Singapore, cancelled nine A320ceos when it ordered 37 A320neos. **Airbus** recorded 126 A320 cancellations from all its customers, including the 73 order changes in 2014, while **Boeing** reported a total of 80 737 cancellations, but it did not highlight the conversions to the 737 MAX. The message is that LCC and mainline airlines are still loading up on capacity.

So far, the only airline casualty has been **Tiger Airways**, Singapore, and its associated companies. **Tiger** pulled the plug on **Tigerair Mandala** in Indonesia, a country where the much larger **Lion Air** and well established flag carrier **Garuda Indonesia** dominate; and where **AirAsia Indonesia** is nipping on their heels. **Tiger** sold its **Tigerair Philippines** to the much larger rival, **Cebu Pacific Air**. The low-cost subsidiary of **Singapore Airlines** also sold its remaining 40 percent share in **Tigerair Australia** to **Virgin Australia** for a dollar, just to be rid of its low-cost, high-loss operation in the *Land Down Under*. **Tigerair**, in Singapore, operates only 25 A320s and has 37 A320neos on order. Its newest joint-effort airline, **Tigerair Taiwan**, flies only one A320 and perhaps a few more will be transferred from the Singapore fleet. **Tigerair's** over capacity problem was solved by sub-leasing a dozen A320s, from its former Indonesian and Philippine subsidiaries, to **IndiGo** in India. While its competition is growing at frantic rates, **Tigerair** is shrinking, perhaps into oblivion. **Tigerair** seemed to have a rational plan to grow at a responsible rate, but it is being overwhelmed by a tsunami of capacity. **AirAsia's**, **Lion Air's** and **VietJet's** hundred-plane orders seemed overblown at the time, but the weight of the

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aluminum is crushing the smaller competition and driving it from the skies. The same thing is happening in Europe, India and the Gulf, where the airlines with the largest fleets are pushing their smaller rivals off the runways. When it comes to low-cost carriers, bigger is better and the biggest can set the fare levels and can bankrupt their less well-endowed rivals.

## Airbus Orders

**Airbus** booked 64 orders for its A320 Family aircraft and 12 A330-200s in September, raising **Airbus'** gross sales to 1,077 for the year. Leading the month's single-aisle bookings was **easyJet's** order for 27 A320neos (current engine option), raising the carrier's **Airbus** order total to 315 aircraft. **SWISS**, a subsidiary of the **Lufthansa Group**, added 10 A320neo and five A321neo jetliners, to gradually renew and replace the airline's existing fleet of A320 Family aircraft. **Lufthansa Group** also approved the purchase of 10 A320neo aircraft for its **Eurowings** intra-European subsidiary. These airplanes will become the backbone of the airline's new low-cost business plan that was announced by the **Lufthansa Group** in July 2014. Early in September, **Qatar Airways Group** contracted to buy eight A320neo aircraft. The final of the month's single-aisle transactions was **Z/C Aviation Partners'** purchase of four more A319neo jetliners for lease to **American Airlines. International Airlines Group** converted eight previously-announced A330-200 options into firm orders for Spanish flag carrier **Iberia**. The airline will become a new operator of this model. **Iberia's** all-**Airbus** fleet already includes eight A330-300s, and its first new -200s will be delivered at the end of 2015. **Air Algérie** will acquire three more A330-200s as part of the carrier's continuing growth plans. It already operates five of the type. **Airbus** sold an ACJ330-200 corporate jet to a private customer. After subtracting 286 cancellations, **Airbus'** net orders for 2014 totaled 791 aircraft at the end of September.

**Airbus** delivered 42 A320 Family jetliners, eight A330s and four A380s. This included the first two A320s for Indian start-up carrier **Vistara Airlines**, which leased them from **BOC Aviation. American Airlines** acquired seven A320 family aircraft during the month. The manufacturer provided the first of 10 A380s to **Qatar Airways**, and has delivered 21 A380s to customers so far in 2014. At the end of September, **Airbus** had a backlog of 5,907 aircraft – another industry record.

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**Lufthansa Group's SWISS** (Swiss International Air Lines) added 10 A320neos and five A321neos in September. The firm order included purchase rights for an additional 10 of the type. The A320neos will gradually renew and replace **SWISS'** existing fleet of five A319s, 23 A320s and eight A321s. They will be delivered from 2019 onwards.

**Eurowings, Lufthansa Group's** new low-cost unit purchased ten A320ceo aircraft. The full-service airline wants to expand **Eurowings** to serve tourist destinations outside Germany. The new A320s will replace **Eurowings'** 23 **Bombardier** CRJ900s, which were deemed too small. **Lufthansa** will transfer 13 of its new A320s to **Eurowings** in 2015. **Lufthansa Group's** 25 new A320s were valued at €2.5 billion (\$3.24 billion) at list prices. The **Lufthansa Group** did not announce its engine selection for the new A320s.

**EasyJet Converted its Last 27 Options** into an order for 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. **EasyJet** still holds purchase rights for 100 A320neo jets that were reserved when it bought 100 A320neos in June 2013.

**International Airlines Group (IAG)** converted eight A330-200 options into firm orders for its Spanish subsidiary **Iberia**. The airline will receive its first A330-200 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-

## Airbus Orders, Deliveries and Backlog September 2014

| SEP<br>ORD        | SEP<br>DEL | SEP<br>CANX | TOTAL<br>ORD     | TOTAL<br>DEL | BACK<br>LOG |
|-------------------|------------|-------------|------------------|--------------|-------------|
| <b>A318</b>       |            |             |                  |              |             |
| -0-               | -0-        | -0-         | 79               | 79           | -0-         |
| <b>A319</b>       |            |             |                  |              |             |
| 4                 | 4          | -0-         | 1,465            | 1,420        | 45          |
| <b>A319neo</b>    |            |             |                  |              |             |
| -0-               | -0-        | -0-         | 49               | -0-          | 49          |
| <b>A320</b>       |            |             |                  |              |             |
| 45                | 26         | -0-         | 4,640            | 3,763        | 877         |
| <b>A320neo</b>    |            |             |                  |              |             |
| 10                | -0-        | -0-         | 2,494            | -0-          | 2,494       |
| <b>A321</b>       |            |             |                  |              |             |
| -0-               | 12         | -0-         | 1,535            | 981          | 554         |
| <b>A321neo</b>    |            |             |                  |              |             |
| 5                 | -0-        | -0-         | 729              | -0-          | 729         |
| <b>A330</b>       |            |             |                  |              |             |
| 12                | 8          | -0-         | 1,354            | 1,120        | 234         |
| <b>A350</b>       |            |             |                  |              |             |
| -0-               | -0-        | -0-         | 750              | -0-          | 750         |
| <b>A380</b>       |            |             |                  |              |             |
| -0-               | 4          | -0-         | 318              | 143          | 175         |
| <b>This Month</b> |            |             | <b>This Year</b> |              | <b>BL</b>   |
| 76                | 54         | -0-         | 791              | 443          | 5,907       |

**Airbus sold 14,606 aircraft and delivered 8,699 as of September 31, 2014. Two hundred eighty six orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.**

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600s. **IAG** placed the options when it bought eight A330-300s for **Iberia** in 2010, and the group reserved more A330 options in September. The newly ordered A330s will replace half of the 16 A340 family aircraft in **Iberia's** long-haul fleet.

**Air Algérie** signed a firm order for three A330-200 passenger aircraft in September. It confirmed a Memorandum of Understanding that was placed at the **Dubai Airshow 2013**. The new A330s will be deployed on medium and long-haul routes from the airline's hub in Algiers, Algeria. **Air Algérie** has already purchased and taken delivery of five A330-200s, which were fitted with **GE CF6-80E1A4** engines.

**IndiGo**, India's largest domestic airline by market share, signed a Memorandum of Understanding (MoU) for 250 A320neo Family aircraft. When it is confirmed, the agreement will become **Airbus'** single largest order by number of aircraft. Deliveries will start in 2018. **Aditya Ghosh**, President of **IndiGo** said, "This new order reaffirms **IndiGo's** commitment to the long-term development of affordable air transportation in India and overseas. The additional aircraft will enable us to continue to bring our low fares and courteous, hassle free service to more customers and markets and will create more job opportunities and growth." **IndiGo** reserved the right to buy another 100

A320s as part of the deal. **Airbus** did not provide a value of the latest deal, but the entire transaction was valued at \$25.7 billion, based on the A320neo's list price of about \$102.8 million. **IndiGo** placed its first order for 100 A320ceo aircraft (worth \$6 billion) at the 2005 **Paris Air Show**, and started operations in 2006. It ordered 160 A320neos and 20 A321neos (valued at more than \$15 billion at list prices) in January 2011. The airline has taken delivery of 96 of its first 100 A320ceos, and has already returned 14 of them to lessors. In October, the carrier agreed to sublease 12 used A320ceos from **Tigerair** in Singapore. "We are one of the world's most under-penetrated aircraft markets with one commercial airplane for over three million Indians," Mr. **Ghosh** said, justifying the huge order. In the U.S., mainline airlines operated 3,739 aircraft in 2011, roughly one aircraft per every 84,500 Americans. The average American flies 1.8 times per year, a German makes one flight annually, while people from China and India make a relatively low 0.2 and 0.1 flights, respectively, **Airbus** said. India will require 1,290 new aircraft valued at \$190 billion by 2032 to meet its travel demand, the planemaker said in its annual forecast. The domestic airlines are ordering more aircraft as economic growth boosts air travel demand in the world's second-most populous nation. **IndiGo** intends to eventually operate a 1,000-jet fleet. It also plans to retire its oldest aircraft after they reach 6 years of age. In April, **IndiGo** hired four banks to arrange a \$400 million initial public offering, the largest in India's aviation history. **Airbus**

**Airbus to Lower A330 Family Production Rate.** The manufacturer will cut the current rate by one aircraft per month in the fourth quarter of 2015 as it transitions toward the A330neo. Since 2013, **Airbus** has built 10 A330 Family aircraft each month, the industry's highest ever production rate for this aircraft size category, **Airbus** said. "Our role as an aircraft manufacturer is to anticipate and adapt our output to ensure we continue to maintain a smooth production flow for **Airbus** and for our supply chain," said **Tom Williams**, **Airbus'** Executive Vice President - Programs. "With the recent commercial success we've seen following the launch of the A330neo, in addition to the new 242-ton weight variant and the A330 optimized for regional routes, we are confident we will sustain a steady production towards the A330neo ramp up period." The reason for the production cut is that the company could build down its order book for the standard A330 in two years at the current rate and the A330neo will not be ready for production until 2017, leaving a one year gap. The rate cut will close that gap by one month. The sale of 100 low-gross-weight regional A330s to China would help fill the gap between the A330 and A330neo.

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stated in its press release that, the A320neo (new engine option) incorporates the latest generation engines and large Sharklet wing-tip devices, which will deliver 15 to 20 percent in fuel savings by 2020. The A320 Family has won almost 11,000 orders to date and has delivered more than 6,200 aircraft to 400 customers worldwide.

**China Southern Airlines** announced it will acquire 50 **Airbus** A320neo Family aircraft and 30 of the current engine option A320s. It has not chosen the engine manufacturer for either of the jets. The aircraft will be delivered between 2016 and 2020. The A320s current catalogue prices suggest that list value of the deal is around \$8 billion. **China Southern** will not release the discounts it negotiated because **Airbus** insisted on preserving confidentiality. The airline did report that the consideration will be partly payable by cash and partly by financing arrangements with banking institutions. **Airbus** will take six **Embraer** ERJ-145s, spare engines and parts as trade-ins.

**China Aviation Supplies Holding Company (CAS)** signed a General Terms Agreement (GTA) for the purchase of a total of 70 **Airbus** A320 Family aircraft, list priced at approximately \$7 billion. The agreement coincided with an October visit to Berlin, Germany, by Chinese Premier **Li Keqiang**. The engine selection has not been released. The GTA was signed by **Fabrice Brégier**, **Airbus** President and CEO and **Li Hai**, President of **CAS**. Mr. **Brégier** commented, "We are grateful to China for its strong vote of confidence in our leading A320 Family aircraft, and are happy to see them assembled at our Chinese facilities. Our 30 year history of partnership with China keeps growing and expanding through these types of agreements." Sixteen Chinese airlines currently operate approximately 140 A330 Family and more than 920 A320 Family aircraft. **Airbus** forecasts that in the next 20 years, China will need more than 5,300 new passenger aircraft in the 100-plus seat category, including freighters. **Airbus** final assembly line

**Airbus**, the **Tianjin Free Trade Zone (TJFTZ)** and **Aviation Industry Corporation of China (AVIC)** re-confirmed their intention to set up an **A330 Completion and Delivery Center (C&DC Tianjin)** in Tianjin, China, by signing a Letter of Intent (LoI) in Berlin during a state visit by Chinese Premier **Li Keqiang** to German Chancellor **Angela Merkel** in October. The airframer already had set up the **A320 Family Final Assembly Line and Delivery Center (Tianjin FALC)** with its Chinese partners. The new program addresses the need to support the fast growth of air traffic in China with larger aircraft. The A330 Completion Center will perform cabin installation, aircraft painting, engine runs and aircraft delivery. The aircraft would be assembled in Toulouse and then fly to China for their completion in Tianjin. The European planemaker has been talking for some time about expanding its footprint in China as a way of supporting sales of its A330 to the world's fastest-growing aviation market. **Airbus** needs to bridge a one-year gap in the A330 production schedule between the current A330 and the A330neo, which will enter service in late 2017. It sees that China has a strong domestic market requirement for its proposed medium-haul A330 regional variant. **Airbus** CEO **Fabrice Brégier** said, "We believe there is a big market for A330s, especially for domestic use in China because of airport congestion. We looked at what could be done from an industrial perspective. The project is not formally launched. We are testing the market to see how it reacts to our proposals around the A330." So far, no deals have been struck, but he said, "there is a trajectory and we are well placed on this trajectory." Some industry analysts think China underestimated its needs for large jets and may have to increase short-term deliveries. At the same ceremony, **China Aviation Supplies Holding Company** signed a General Terms Agreement to buy up to 70 A320 and A321 aircraft, valued at \$7 billion at list prices of \$94 million to \$110 million each respectively.

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in Tianjin has assembled and delivered more than 190 A319s and A320s. **China Aviation Supplies** placed an order for 43 A320s and 27 A330s during a state visit by Chinese President **Xi Jinping** to France in June. The **CAS** orders will be allocated to domestic airlines.

**European Aviation Safety Agency (EASA)** awarded the world's newest commercial airliner, the A350-900, its Type Certification on September 30, 2014. The aircraft is powered by **Rolls-Royce** Trent XWB engines. **Federal Aviation Administration (FAA)** certification is expected shortly. The first production A350-900 will be delivered to launch customer **Qatar Airways** by December 10. **Airbus** President and CEO, **Fabrice Brégier**, boasted, "Our fleet of five test aircraft completed the certification campaign, on time, cost and quality. Accumulating more than 2,600 flight test hours, we created and successfully achieved one of the industry's most thorough and efficient test programs ever developed for a jetliner." **EASA** also approved the new A350-900 for ETOPS (Extended-range Twin engine aircraft Operations) beyond 180 minutes diversion time. The airplane can fly up to 2,500nm from a diversion airfield, a distance which corresponds to a maximum ETOPS diversion time of approximately 370 minutes, at one-engine-inoperative speed under standard atmospheric conditions. **Airbus** said, the ETOPS 370 minute option will allow new direct southern routes such as between Australia, South Africa and South America; while the ETOPS 300 minute option will facilitate more efficient transoceanic routes across the North and Mid-Pacific – such as from Southeast Asia to the U.S., and Australasia to the U.S. Around 70 percent of A350 flight hours will be ETOPS. The A350-900 was the first new airliner ever to be approved for ETOPS beyond 180 minutes before entry into service. The **FAA's** ETOPS certification is expected by October 31. At the end of September, 2014, the A350 XWB had a backlog of 750 orders from 39 customers worldwide.

**Airbus' Global Market Forecast** said in the 2014-2033 period passenger traffic will grow annually at an average of 4.7 percent. This will require the delivery of around 31,400 new passenger and freighter aircraft (100 seats and above) worth \$4.6 trillion. Currently there are approximately 18,500 passenger and freighter aircraft in service, and the fleet will more than double to 37,500 by 2033. Some 12,400 older less fuel efficient passenger and freighter aircraft will be retired. Nearly 32 million annual flights carried three billion passengers and 50 million tons of freight last year. The global aviation sector's economic impact was estimated at \$2.4 trillion annually. The economic growth rates in the emerging markets in Africa, Asia, Latin America and the Middle East, have outstripping the more economically developed regions. The middle classes in Asia are expected to quadruple in size by 2033, and they will double from 33 percent to 63 percent of world population. **Airbus** foresees a continuing trend towards larger widebody models, which fly long-haul routes and increasingly more regional and domestic sectors. **Airbus** forecasts a need for nearly 9,300 widebody passenger and freighter aircraft, valued at some \$2.5 trillion, representing 30 percent of all new aircraft deliveries and 55 percent by value. The manufacturer broke down widebody demand to 7,800 twin-aisle aircraft (from 250 to 400 seats) and 1,500 very large aircraft (400+ seats). In the single-aisle market, **Airbus** forecast a requirement for more than 22,000 new aircraft worth \$2.1 trillion, an increase of 2,000 aircraft compared to the previous forecast. The planes represent 70 percent of new deliveries and 45 percent of the value of all aircraft. Traffic growth led to the average aircraft size increasing by 40 percent since the 1980s as airlines up-sized to larger aircraft.

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**Airbus Offers Long-Range A321neo.** "The long-range version of the A321neo will be the ideal 757 replacement with true transatlantic range, 25 percent lower fuel burn and true long-range comfort," **Airbus** told the press. The 757 is getting long of tooth with the oldest delivered in 1983 and the newest was built in 2004. The closest thing **Boeing** offers to supplant the 757 is the 737-900ER which is not as large. **Airbus** said, "We are actively discussing this A321neo development with customers. The 97-ton maximum take-off weight and additional fuel capacity will give the A321neo a significant range increase overtaking the 757 currently operating on the transatlantic." The A321neo will be able to fly 100 nautical miles farther than the winglet-equipped 757-200, and could seat about 164 passengers, five fewer than the 757's 169 seats in mixed class. **Airbus** expects the jet to enter service in 2019.

## Boeing Orders

**Airlines and Lessors Bought 95 737s, Four 767s, Two 777s and 21 787s** in September, for a total of 122 new sales. Early in the month, **Ethiopian Airlines** ordered 20 737 MAX 8s. Later an unidentified customer (**Garuda Indonesia Airlines**) committed to buy 50 737 MAX 8s, and three **Unidentified Customers** bought four, five and eight 737-800s, **Boeing** reported. **Avolon** bought five 737 MAX 9s and six 787-9s. **Federal Express** purchased four more 767-300ERF freighters, for a total of 52, and **GECAS** ordered two 777-300ERs, for a total of 49. One **Business Jet/VIP Customer** ordered the second 737 MAX BBJ, and another BBJ customer signed a contract for two 737-700 BBJs. Finally, an **Unidentified Customer** will acquire 15 787-9s. During September, **Boeing** lost 26 737s, two **GECAS** 747-8Fs and all 15 of **Air Berlin's** 787 orders. The company booked 1,106 new orders in the first three quarters, including 792 737s, one 747-8F, four 767Fs, 261 777s and 48 787s. Cancellations of 106 aircraft lowered the net order total to 1,000. **Boeing** delivered 67 new airplanes in September, including 44 737s, two 747s, two 767s, nine 777s and 10 787s, for a total of 528 so far this year.

**Ethiopian Airlines** announced its order for 20 737 MAX 8s in September. The deal was worth more than \$2.1 billion at list prices. The contract included options and purchase rights for a further 15 737 MAX 8s. The sale was the largest single order for **Boeing** planes from an African carrier in terms of numbers. **Ethiopian**

| Boeing September 2014<br>Orders, Deliveries                                                  |            |             |                  |              |             |
|----------------------------------------------------------------------------------------------|------------|-------------|------------------|--------------|-------------|
| SEP<br>ORD                                                                                   | SEP<br>DEL | SEP<br>CANX | TOTAL<br>ORD     | TOTAL<br>DEL | BACK<br>LOG |
| <b>737</b>                                                                                   |            |             |                  |              |             |
| 95                                                                                           | 44         | -26         | 12,257           | 8,224        | 4,033       |
| <b>747</b>                                                                                   |            |             |                  |              |             |
| -0-                                                                                          | 2          | -2          | 1,536            | 1,494        | 42          |
| <b>767</b>                                                                                   |            |             |                  |              |             |
| 4                                                                                            | 2          | -0-         | 1,114            | 1,064        | 50          |
| <b>777</b>                                                                                   |            |             |                  |              |             |
| 2                                                                                            | 9          | -0-         | 1,805            | 1,239        | 566         |
| <b>787</b>                                                                                   |            |             |                  |              |             |
| 21                                                                                           | 10         | -15         | 1,054            | 193          | 861         |
| <b>This Month</b>                                                                            |            |             | <b>This Year</b> |              | <b>BL</b>   |
| 122                                                                                          | 67         | -43         | <b>1,000</b>     | <b>528</b>   | 5,552       |
| <b>Boeing sold 25,296 aircraft and delivered 19,744 as of September 30, 2014.</b>            |            |             |                  |              |             |
| <b>The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s.</b> |            |             |                  |              |             |
| <b>Sales totals include 106 cancellations.</b>                                               |            |             |                  |              |             |

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currently flies to 83 destinations using 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.

**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. They signed a commitment to purchase the airplanes at the **Farnborough Airshow** in July. This was **Avolon's** first order for the 787 Dreamliner and the lessor now has 20 737 MAX airplanes in backlog.

**Garuda Indonesia** announced its previously undisclosed order for 50 737 MAX 8s in October. The contract was valued at \$4.9 billion at current list prices (\$98 million each). The flag carrier of Indonesia purchased 46 737 MAX 8s and converted four existing 737-800NG orders to 737 MAX 8s. **Garuda Indonesia** currently operates 75 **Boeing** 737-800s and four 737 Classics. The new order gives the airline the flexibility to grow and update its fleet as the market demands. The **Garuda** order continues the momentum of the 737 MAX in the marketplace, **Boeing** said. They have sold a total of 2,295 737 MAX airplanes to 47 customers worldwide.

**Alaska Airlines** announced the purchase of 10 additional 737-900ER aircraft in October. The planes will be added to **Alaska's** all-**Boeing** fleet. The purchase brings the carrier's total jets on order to 74, including 37 737-900ERs, 20 737 MAX 8s and 17 737 MAX 9s. "We love having Seattle as our home and buying locally built airplanes is a point of pride for us," said **Alaska** President and CEO **Brad Tilden**. "These new planes will allow us to serve our customers even better with improved in-cabin experience, including our new leather **Recaro** seats with added leg room, power outlets at every seat and larger overhead bins." The order was list priced at \$990 million (\$99 million each). The new 737-900ERs will be used for network growth, and to replace **Alaska's** 27 aging 737-400s with jets capable of carrying 25 percent more passengers while using the same amount of fuel.

**Kunming Airlines** has committed to purchase 10 737s, including four 737-700s and six 737 MAX airplanes, list priced \$897 million. The commitment is subject to the approval of the **Chinese Government** and will be posted on **Boeing's Orders & Deliveries** website once it is confirmed. **Kunming Airlines** is based at **Changshui International Airport** in the capital city of Yunnan province and began operations in 2009. The carrier currently serves more than 25 cities across China with a fleet

**Boeing** announced on October 2 that it will increase the 737 production rate to 52 airplanes per month in 2018 in response to strong market demand from customers worldwide. Once the increase is implemented, the 737 program is expected to build more than 620 airplanes per year, the highest rate ever for a commercial jet. **Boeing** currently produces 42 airplanes per month at its Renton, Washington, factory, and the company previously announced plans to increase the production rate to 47 airplanes per month in 2017.

**Boeing's 2014 Current Market Outlook** forecast of air traffic volumes and commercial airplane demand saw a need for more than 25,000 single-aisle airplanes over the next 20 years, worth \$2.56 trillion. "For over a decade we have seen resilient demand for the 737 and a rate increase to 52 per month reflects the appetite for airplanes like the 737 MAX and Next-Generation 737," said **Randy Tinseth**, VP of Marketing at **Boeing Commercial Airplanes**. "Our thorough analysis tells us the single-aisle market continues to expand and is the fastest growing, most dynamic segment of the market." To date, 266 customers have placed 12,257 orders for the 737, including more than 6,800 orders for the Next-Generation 737 and 2,295 orders for the 737 MAX. **Boeing** currently has more than 4,033 unfilled orders across the 737 family.

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of 10 737-700s and five 737-800s. The new 737-700s will carry up to 128 passengers in a two-class configuration. **Boeing** has sold 1,215 Next-Generation 737-700s to date.

**Boeing Started Production of the First 737 MAX.** The company's **Boeing Fabrication Integrated AeroStructures**, Auburn, Washington, completed the first fuselage stringers for the MAX in October. They run the length of the fuselage barrel and give it stability and strength. **Boeing** will send the stringers to **Spirit Aerosystems**, Wichita, Kansas, for installation into the first 737 MAX fuselage. The completed fuselage will be shipped by rail to the Renton facility where **Boeing** employees will join the body with the wings, tail, engine, and the rest, to build the first 737 MAX. The program is on track to begin final assembly of the first flight test aircraft in 2015. The airplane is scheduled to fly in 2016.

**Boeing Delivered** 120 737NGs in the third quarter, along with six 747s, two 767s, 27 777s and 31 787s for a total of 186 aircraft. So far this year, the manufacturer has built 528 commercial airplanes, including 359 737NGs, a dozen 747s, three 767s, 75 777s, and 79 787s. At the current rate, it will provide approximately 715 airplanes this year, a new record, and 10 percent more than the last record of 648 units delivered in 2013. Just 10 years ago, during the post 9/11 recession, **Boeing** delivered only 285 airplanes. **Boeing's** Defense unit handed over one 737-based AEW&C aircraft, four P-8 maritime patrol planes and two C-17A tactical transports. This year the company delivered three AEW&C, six P-8s and seven C-17s.

## Regional Report

**Bombardier's CSeries Customer, SWISS** has had to lease four **Embraer** E-Jets from **Helvetic Airways AG** due to the delays in delivery of the first of 30 CSeries CS100s. The E-Jets will replace elderly and inefficient **BAe** Avro regional jets. **SWISS'** CS100s are due for delivery from 2015 through 2017. The Swiss national carrier intends to add 22 new European destinations from Zurich, with the new planes at a 2 percent increase in capacity. The carrier will invest 5 billion Swiss francs (\$5.18 billion) on new aircraft as it defends its home market against **easyJet** and **Etihad Regional**, operated by **Darwin Airline**. The CSeries is still scheduled to enter service in 2015 and the program is about \$1 billion over budget. It was originally supposed to be delivered in 2013. **Bombardier** is still struggling to win customers for the plane which is a lower-cost and smaller alternative to the A319 and 737-700, which are currently the smallest models that the big two airframers build. **SWISS** plans to phase out its five A319s by 2017.

**Embraer Ended the Third Quarter** with a record order backlog worth \$22.1 billion. The backlog was driven mainly by a contract for 30 KC-390s from the **Brazilian Air Force**. Brazil awarded a \$1.5 billion contract to build two KC-390 prototypes in 2009, and 28 serial production KC-390s in July 2010. **Embraer** won a firm order for 50 E175s from **Republic Airways Holdings** worth \$2.1 billion. The airline operates the largest fleet of E-Jets in the world. **Republic Airways'** aircraft will be delivered from the third quarter of 2015 to 2017, and will be operated for **United Airlines** under the **United Express** brand. Another highlight was **Japan Airlines' (JAL)** firm order for 15 E170 and E190 models, the first of which will be delivered in 2015. **Embraer** delivered 19 passenger jets and 15 business jets, for a total of 34 aircraft in the third quarter. The company's firm order backlog totaled \$18.1 billion on June 30, 2014.

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**Mitsubishi Aircraft Rolled Out its First MRJ** on October 19. It was the first commercial aircraft that Japan has built in more than 40 years. The project has cost **Mitsubishi Heavy Industries** \$1.9 billion to develop and the Mitsubishi Regional Jet will be list priced at \$42 million. The 78- or 92-seat versions of the jet have won 191 firm orders and 216 options and commitments. In 2008, **Mitsubishi** announced plans to build the country's first passenger jet, and it had to delay the first flight three times. The MRJ is scheduled to fly by June next year. Japan's previous attempt to enter the commercial aircraft market was the 1960s era, 64-seat YS-11 turboprop, of which only 182 planes were built. **Mitsubishi's** customers include **All Nippon Airways-ANA**, **Japan Airlines**, and **Trans States** and **SkyWest** in the U.S. So far sales are below the hundreds of planes that **Mitsubishi** needs to sell to break even. **Mitsubishi** estimated a demand for 5,000 regional jets over the next 20 years and said it would capture half the market. To recoup its investment, the manufacturer would have to sell 2,000 units. Independent analysts see a need for slightly more than 4,000 regional jets in the under 100-seat class. They expect the MRJ may sell approximately 800 of them. **Mitsubishi** touted that the MRJ's greatest selling points were its clean-sheet design and the **Pratt & Whitney** geared turbofan engines which burn 20 percent less fuel than current aircraft powerplants. Unfortunately MRJ development and design problems delayed the project by three years, and market leader **Embraer** has caught up. Its E-Jet E2 will enter service only a year after the first MRJ delivery to **ANA** in June 2017. Analysts say the updated E2 will be as efficient as the MRJ, despite the fact it is a variant of the 15-year old E-Jet. The MRJ is also competing against the current **Bombardier** CRJ900s and CRJ1000s as well as the **Sukhoi** SuperJet 100 and the **COMAC** ARJ21-700, which will enter service with **Chengdu Airlines** at the end of this year.

### ***Embraer September 30, 2014 Orders & Deliveries***

| Type            | Total Orders           | Total Options | Total Deliveries | Current Backlog |
|-----------------|------------------------|---------------|------------------|-----------------|
| E170            | 193                    | 23            | 188              | 5               |
| E175            | 408                    | 360           | 227              | 181             |
| E190            | 580                    | 144           | 510              | 70              |
| E195            | 145                    | 2             | 135              | 10              |
| E175-E2         | 100                    | 100           | 0                | 100             |
| E190-E2         | 60                     | 70            | 0                | 60              |
| E195-E2         | 50                     | 50            | 0                | 50              |
| <b>Total</b>    | <b>1,536</b>           | <b>749</b>    | <b>1,060</b>     | <b>476</b>      |
| Type            | 3rd Quarter Deliveries |               | 2014 Deliveries  |                 |
| Light Exec Jets | 15                     |               | 54               |                 |
| Large Exec Jets | -0-                    |               | 10               |                 |
| Embraer 170     | -0-                    |               | 1                |                 |
| Embraer 175     | 16                     |               | 40               |                 |
| Embraer 190     | 2                      |               | 14               |                 |
| Embraer 195     | 1                      |               | 7                |                 |
| <b>Total</b>    | <b>34</b>              |               | <b>126</b>       |                 |

**Superjet International** believes that the market for large regional jets will exceed 3,500 units over the next 20 years. The Russian-Italian company forecasts a demand for 1,350 jets in the 90- to 120-seat sector over the next decade, and the need for another 2,170 in the subsequent 10 years. **Superjet International** said the demand for 100-seat aircraft was being driven by the need for more frequencies and the creation of new regional networks in developing markets. They think the Asia-Pacific market will account for 18 percent of regional jet deliveries by 2033, and the majority of the jets will carry 100 passengers. The market will be driven by a growing middle-class population and subsidies to regional aviation. Europe will also take 18 percent of regional jet deliveries, due to the growth of the eastern regions, while Latin America and Russia will account for 13 percent and 10 percent respectively. Thirty-

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five percent of new regional jets will be delivered in North America, and the majority of those planes will be fitted with less than 90 seats. The 60- to 90-seat market will need 1,680 new jets, **Superjet International** said and nearly 20,300 airplanes in the 120- to 200-seat range will be required in the next two decades.

## Order Changes and Cancellations

**Airbus Order Changes and Cancellations.** In September, **AirCap** transferred three A320ceo orders to **AerCap Ireland**. **Air China** added two A320ceo orders, and **China Eastern Airlines** added one A320ceo that were previously in the undisclosed category. **Nile Air** dropped seven A321ceo orders and has two left. **Thomas Cook Airlines** also cancelled two A320ceos. **Air Lease Corporation** added two A321s. **AWAS** switched its two A350-800 orders to the A350-900 type. **Airbus** now has 32 A350-800s and 549 -900s on backlog. **Aircraft Fleet Purchase** apparently transferred its last three A330-200 orders to a category called "Financial Institutions". **Aircraft Fleet** leased a dozen A330-200s to **Alitalia**. **Intrepid Aviation** switched one of its A330-200 orders to the -300 model. The lessor has one more -200 and seven -300s on order.

**Philippine Airlines (PAL)** may delay delivery of 25 A321ceos and three A330-300s now that billionaire tycoon **Lucio Tan** resumed the post of CEO. In August the airline chose not to exercise its option to order eight more A321neos. **PAL** will take delivery of its 30th **Airbus** in November. It is currently scheduled to take 10 aircraft in 2015 and another 10 in 2016. **PAL** indefinitely deferred the planned opening of new routes to Europe, and will focus on its profitable routes to North America due to a shortage of long-haul aircraft in its fleet. It has a surplus of short- and medium-haul aircraft for its current domestic and regional routes. **PAL** is working on a plan to return to profitability after two consecutive years of losses and it may search for a strategic partner.

**Boeing** booked the loss of 26 737s, two 747s and 15 787 orders in September. **GECAS** cancelled its only two 747-8F orders, which were placed in July 2011. **Garuda Indonesia** exchanged four outstanding 737-800NG orders for four 737 MAX 8s, when it purchased 46 new 737 MAX. **Boeing** deleted the four 737 from its Next Generation order total. **American Airlines** dropped two of the 100 737-800s that it ordered in July 2011. **Boeing** announced **Air Berlin's** cancellation of all of its 15 787-9 orders, along with 18 of its 20 outstanding 737-800 orders in September. The 787 delivery positions were apparently snapped up by an **Undisclosed Customer**. **Aviation Capital Group** dropped two 737-700 orders that it placed in 2008. The lessor has one more -700 on order. **Copa Airlines** ordered four -800s in December 2013 as an unidentified customer however the order was officially announced in September. **Avia Capital Leasing** switched one 737-900ER order to one 737-800. **Lion Air** exchanged three 737-900ER orders for three -800 orders. **Boeing** announced the various customers for 737s when they were delivered during September, including one -800 for **Hainan Airlines**, one -800 to **China Eastern Airlines**, two -800s for **Xiamen Airlines**, and one -800 for **Shandong Airlines**. **Air China** was

**Sukhoi Superjet Orders.** **MChS Rossii, Russia's Ministry of Emergency Situations** ordered eight Sukhoi Superjet 100s (SSJ-95LR). The ministry is responsible for dealing with natural and man-made disasters. It also manages civil defense and search and rescue. Two of the airplanes (SN 95061 & 95069) have already been built. **Sukhoi** won orders for three SSJ100s from an undisclosed customer in Laos and 10 orders from an unnamed Indonesian company. The **Government of Vietnam** signed a memorandum of understanding to provide a number of SSJ100s to its two largest airlines, **Vietnam Airlines** and **VietJet**.

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also disclosed as the customer for one 777-300ER that was delivered in September. **China Eastern Airlines** ordered 20 777-300ERs in December 2012 as an unidentified customer; the first one was delivered in September.

**Etihad Airways** said it can transfer its **Boeing** 787 options to its associated carriers if they are needed in the future. **Etihad** Chief Commercial Officer **Peter Baumgartner** responded to questions about **Air Berlin's** cancellation of its orders for 15 787-9s, and 18 737-800s, with "the decision was not taken in any **Etihad** context." **Air Berlin** made the decision on its own. "We have options and purchase rights to accelerate or let partner airlines to participate in our order book," he said. **Etihad** owns 29 percent of **Air Berlin** shares. **Etihad** holds 12 options and 30 firm orders for the 787-10 and orders for 41 787-9s.

**Skymark Airlines** is negotiating to reduce the penalty it must pay **Airbus** after its failure to purchase six A380 superjumbo jets. In July, the airline said there was "material uncertainty" over whether the company it could survive if it had to pay **Airbus** a "large amount." **Skymark** said it paid ¥26.5 billion (\$244 million) to **Airbus** for the A380s and this was more than the airline's market value. The deposits might not be returned, and the carrier could face as much as ¥70 billion more in penalties. **Airbus** terminated the \$2.5 billion order for six A380s in July. The decision to cancel the orders was made after **Skymark** said it needed to alter plans for introducing the plane because of a weaker yen and competition.

**Flybe** deferred four **Embraer** E175 orders until 2018 and cancelled its last 20 E175 orders, as part of a deal to buy 31 **Bombardier** Dash 8-Q400s from **Republic Airlines** in a deal brokered by **Embraer**.



**Air Lease Corporation** signed two more twelve-year lease agreements for new **Boeing** 777-300ERs with **EVA Air**, Taiwan. The aircraft will be delivered in 2016 and 2017 and will come from **ALC's** order book with **Boeing**. **EVA** has now leased four new 777-300ERs from **ALC**.

**BOC Aviation** placed two **Boeing** 777-300ERs with **EVA Airways**. They will be delivered in early 2017. **EVA** became one of **BOC's** first customers, when it leased two **Boeing** 767s in 1994. **EVA Air's** Chairman **K. W. Chang** said the airline would also take delivery of 12 **Airbus** A321s from **BOC** in the next two years. **BOC Aviation** said it was the leading Asia-based aircraft leasing company and has a portfolio of 246 owned and managed aircraft operated by 58 airlines worldwide. It has another 194 aircraft on firm order as of September 30, 2014. The company is owned by **Bank of China** and said it has one of the youngest fleets in the industry with an average owned aircraft age of less than four years.

**The Bank of Boeing.** Some critics of the **Export-Import Bank** complain that the 80-year-old, government-owned bank unfairly subsidizes **Boeing**, the largest beneficiary of bank assistance, and the foreign airlines that can accept **Ex-Im Bank** financing. The **U.S. Congress** voted for a nine-month extension to the bank's charter, instead of a longer term. **Boeing**, other exporting companies, the **Obama Administration** and the bank's congressional backers, wanted a five-year reauthorization of the charter to provide certainty and stability to the foreign buyers of U.S. goods that receive the bank's loans and other assistance. Bank President **Fred Hochberg** said the bank would pursue a long-term agreement with conservative lawmakers who want to shut down the bank. Conservatives are led by **House Financial Services Committee Chairman Jeb Hensarling**, R-Texas, who criticized the bank as

corporate welfare and complained that the bank mostly helps large multi-national firms that don't need the government's assistance. **Boeing** commented, "Congress has left thousands of small, medium and large U.S. exporters and their workers in limbo until the middle of next year and this will likely negatively impact U.S. sales to foreign customers." Representative **Hensarling** charges may be true, but **AVMARK** finds it odd that a political party closely linked to big business would want to kill this golden egg laying goose. The bank loans money to foreign buyers of U.S. products, and offers insurance and financial assistance to domestic exporters. Last year, **Ex-Im** provided \$27.7 billion in export assistance and was self-funding, so taxpayers do not subsidize the bank. The bank earned a \$1.1 billion profit that went directly to the Treasury. The bank pays for its operations through interest and fees on its assistance. U.S. international carriers have a valid complaint that their foreign competitors can take advantage of **Ex-Im Bank** financing and access to low interest rates. However, since aircraft pricing and financing are closely held secrets, it is difficult to judge the validity of the claims.

**AerCap Holdings N.V.** completed 134 aircraft transactions and signed lease agreements for 84 aircraft in the third quarter of 2014. The company delivered 26 aircraft under lease agreements and purchased nine new aircraft, including one **Airbus** A321-200, three **Boeing** 737-800s and five **Boeing** 787-8s. **AerCap** also executed sale and part-out transactions for 15 aircraft, including, one A300-600F, one A340-300, eight 737 classics, one 767-300ER and two MD-11s from its owned portfolio. It also parted out one 737 Classic and one A320-200 from its managed portfolio. The leasing company signed financing transactions for \$1.5 billion, including its previously announced \$800 million private offering. So far this year, **AerCap's** completed financing transactions amounted to \$8.9 billion. At the end of the third quarter, **AerCap** held approximately 1,680 aircraft in its portfolio that were either owned, managed, or under contract to purchase.

**Bangkok Airways**, Thailand, raised 13 billion baht (\$423 million) in an initial public offering (IPO) in October. The company sold 520 million shares at 25 baht apiece. The IPO was oversubscribed by more than 150 percent, illustrating Thailand's oldest private airline's potential. The carrier will use as much as 9.5 billion baht of the proceeds to buy 18 new airplanes from **Airbus** and **Boeing** through 2017. Another 1.5 billion baht will be invested on aircraft engines and parts. The remaining 2 billion baht will be used to construct new maintenance facilities in Bangkok and improve the company's airport at Koh Samui. CEO **Puttipong Prasarttong-osoth** commented that "earnings in the first half were severely affected by the poor situation in the tourism industry caused by political instability. We see very encouraging signs and expect better performance in the second half." **Bangkok Airways** began flying in 1968, and currently serves 20 major domestic routes and several overseas destinations including the Maldives, Myanmar, and Singapore. It operates 10 A319s, nine A320s and eight ATR 42s and ATR 72s. The airline said it has 18 new planes on order, but neither manufacturer lists **Bangkok** as a customer. It is possible the aircraft will be leased from third parties.

## Engines

**EasyJet** ordered 54 **CFM International** CFM56-5B engines to power the 27 **Airbus** A320ceo (current engine option) aircraft it bought. They are scheduled for delivery from 2015 to 2018. **CFM** valued the firm engine order at more than \$560 million at list price. **EasyJet** has been a **CFM** customer since 1995 and its entire fleet is powered by CFM56 engines. The airline currently operates 226 CFM56-5B-

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powered A320-family aircraft. Earlier this year, the airline selected the advanced LEAP-1A for its new fleet for A320neo aircraft.

**Norwegian** has selected **Rolls-Royce** Trent 1000-TEN engines for the nine additional **Boeing** 787-9s that it will lease from **ILFC**. **Norwegian** will operate 17 owned and leased Trent 1000-powered Dreamliners. All of the engine sales were accounted for in the **Rolls-Royce** orderbook. In addition, the airline has ordered long-term **TotalCare** service support for engines powering the nine aircraft, worth \$440 million.

## Airline News

**More on Lufthansa's Jump Subsidiary.** The new long-haul, low-cost airline, **Jump** will be launched in the third quarter of 2015 with three high-density A340-300s which will seat around 300 passengers. Chief Commercial Officer **Jens Bischof** said, "Jump is an adapted platform where we fly according to the market needs – no first class, relatively small business class, premium economy and economy." **Lufthansa** will install its newest business, premium economy and economy seats on 14 of its 19 A340-300s over a non-specified time line. **Jump** will be based at the Frankfurt airport. To lower costs, **Lufthansa** negotiated a roughly 20 percent cut in the expenses of catering, labor, maintenance, and airport fees, Mr. **Bischof** reported. Capital costs were cut to near zero by using older A340s that have been written down. **Jump** may serve destinations such as Chennai, the Seychelles and Tampa. It will not be part of **Lufthansa's** new long-haul, low-cost subsidiary that was outlined in its "Wings" plan. Mr. **Bischof** calls this a "second line of defence" against the likes of the Gulf carriers, **Turkish Airlines** and expanding the European low-cost carriers. The new intercontinental low cost carrier is still in development; it will be a new brand, with different ground and on-board product, and different staffing, Mr. **Bischof** said. "Wings" will be based in Germany and operate from a base in the western part of the country. He promised that "We aren't doing tricks like hiring in Ireland, [or] going through an employment company and trying to let them fly from Germany," like **Norwegian** has done.

**Lufthansa** is negotiating with **Turkish Airways** to possibly put its "Wings" low-cost, long-haul operation under auspices of their **SunExpress** joint-venture. Chief Executive Officer **Carsten Spohr** described the talks as "progressing nicely." The German flag carrier's supervisory board will decide on the possible alliance in the first week of December, he said. "We can do it alone, but I believe a partner such as **Turkish Airlines** will add value to it," Mr. **Spohr** said. **SunExpress** would provide "the lowest cost" if the plan goes ahead, he said. **Lufthansa** would have to add six to seven aircraft if the plan solidifies. He is looking at A330s or **Boeing** 767s. **Turkish Airlines** is considering **Lufthansa's** proposals, but management said that nothing is concrete yet. It is confusing that **Lufthansa** would launch two long-haul LCCs in one year, each with a different aircraft type and brand name.

**Emirates** signed a 10-year management accord with **TAAG Angola Airlines** that will allow the Gulf carrier to expand in Africa. **Emirates** will work with Angola's national airline and its government to

**CFM International's** LEAP-1A/-1C engine variant flew for the first time on October 6, attached to the wing of **General Electric's** modified 747-400 flying testbed at **GE Aviation's Flight Test Operation** in Victorville, California. This starts the latest phase of testing for the advanced engine program. **CFM** said the engine behaved well and completed multiple aero-mechanical test points at various altitudes during the nearly three-hour first flight. Over the next several weeks, the engine will complete a comprehensive test schedule that will gauge engine operability, stall margin, performance, and acoustics. The LEAP-1A/-1C variants are on track for engine certification in 2015, the company stated.

create a business plan and devise strategies for the carrier's fleet and network, the Gulf carrier said in a statement. **Emirates** will appoint four senior managers to work for **TAAG**, but will not buy equity. **Sheikh Ahmed bin Saeed Al Maktoum**, **Emirates** CEO, said the airline will provide deeper reach and better connectivity for our passengers in Central and South Africa, and **TAAG** passengers will benefit from his airline's global network. **Emirates** has not invested in equity partnerships, except briefly in **SriLankan Airlines**, and has not joined a worldwide alliance, except for a deal with **Qantas Airways**. Its rival **Qatar Airways** joined the **oneworld** alliance, and **Etihad Airways** has eight equity partnerships. **Emirates** offers more than 160 flights a week to Africa, including daily service to Luanda, Angola. The airline sees "huge potential" in Africa and will continue to expand there by opening new routes, upgrading aircraft and exploring agreements with established carriers, **Sheikh Ahmed** said.

**IATA Posts October Jet Fuel Prices.** The association updates the world's average jet fuel price each week. On October 17, the average price of fuel was \$2.441 per gallon, 10.1 percent lower than the October price of \$2.687. It was also 17.6 percent less than in October 2013. The price of fuel is affected by location. It was only \$2.353 in the Middle East region and was as high as \$2.564 per gallon in Latin America. Fuel is now cheaper in Europe at \$2.515 per gallon than it is in North America at \$2.534. Both areas have seen fuel costs drop by 18 percent or more since last year. **IATA** forecast that the global airline industry's fuel bill will total \$122.9 billion in 2014. This was a decrease of \$7 billion over 2013.

**FastJet to Add Airbus A319s.** It currently operates three A319s, and is negotiating with leasing companies about adding as many as 13 by the end of 2015, Chief Executive Officer **Ed Winter** said. **FastJet** wants to open bases in Kenya, Zambia and Zimbabwe next year, and expand its operations in Tanzania. It intends to operate seven A319s from its home base in Dar es Salaam, Tanzania, and to station three planes in Zambia, two in Zimbabwe, and one aircraft in Kenya. **FastJet** is discussing the lease of two A319s from **ICBC Leasing**, China, to replace aircraft that are due for return to **Volito Aviation Services**. The carrier plans to establish the first pan-African discount network and it will focus on East Africa for the foreseeable future. It will then expand west to Angola and Ghana, and south to South Africa and Uganda. By 2018, it expects to operate up to 34 jets. The airline wants to negotiate a code-share deal with **Emirates**.

**New Chinese Airlines. Fuzhou Airlines**, based in the capital of Fujian province, is waiting for the approval of the **Civil Aviation Administration of Aviation (CAAC)**. It was slated to start operations in October, according to insiders. The plan to establish **Fuzhou Airlines** was approved by **CAAC** in February, and the **International Air Transport Association (IATA)** issued a two-letter code "FU" and a three-unit code "666" for the airline. The airline is partially owned by **Hainan Airlines**, which is providing three **Boeing** 737-800 jets as part of the investment. Another two will be leased from **Hainan** as well. The first 737-84P/W (SN 36782) was handed over in early October. The airline will offer services to nearly 20 cities. **Fuzhou Airlines** is also owned by the **Fuzhou State Asset Investment Holding Co.**, **Century Golden Resources Group** and **Ningbo Ruitong Network Technology**.

**Guangzhou-Based Low-Cost Airline, 9Air Co.** should receive its license from **CAAC** late this year. It leased two 737-8GP/Ws (SN 39819 & 39820) from **Transportation Partners**, and will take delivery of a third 737 from **Boeing** in December. It intends to expand its fleet to nine aircraft by late 2015 and to 60 by 2020, the airline said. **9Air** is partially owned by Shanghai-based **Juneyao Airlines**, **Elion**

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**Resources Group and Macrolink Group.** After it receives the approval to fly domestic routes, the company will apply for international routes.

**Tiger Airways Rescued.** Singapore Airlines will raise its stake in the low-fare carrier by 15 percent to make it a subsidiary. This will provide financial support to the unprofitable company after record losses. After turning some securities into shares and buying as much as S\$140 million (\$110 million) of additional stock, Singapore will hold about 55 percent of **Tigerair**. The low-cost carrier (LCC) recorded a loss of S\$161 million in the second quarter after selling its entire stake in **Tiger Australia Airways** to **Virgin Australia** for A\$1. Earlier this year the budget carrier ended partnerships in the Philippines and Indonesia. It subleased a dozen surplus A320s to **IndiGo**, India, and wrote charged off S\$99.3 million due to the transaction **Tiger** posted a loss of S\$182.4 million (\$143 million) in the quarter ending in September, down from a profit of S\$23.8 million in the same period last year, because of the charges associated with the sublease. Revenue dropped 10 percent to S\$146.7 million. The airline is ailing because of intense competition with a dozen budget airlines in the Southeast Asia region. Budget airlines are not able to make money from the rising passenger traffic, because their fares are too low and they are buying too many new aircraft. The five-year jet-buying frenzy will have to end as carriers take a more sober look at a region where they face the challenges of intense competition and inadequate infrastructure. Low-fare airlines account for more than 50 percent of seats to Singapore, where the dominant airline owns **Tigerair** and **Scoot**, a long-haul budget carrier. **Tiger Air's** CEO **Lee Lik Hsin** said in the statement, "We have resolved our excess capacity issues and we also stemmed further losses from overseas venture."

**As Previously Stated,** **Virgin Australia** bought full control of the ailing **Tigerair Australia Airways** from **Tiger Airways Holdings (Tigerair)**, Singapore, for just A\$1. When it announced the plan to buy the remaining 40 percent of **Tigerair Australia** from **Tigerair**, **Virgin** said it would cut growth in the low-cost subsidiary's fleet to

**Nigeria Has No National Airline** even though it is Africa's most populous nation with 170 million people living in it. The government is talking with private investors about setting up a new flag-carrier. In anticipation, Nigeria is rebuilding its airport infrastructure, at a cost of \$2 billion over four years. It is also building new airport terminals as demand for air travel grows, Aviation Minister **Osita Chidoka** said. The government wants to start the national carrier by 2018 and Mr. **Chidoka** asserted that "It will be commercially run. Conversations are on across many possible private sector organizations, both local airlines in Nigeria and then some international airlines." Since the country has not had a flag carrier since **Nigeria Airways** failed in 2003, most of its international traffic has been carried by the Gulf carriers or European airlines. **Arik Air**, Lagos, is the nation's biggest carrier with 26 aircraft, followed by **Aero Contractors**, **Dana Air**, **Med-View Airline**, and **Overland Airways**. Nigeria is also Africa's biggest economy, but it had to borrow \$500 million from the **Export-Import Bank of China** to fund construction of air terminals in four cities, Abuja, Kano, Lagos, and Port Harcourt. **China Civil Engineering Construction Corp.** won the contract to build the airport infrastructure. The government is also building 13 cargo airports for the export of perishable agricultural produce. The state has already provided about \$1 billion for the current construction, and another \$1 billion was set aside for dispersal over the next four years. Nigeria's passenger volume has exploded by 700 percent since 2003. Mr. **Chidoka** suggested that the government would privatize some airport operations. "It will most likely be airport management, things like that, collecting of revenues, managing lounges. We have to build infrastructure that matches our aspiration," he said.

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cope with ñongoing subdued consumer demand in the Australian domestic market.ð **Virgin Australia** bought the first 60 percent from **Tigerair** for A\$35 million (\$30.74 million) 14 months ago. **Virgin** and **Qantas** launched a bitter price war just when demand fell amid a faltering economy. The two reported combined losses of A\$3 billion (\$2.63 billion) in the 2013-14 financial year, so they declared a truce and started cutting capacity to drive ticket prices higher. **Virgin's** stake in **Tigerair** generated losses of A\$46 million for the year, and losses of A\$11.6 million in the past quarter. **Virgin Australia** CEO, **John Borghetti** announced, ñUnder this proposed transaction, we will benefit from the economies of scale and achieve profitability ahead of schedule by the end of 2016.ð

## Bankruptcy of the Month

**Virgin Atlantic**, which is jointly owned by **Sir Richard Branson** and **Delta Air Lines**, founded **Little Red** as a U.K. domestic feeder airline in March 2013. It connected passengers from Manchester, Edinburgh and Aberdeen to **Virgin's** long-haul flights out of **Heathrow**. The customers used **Little Red** as an affordable domestic carrier, and did not fly further on **Virgin**. Further, the airline did not generate enough traffic (39 percent load factor) to earn a profit. **Virgin Atlantic's** CEO, **Craig Kreeger**, complained that ñthe totally inadequate number of slots made available by the European Commission did not deliver close to **BA's** network position, even when supplemented by our own slotsé The time lag between [**British Airways's**] takeover of **bmi** [-**British Midland**] and our entering the market also meant **Little Red** initially faced an uphill battle to win recognition and convert customers to its services.ð **Sir Richard Branson** further explained, ñWhen the competition authorities allowed **British Airways** to take over **British Midland** and all of its slots, we feared there was little we could do to challenge **BA's** huge domestic and European network built through decades of dominance. We were offered a meager package of slots with a number of constraints on how to use them and we decided to lease a few planes on a short-term basis to give it our best shot. The odds were stacked against us and sadly we just couldn't attract enough corporate business on these routes.ð Faced with £300 million in losses from the **Virgin Atlantic** operation from 2009 and 2013, and little prospect that **Little Red** will make money, **Virgin** will pull the plug on the feeder. The Manchester service will be closed in March 2015, while the two Scottish routes will be continued until September 2015. **Little Red** wet-leases four A320-214s from **Aer Lingus**. Its parent, **Virgin Atlantic**, is ñon trackð to return to profitability by the end of this year, the company said. Some of **Little Red's** cabin crew will be transferred to **Virgin**.

## Technical

**Airbus Will Fit Lithium Batteries** in A350-900s as standard equipment starting in 2016. The airplane was certificated with the nickel-cadmium (Ni-cad) batteries last month. **Airbus** originally designed the A350 to accept lithium batteries, but it reverted to the older and more reliable Ni-cad batteries after **Boeing** had so many problems with lithium batteries in its 787 Dreamliners. A350 Program Chief **Didier Evrard** said, ñThere was a period when we weren't sure the certification requirement for a lithium solution would have been stable. We didn't want to take any risks.ð **Airbus** tested both battery types on its fleet of test A350s, but the fifth development aircraft, the certification standard model, was fitted only with nickel-cadmium batteries. Mr. **Evrard** commented, ñWe gave a little time to the authorities to review the certification requirements for a lithium solution. We didn't have to change our initial design ñ the certification basis was not changed.ð **Airbus** considers its lithium-battery design is absolutely safe and it can complete the certification work on a lithium option by 2016. **EASA**

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certificated the A350 to carry 385 passengers with the current exit door configuration, and up to 440 people with an optional exit.

**Spring Airlines**, Shanghai, China, will become the first Chinese airline to perform Sharklet wingtip retrofits of its existing A320 fleet. The airline received its first A320 with wingtips in September 2013. Since then, the operator has taken delivery of eight more wingtip-equipped A320s, and it decided to select Sharklets for all of its new deliveries. It recently decided to install Sharklets on the other 37 A320-214s in its fleet. Chairman **Wang Zhenghua** said, "We are willing to invest in new technologies that help us further reduce the operational cost of our all **Airbus** A320 fleet." **Airbus China** COO **Rafael Gonzalez-Ripoll** said, "We are delighted to see **Spring Airlines**, the first low cost carrier in China, to take another pioneering step this time to become the first Chinese airline for Sharklet retrofit. We will provide **Spring Airlines** with the strongest support for the retrofit and for the smooth operation of the airline's all **Airbus** fleet." The **Airbus Upgrade Services** business unit started its retrofit program in February 2013 and offers it for all A320 Family aircraft equipped with the latest standard wings.

**Aviation Partners Boeing (APB)** received **FAA** Supplemental Type Certification (STC) for Split Scimitar Winglets for three additional **Boeing** 737-800 configurations. Split Scimitar Winglets can now be installed on all versions of the **Boeing** 737-800 and 737-900ER. The remaining commercial and private variants of the 737 Next-Generation aircraft will be certified by May, 2015. The unique feature of the Split Scimitar Winglet is that it uses the existing **APB** Blended Winglet, but adds new aerodynamic scimitar tips and a large ventral strake. Split Scimitar Winglets can save up to 60,000 gallons of fuel per aircraft per year. Since launching the program in early 2013, **APB** has taken orders and options for 1,657 systems. **APB** has sold nearly 8,000 Blended Winglet Systems over the last 10 years, and more than 5,300 Blended Winglet Systems are now in service with over 200 airlines.

**Luxair Luxembourg Airlines** ordered **APB** Split Scimitar Winglets for its three **Boeing** 737-800 aircraft. **Luxair** has operated next-generation 737s with Blended Winglets for over a decade.

## Cargo Pallet

**Aeronautical Engineers (AEI)** purchased **Boeing** engineering data to develop a passenger-to-freighter (P2F) conversion and combi conversion for the 737-800. The license agreement with **Boeing** also includes engineering data for the 737-900 variant. **AEI** will hold the Supplemental Type Certificate (STC) for the 737-800 P2F and the 737-800 combi conversions. **AEI** customers will now be able to access **Boeing** technical support at reduced costs compared with freighters converted without data licensed from the original manufacturer.

**Aeronautical Engineers (AEI)** redelivered eight passenger-to-freighter conversions during the third quarter of 2014. **AEI** redelivered one 737-300SF special freighter and seven 737-400SFs to various customers worldwide. It added the new eight-pallet CRJ200 SF freighter conversion to its product line with the first deliveries scheduled in mid-2015. The program was launched in February 2013, and **AEI** has sold 24 of the CRJ200 Special Freighters to five customers across North America, Asia and Europe at approximately \$3 million each. The CRJ200 SF can transport 6.7 ton and has a range of 1,200 miles. **AEI** started conversion work on the prototype in June 2014. It will offer the twelve-pallet 737-800SF and a 90-passenger combi conversion in 2017. **AEI** started initial development studies this year.

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**Airwork**, New Zealand, selected **AEI** to provide two firm and five optional 737-400SF eleven pallet P2F passenger-to-freighter conversions. They will be available to its aircraft, crew, maintenance and insurance (ACMI) and dry lease customers. The first aircraft, a 1992 model, was modified at **Commercial Jet Services** and was redelivered to **Airwork** on August 14. The second aircraft entered conversion at **Commercial Jet Services'** Dothan Alabama, facility and is scheduled for completion in February of 2015. **Airwork** recently committed to buy six 737-400 sister ships from a major international airline. It has received the first two aircraft and will take delivery of the next four over the next half year.

**PEMCO World Air Services (PEMCO)** redelivered the third **Boeing** 737-300 passenger-to-freighter-conversion to Beijing-based **China Postal Airlines EMS (CPA)**, under a five-aircraft agreement. The fourth 737-300 conversion is already underway. **CPA's** 15th PEMCO 737 freighter expected next year. The latest five conversions are being performed at **STAECO's** Jinan, Shandong, China, facility. **PEMCO** and **STAECO** have partnered on nearly 50 737-300 and 737-400 freighter modifications since 2006.

**Atlas Air Worldwide Holdings** leased one **Boeing** 747-8F and one 747-400F to **Polar Air Cargo Worldwide** which will be ACMI operated for **DHL Express**, the world's leading international express shipping company. The 747s will carry freight for **Polar's** other customers as well. Operations began in late October. **Polar's** express network now consists of five 747-8Fs and seven 747-400Fs, in ACMI service on behalf of **DHL** and other **Polar** clients. **Atlas** will continue to operate a fleet of **Boeing** 767 freighters in ACMI service for **DHL**, with the last of 11 aircraft joining the operations by the end of January 2015.

#### **Boeing's World Air Cargo Forecast (WACF)**

projected that air cargo traffic will grow at an annual rate of 4.7 percent over the next 20 years. Global air freight traffic is expected to more than double by 2033. The world's air cargo traffic took a hit after the global economic downturn of 2009 and continued to suffer as a result of lackluster commodity trade growth that was often serviced by the air cargo market. The market began to see growth again in second quarter of 2013 reaching 4.4 percent for the first seven months of 2014 compared to the same period a year earlier. If this trend continues, 2014 will be the highest growth year for the air freight industry since 2010, **Boeing** said. Asia-North America and Europe-Asia will continue to be the dominant world air cargo markets with the most traffic volume. Intra-Asia, domestic China and Asia-North America markets are expected to have the fastest growth rates over the next 20 years. The world freighter fleet is expected to grow with deliveries of 840 new factory-built airplanes and 1,330 passenger-to-freighter conversion airplanes to carry the growing traffic. More than 52 percent of those deliveries are expected to replace retiring airplanes and the remainder used for fleet expansion.

#### **International Air Transport Association (IATA)**

said air freight demand is improving after several years in the doldrums. International freight volumes are expected to increase at a compound annual growth rate of 4.1 percent over the next five years. Growth has averaged just 0.63 percent per year since 2011. More than \$6.8 trillion worth of goods, equivalent to 35 percent of total world trade by value, is expected to be transported by air freight in 2014.

## **Military Market**

**Airbus Defence and Space's** first A400M airlifter for the **German Luftwaffe** completed its maiden flight on October 14, and it will be delivered in November. A400M Atlas (SN 018) took off from the

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company's facility at Seville, Spain, and flew for nearly five hours before returning. Final assembly of the transport started early this year. It was rolled out and performed the first ground run of its four **Europrop International** TP400-D6 turboprop engines in late September. Germany has 52 more A400Ms on order, which will replace its ageing C-160 Transall fleet. The A400M can carry twice the load of its predecessor over intercontinental distances at speeds comparable to more expensive jet aircraft, but still land on short or unprepared airstrips close to the scene of military or humanitarian action, **Airbus** said.

**Embraer Rolled Out the First KC-390 Prototype** from the production hangar at Gavião Peixoto, Brazil, on October 21. Now that the military transport has rolled out, it will perform important ground tests prior to its first flight, which is planned by the end of this year. Initial systems evaluations will lead to the first engine run, and then to the ground vibration tests and the other ground tests, **Embraer** said. This aircraft is the first of two prototypes that will be used in the development, ground, and flight tests leading to certification. The KC-390 is an **Embraer/Brazilian Air Force (FAB)** joint project to build a tactical military transport and aerial refueling airplane. The KC-390 will offer significant advances in technology and innovation for the Brazilian aeronautics industry. The aircraft is designed to establish new standards in its category, with lower operating costs and the flexibility to perform a variety of missions: cargo and troop transport, troop and cargo air delivery, aerial refueling, search and rescue, and combating forest fires, among others, **Embraer** said. Aeronautics Commander, Lieutenant-Brigadier **General Juniti Saito** stated, "The KC-390 will be the backbone of the **FAB's** air transportation network. It will be able to operate in both the Amazon and Antarctica. The jet engines give the aircraft enormous agility in fulfilling all of its missions, faster and better." **Embraer** forecast a potential market for 700 aircraft in the KC-390's category over the next 15 years. The plane is being touted as a replacement for the venerable **Lockheed C-130 Hercules**. **Paulo Gastão**, Program Director for the KC-390, said, "all the missions currently handled by the Hercules are being addressed by the **Embraer** product development team, beyond the more traditional missions. One area we think the KC-390's speed and range will be very attractive will be as a Special Forces delivery/support aircraft." The **FAB** signed a series production contract for the delivery of 28 KC-390 aircraft and associated initial logistic support. It will also buy the two prototypes after they are brought up to production standard configuration. Other countries currently have intentions to purchase 32 additional aircraft.

**The Australian Government** said it would buy another two and possibly up to four **Boeing C-17A Globemaster III** transports for the **Royal Australian Air Force (RAAF)** on October 3. Defence Minister **David Johnston** said the purchase process began with a request for pricing and availability through the **U.S. Government's Foreign Military Sales (FMS)** program. The decision to buy the latter two C-17s would depend on the outcome of Australia's 2015 Defence White Paper and Force Structure Review process. Mr. **Johnston** said, "Since the first delivery in 2006, we have seen the C-17A Globemaster perform exceptionally well at the forefront of Australia's military operations and humanitarian work. Recent global events have seen Australia's national capabilities like the C-17A

**The Royal Air Force's** first two of 22 **Airbus A400M Atlas** tactical transports (SN 015) completed its maiden flight on September 1, with a five hour sortie. The **RAF** is due to receive its first two Atlas in October or November. This is a month or two delay from a scheduled delivery date in late September. **Airbus** said four A400M would be handed over this year, with the last to be built in mid-2018. The U.K.'s Atlas fleet will be based at **RAF Brize Norton**, and will replace **Lockheed Martin C-130Js** which will be retired in 2022.

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come to the fore to assist our friends and allies. The aircraft is also currently supporting Australian and Coalition forces in Afghanistan and the Middle East, providing a military long-range, strategic heavy airlift capability between Australia and the world. Mr. **Johnston** said in August that the requirement for additional C-17s, as well as two more **Airbus Defence & Space A330 MRTT**-Multi Role Tanker Transports were a ñno brainer. The **RAAF** already operates six C-17As. The first four aircraft were ordered in early 2006, with the first delivered in November 2006 and the fourth in August 2008. The fifth and sixth aircraft were ordered in 2010 and 2011 respectively, and each was delivered a year after the order. **Boeing** is building 10 ñwhite tailö aircraft on speculation. India also expressed interest in adding to its fleet of 10 C-17s.

**Boeing's First KC-46 Test Plane** is expected to fly in late November or early December, after a two month delay. **Jim Eisenhart**, director of business development for the tanker program, said **Boeing** remains on track to fulfill its contract requirement of having 18 tankers built and ready to deploy by late 2017. The 767-based tankers will roll off the commercial assembly line in Everett, and then be moved to the **Everett Modification Center (EMC)** at **Paine Field** where the military systems will be installed. This is the building that **Commercial Airplanes** mechanics performed the extensive rework on the early 787 Dreamliners. The two programs will share the facility for an unspecified period of time. **Boeing** struggled to install the complex wiring bundles on the first four test planes, which were built earlier this year and parked on the ramp. Mr. **Eisenhart** explained the KC-46 tanker transport has approximately 1,800 wire bundles while the civil 767 is fitted with 700 wire bundles. ñThat level of complexity was what drove the wiring challenges,ö he said. In July, the company posted a \$425 million charge for the expense of removing and reinstalling wiring on all four aircraft as well as additional engineering work. Now the first aircraft is ñ97 percent complete,ö Mr. **Eisenhart** said. The remaining three test aircraft are still only 60 to 70 percent finished. The first test aircraft will fly in December, but will not be fitted with the boom and drogue refueling systems, a refueling-operator station, military avionics, night vision and missile-defense systems. The second plane will fly in April 2015 and will be the first real tanker with all the military gear installed. **Boeing** intends to offer the KC-46 to foreign governments, in Europe and Asia, in competition with the **Airbus A330 MRTT**.

**The Russian Air Force** will receive its first **Ilyushin Il-76MD-90A** airlifter by the end of the year. The first of the type flew for 4 hours, 20 minutes from the **Aviastar SP** production site in Ulyanovsk, Russia, on October 3. The aircraft's crew tested its general handling, engine performance and other systems during the sortie, **Aviastar** said. Soon, the **Perm PS-90A-76**-engined transport will be test flown by **Air Force** pilots, and will be transferred to Russia's defence ministry. **United Aircraft** has a contract to deliver 39 of the new-generation Il-76MDs transports to the **Russian Air Force**. The type is also a candidate for the use as an aerial refuelling tanker. Russia's **Federal Security Service** and **Interior Ministry** may place further orders for the MD-90A variant. The updated Il-76 is equipped with new glass cockpit avionics, and the latest generation of PS-90 engines. It can carry a maximum payload of 60 tons and has a range of 2,760 miles, near the capability of the **Boeing C-17**.

**The Government of Mexico** acquired a VIP Boeing 787-8 Dreamliner for operation by the **Fuerza Aérea Mexicana** (Air Force). The aircraft (SN 40695, XC-MEX) will be configured for head of state and other VIP transport duties. It first flew in October 2010 as the sixth and final **GE GENx-1B** powered test aircraft, and was delivered to the **FAM** in June. The **FAM** is the first military operator of the 787. Pre-delivery cabin outfitting is now being conducted by **Associated Air Center** in Dallas, Texas, and

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the plane will be re-delivered in 2015. The **Fuerza Aérea Mexicana** already operates two 737-300s and one 757-200 as VIP transports. **Boeing** has not officially announced the Dreamliner sale, but it did list one GE-powered 787 sale to an **Unidentified Customer** in July 2013. The deal to buy one of the test aircraft has been in the works since 2011, and it was purchased by the government of former president **Felipe Calderón Hinojosa**. The Mexican press is in a tizzy about the actual cost of the new Dreamliner. The list price for a standard airline configured 787 ranged from \$212 million to \$289 million dollars depending on the model. The presidential jet was touted as "the most electronically sophisticated aircraft ever to be built by any aircraft manufacturer, with navigational aids and security systems purportedly surpassing those on board [U.S.] **Air Force One**." Some Mexican sources originally put the price tag at a \$750 million dollars. Other sources lowered the purchase price to \$350 million, but in 2012, an industry observer said that the VIP 787 purchase was tied to **Aeromexico's** December 2012 order for six 787-9s and that training of pilots, engineers and mechanics will be performed by **Aeromexico**. This source said that the government would pay \$139 million for the airplane. The cost of the interior, electronics and security equipment was not known and could boost the total by a significant sum. **Boeing** is finding it tough to sell white-tail, early production 787s to airlines. The bargain basement price offered for the last three test 787s is well known, because the planes are overweight, but are fit for VIP operations.

**Boeing Delivered the 18th P-8A Poseidon** to the U.S. Navy in October, ahead of schedule, **Boeing** proudly stated. The P-8A departed **Boeing Field** for **Naval Air Station Jacksonville** in Florida, and was **Boeing's** fifth P-8A delivery this year. Earlier this summer, the VP-5 "Mad Foxes" were deployed to **Kadena Air Base**, Japan. The Mad Foxes are currently conducting operational missions. The Navy has contracted to buy 53 P-8As, out of a planned purchase of 108 aircraft. The MMA-Multi-Mission Aircraft will replace the approximately 130 **Lockheed P-3 Orions** in its fleet.

**Airbus Defense and Space** delivered the 18th HC-144A Ocean Sentry maritime patrol aircraft to the U.S. Coast Guard. The Ocean Sentry is based on the **Airbus CN235** tactical airlifter, of which 29 countries operate more than 235 units. The latest HC-144A will join a fleet operating from **Coast Guard Air Stations** in Cape Cod, Mobile, and Miami.

## AIRCRAFT DELIVERIES & SALES

### Airbus

**Airbus A319.** Four A319s were delivered in September, including two **Airbus Tianjin Final Assembly Line (FAL)**-built -115Ws (SN 6144 & 6160) to **China Eastern Airlines**. **Z/C Aviation Partners** took delivery of two more -115/Ws (SN 6263 & 6277) and leased them to **American Airlines**.

**Airbus A320.** **Airbus** delivered 26 A320s during September, including 12 to Chinese airlines. **China Eastern Airlines** accepted one -232/W (SN 6180) and one -214/Ws (SN 6260). **Tianjin FAL**-built -214/W (SN 6151) was delivered to **China Aircraft Leasing Co. (CALC)** and was leased to **China Eastern**. **Spring Airlines** leased -214/W (SN 6231) from **SMBC Aviation Capital** and leased two -214/Ws (SN 6218 & 6220) from **AWAS**. **Hong Kong Airlines** acquired one -214/W (SN 6246), and **Air China** received **Tianjin FAL** built -214/W (SN 6169), and -214/W (SN 6251). **BOC Aviation**

leased two ex-**Qantas/Jetstar** -232/Ws (SN 6198 & 6212) to **Beijing Capital Airlines**. **Qingdao Airlines** leased -214/W (SN 6259) from **GECAS**. **BOC Aviation** leased the first two of 20 -232/Ws (SN 6223 & 6278) aircraft to the **TATA-SIA Airlines** joint-effort named **Vistara**. Another three are due this year. **AWAS** leased a fourth new -214/W (SN 6242) to **VietjetAir**. **AirAsia** received -216/W (SN 6240) and leased it to **Thai AirAsia**. **Indigo** accepted two -232/W (SN 6275 & 6289) and **ICBC Financial Leasing** leased one -214/W (SN 6270) to **Garuda/ Citilink**. **Thai Smile** leased its ninth new -232/W (SN 6254) from **AWAS**. **SMBC Aviation Capital** leased one -214/Ws (SN 6257) to **Vanilla Air**, Japan. **Avianca** received -214/W (SN 6209), and **Etihad Airways** accepted its 10th -232/W (SN 6226). In Europe, **Airbus** delivered the 72nd -214/W (SN 6265) to **Luft-hansa**. **EasyJet** took delivery of its 73rd -214/W (SN 6267), and **Wizz Air Hungary** acquired one -232/W (SN 6235).

**AWAS** delivered on lease a second new -233/W (SN 6288) to **Volaris**, Mexico, in October. The aircraft came from **AWAS'** direct order from the manufacturer. **Volaris** became an **AWAS** customer in 2013, when the lessor acquired one A320 in the airline's fleet from another company. **AWAS** purchased new -232/W (SN 6136) from **Tigerair Australia** and long-term leased it to **Jetstar Pacific Airlines**, Vietnam. The airplane flew for the first time in June and was stored in Toulouse.

**Tiger Airways (Tigerair)**, Singapore, agreed to sublease 12 surplus A320-232s to Indian budget airline **IndiGo** as part of a plan to cut capacity and trim costs in the face of stiff competition in Southeast Asia. Loss-making **Tiger** will make a one-off accounting provision of about S\$93 million (\$73 million) related to the aircraft. "Given the current over capacity situation in the industry, the 12 aircraft will be subleased at a discount to their original lease rates," the airline said. "This sublease agreement will significantly reduce the group's cash flow burden by about S\$162 million over the sublease periods" of three to four years, compared to the idling of these 12 aircraft, the airline stated. Most of the aircraft were previously operated by **Tigerair Philippines** and **Tigerair Mandala**, and were returned to the group after **Tiger** sold its Philippines unit to **Cebu Pacific** and closed its Indonesian operations. Three -232s (SN 5188, 5194 & 5228) were transferred from **Tigerair Philippines** to **Tigerair** recently, and nine **Tigerair Mandala** -232s (SN 4198, 4973, 5073, 5335, 5375, 5426, 5449, 5605 & 5662) have been stored at Kuala Lumpur since July 2014. The **Tigerair** A320s are fitted with **IAE V2527-A5** engines and 180 tourist seats, the same configuration as **IndiGo's** A320s.

**Airbus A321**. **Airbus** delivered 12 A321s in September, including six -231s (to **American Airlines** or its merger partner **US Airways**. **American** leased two -231s (SN 6227 & 6252) from **Avolon**, one -231 (SN 6256) from **CIT Aerospace**, one -231 (SN 6272) from **Aviation Capital Group**, and one -231 (SN 6271) from **AerCap/ILFC**. **US Airways** accepted one -231 (SN 6264). **Philippine Airlines** received one -231/W (SN 6253), and sold it to **GECAS** for lease back. **GECAS** leased -211/W (SN 6276) to **EVA Air**, and **Transasia Airways** accepted -231/W (SN 6294). **China Southern Airlines** received one -231 (SN 6261), and **Air China** leased -231/W (SN 6273) from **Air Lease Corp**. **Vietnam Airlines** acquired -231 (SN 6266).

**Avolon Capital Partners** leased two new -231/Ws (SN 6291 & 6295) to **Philippine Airlines** in October. These are the fifth and sixth A321s to be acquired by **Avolon Capital Partners**.

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**CIT Aerospace** leased used -231 (SN 3636) to **SriLankan Airlines**. It was the second of two A321s **CIT** delivered to the airline in 2014. **CIT** previously leased two A320s to the airline.

**Airbus A330.** **Airbus** delivered two -200s and six -300s in September. **CIT Aerospace** leased -243 (SN 1561) to **Virgin Australia Airlines**. The aircraft was powered by **Rolls Royce Trent 772B** engines and was the fourth A330 **CIT** had placed with the airline. **Hainan Airlines** received -243 (SN 1558), **Air China** accepted one -343E (SN 1563), and **Cathay Pacific** acquired -343E (SN 1557). **Avolon** leased one -343E (SN 1560) to **Garuda Indonesia**. This was the second of four -300s to be delivered to **Garuda**. **Korean Air** took delivery of -323W (SN 1556) and **Singapore Airlines** leased -343E (SN 1562) from **Meridian Aviation Partners**. **Intrepid Aviation Group** leased -343E (SN 1554) to **Skymark Airlines**. The airline will lease its fifth and final -343E (SN 1574) from **Intrepid** by the end of the year.

**Airbus A350.** **Qatar Airways'** first A350-941 (SN 006) took off from Toulouse, France, on October 16 for the maiden flight of a serial production A350. The plane will be delivered by December 10, said CEO **Akbar Al Baker**. The airline has 43 A350-900s and 37 of the larger A350-1000 models on order. The airline will put the A350 on the Doha-Frankfurt route, and will add seven more A350s to the fleet within 12 months. The type secured **European Aviation Safety Agency** certification at the end of September, and will win **Federal Aviation Agency** certification shortly. **Airbus** has sold 549 of the -900 variant out of a total of 750 across the A350 family.

**Airbus A380.** **Emirates** added its 52nd and 53rd -861s (SN 157 & 159) to its fleet in September. It sold -861 (SN 157) to **Amedeo** 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)**. **British Airways** accepted its seventh of 12 -841s (SN 161).

**Qatar Airways** took delivery of its newest flagship, -861 (SN 137), in September. It has nine more on order. 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. **Qatar** is the 12th carrier to fly the A380 and will fly it to London and Paris from 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. Its first A380 entered service on the Doha-London route early in October.

## Boeing

**Boeing 737 NG.** **Boeing** delivered 44 737s in September. **Lion Air** took delivery of four -9GPER/Ws (SN 39823, 39824, 39878 & 39880). The first two were leased to **Thai Lion Air**. **Southwest Airlines** received three more -8H4/Ws (SN 36909, 42527 & 42531) for a fleet total of 72. Seven airlines took two 737s each in September, including **China Eastern Airlines** which bought two -89P/Ws (SN 39738 & 41486) and leased them to **China Eastern Yunnan Airlines**. **Xiamen Airlines** received two -85C/Ws (39905 & 39911), and **United Airlines** acquired two -924ER/Ws (SN 44564 & 44565). **UTair Aviation**, Russia, accepted two -8LP/Ws (SN 41710 & 41841), and **Norwegian Air Shuttle** took delivery of two -8JP/Ws (SN 41129 & 41134). **WestJet** purchased two -8CT/Ws (SN 60123 & 60124) for a fleet total of 17, and has eight more on order. **Ryanair** bought its 349th and 350th -8MD/Ws (SN

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44686 & 44687). They were sold to **Aviation Finance and Leasing** and leased back. **Boeing** delivered one 737 each to four North American operators. **Delta Air Lines** received one -932ER/W (SN 31938), **American Airlines** took delivery of its 240th -823/W (SN 31202), **COPA Airlines** accepted its 36th -8V3/W (SN 44156), and the **United States Navy** purchased its 30th -8FV (P-8A, SN 42258). Nine 737s were delivered to leasing companies. **GECAS** leased one -86N/W (SN 41269) to **Hainan Air-lines**, one -86N/W (SN 43406) to **Solaseed Air**, and one -8U3/W (SN 41253) to **Garuda Indonesia Airways**. **Garuda** also leased -8U3/W (SN 41322) from **Air Lease Corp.**, which leased -89L/W (SN 47323) to **Air China**. **Aeroflot Russian Airlines** leased -8LJ/W (SN 41200) from **Avia Capital Leasing**, and **Dobrolet** leased -81D/W (SN 39441) from **AWAS**. **CIT Leasing** leased -8BK/W (SN 41563) to **Aerolineas Argentinas**. **Aeromexico** leased the first of three -852/Ws (SN 36699) from **Jackson Square Aviation**. **FlyDubai** took delivery of -8KN/W (SN 40269), and **Virgin Australia Airlines** acquired its 63rd -8FE/W (SN 40700). **Jet Airways** received -85R/W (SN 42804) and sold it to **Avolon** for lease back. **SilkAir** acquired -8SA (SN 44222), and the 29th -881/W (SN 44557) was delivered to **All Nippon Airways**. **Boeing** delivered the 72nd of 74 -838/Ws (SN 44575) to **Qantas**. **Air China** accepted one -89L/W (SN 41097), and sold it to **Shandong Airlines**, which also took delivery of one -85N/W (SN 41618). **Kunming Airlines** received its second of two -87L/Ws (SN 41112), and **Hainan Airlines** accepted one -84P/W (SN 39215).

**FLY Leasing Limited** signed agreements to purchase and lease back three new 737-800s with a leading Asian airline in October. **FLY** purchased the first aircraft, and the two remaining aircraft are due for delivery during the fourth quarter. **FLY** acquired 19 aircraft valued at more than \$800 million this year. **FLY's** acquisition of new aircraft on long-term leases, is coupled with its strategy of selling older aircraft, which lowers the average age of its fleet. The lessor is increasing the length of its leases and growing its revenues and profitability.

**Military 737s Delivered.** The third E-7A Peace Eagle Airborne Early Warning and Control (AEW&C) 737-7ES (SN 33963) was delivered to the **Turkish Armed Forces** in September. **Boeing** is scheduled to deliver the final aircraft in 2015. **Boeing** delivered the fifth P-8I Maritime Patrol Aircraft 737-8FV (SN 40614) to India on September 9 as part of its contract for eight aircraft to meet the **Indian Navy's** maritime patrol requirements.

**Avolon** leased the first of two 737-8MA/Ws (one is SN 43662) to **Aeroflot** in October.

**Boeing 747.** **Cargolux Airlines** accepted its 12th -8R7F freighter (SN 38077) last month. The airplane had been stored at Marana for six months before delivery. To date, **Boeing** has delivered 50 747-8 Freighters and 24 passenger 747-8Is.

**Boeing 767.** **Federal Express** took delivery of its fifth and sixth -3S2Fs (SN 42709 & 44377). The cargo airline has 44 more on order.

**Boeing** handed over the first of seven 747-89L Intercontinentals (SN 41191) to **Air China** in September. **Air China** is the first carrier in Asia to operate the passenger version of the new, fuel-efficient 747-8. The flag carrier of the People's Republic of China will use the 747-8Is to expand its international services. It has been operating 747s since March 1987. The 747-8 Intercontinental will bring double-digit improvements in fuel consumption and emissions over its predecessor, the 747-400, while generating 30 percent less noise, **Boeing** said. It is powered by **General Electric** GENx-2B engines. **Air China** took delivery of its 20th 777-300ER and its 70th 737-800 in September. It also has 15 787-9s on order.

**Boeing 777.** Boeing delivered nine 777s in September, including the seventh 777-FDZ freighter (SN 42299) to **Qatar Airways**. **Air Lease Corporation** took delivery of two -300ERs and leased the first, a -319ER (SN 44547) to **Air New Zealand** and the second, a -3FXER (SN 44548) was leased by **Etihad Airways**. **Air China** accepted its 20th -39LER (SN 44931), and **China Eastern Airlines** received its first of 20 -39PERs (SN 43269). **Emirates** purchased its 68th of 120 -31HERs (SN 41367), and **Turkish Airlines** acquired -3F2ER (SN 44118). **Garuda Indonesia** leased new -3U3ER (SN 29143) from **ICBC Leasing**. **China Airlines** took delivery of the airline's first 777-36NER (SN 41821). It was leased from **GECAS**. A second **GECAS** -36NER (SN 41822) was leased to **China** in late October. The Taiwanese flag carrier plans to introduce another two leased and six ordered -300ERs in the coming years. The airline's -300ER was configured to seat 358 passengers in a three-class layout, that features **Garuda's** new "Family Couch" seats in economy class. Three seats convert into a flat surface for rest and relaxation. **China Airlines** will launch -300ER operations to Hong Kong in October and will eventually introduce the airplane on transpacific routes, connecting Taipei with major cities in North America, including Los Angeles, San Francisco and New York.

**Boeing 787.** Boeing delivered 10 787-8s in September, including two 787-8s (SN 38480 & 42224) to **LAN Airlines** and two -8s (SN 35316 & 35319) to **AerCap/ILFC**. The company leased the first to **Thai Airways International** and the second to **Royal Jordanian**. These were both airlines' second Dreamliners. **Royal Jordanian** will lease a third 787 (SN 36112) this year and **Thai** will lease four more 787s (SN 35320, 36110, 38757 & 38759) from **AerCap/ILFC**. **Air Canada** received its fourth -8 (SN 35260), and **Kenya Airways** took delivery its fifth of nine -8s (SN 36042). **Air India** accepted its 17th of 27 -8s (SN 36289). Boeing delivered the second 787-9 (SN 34335) to **Air New Zealand** and the second -9 (SN 34524) to **ANA—All Nippon Airways**. **United Airlines** became the first North American carrier to take delivery of a stretched Dreamliner when it received -9 (SN 36401) in September. It has 25 more on order.

**Virgin Atlantic Airways** celebrated the delivery of its first 787-9 Dreamliner (SN 40956) in October. It was leased from **AerCap/ILFC**. The airline is the first European airline to take delivery of the 787-9 and plans to operate the airplane initially on its **London Heathrow** to Boston route. The airplane was named "Birthday Girl" referencing **Virgin's** 30th anniversary, and is the first of 16 787-9s **Virgin Atlantic** had ordered from **Boeing**. **Virgin Atlantic** is based out of London's **Gatwick** and **Heathrow Airports**, as well as Manchester and Glasgow airports, and operates a fleet of approximately 40 airplanes, including 12 747-400s which fly routes across North America, the Caribbean, Africa and Asia. The new 787-9s will replace two inefficient A340-300s and two A340-600s by the end of February 2014.

## Regional Jet

**Bombardier** delivered two CRJ900LR NextGens (SN 15330 & 15331) to **Delta Air Lines** in September. They were leased to **Endeavor Air**. **China Express** received CRJ900 NextGen (SN 15332). **American Airlines Group's** seventh and eighth of 30 enhanced CRJ900 NextGen aircraft (SN 15333 & 15334) was delivered in September. The aircraft will be operated by the group's wholly-owned subsidiary **PSA Airlines** under the **American Eagle** brand.

**Embraer.** **Skywest Airlines** took delivery of two more EMBRAER 170-200 LRs (E175) Enhanced (SN 17000421 & 17000425) in September. **Republic Airways** accepted two more E175s (SN 17000423

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& 17000424) for operation on behalf of **American Eagle**. **United Airlines** leased new E175 (SN 17000422) to **Mesa Airlines**. **BA Cityflyer** received one EMBRAER 190-100 SR (E190) (SN 19000674) and **Azul Linhas Aereas** accepted E195 (SN 19000677). In October, **GE Capital Aviation Services (GECAS)** leased one used EMBRAER 190 (SN 19000227) to **BoraJet Airlines**, Turkey, to help the carrier's fleet expansion. This is **GECAS'** first transaction with **BoraJet**.

**KLM Cityhopper B.V.** extended the leases of four E190s by for four years. The aircraft (SN 19000250, 19000279, 19000322 & 19000326) are owned by **Global Aircraft Fund I**, and managed by **Amentum**.

**Sukhoi Civil Aircraft Company** delivered SSJ-95B (SN 95048) to **Interjet**, Mexico in September.

**Sukhoi Civil Aircraft Company** signed a one-year lease agreement for three used Sukhoi Superjet 100s with **Red Wings**, Russia. The ex-**Moskovia Airlines** aircraft (SN 95008, 95010 & 95021) will be handed over by the end of 2014 and the leases can be extended. **Red Wings** will operate the SSJ100s from its base in Moscow to Ufa, Makhachkala, Chelyabinsk, Sochi and Mineralnye Vody. The lease agreement marked the first phase of the program to increase the Sukhoi Superjet fleet to 15 by 2017. The airline is committed to fly only Russian-built aircraft. **Red Wings Airlines** was established in 1999 and it operates scheduled and charter flights in Russia and abroad. It is expected to carry one million passengers this year.

## Turboprop Aircraft

**ATR** delivered one ATR 42-600 (SN 1014) to **FijiLink**, and one ATR 42-600 (SN 1015) to **Trans-Nusa Air Service**, Indonesia, in September. The carrier has options for three more ATR 42-600s. **AeroCentury Corp.**, an independent aircraft leasing company, purchased the new -600 and leased it back. **Aviation** leased one new ATR 72-600 (SN 1162) to **Quick Duck**, in Slovakia, for 10 years. **Azul Linhas Aereas** took delivery its 36th -600 (SN 1173), and **Wings Abadi Airlines** received two -600s (SN 1176 & 1179). **Wings** leased the latter -600 (SN 1179) to **Malindo Airlines**. **FireFly** accepted one -600 (SN 1178).

**Bombardier**. **Nok Air**, Thailand, took delivery of its second 8Q-402 NextGen (SN 4458) in September. The aircraft is configured with 86 seats. It was sold to **GECAS** and leased it back. **Falcon Aviation Services** leased new 8Q-402NG (SN 4454) to **Senegal Airlines** for one year. **Arik Air** purchased -402NG (SN 4465) and **WestJet Encore** bought -402NG (SN 4477).

**Viking** delivered one new Series 400 Twin Otter (SN 895) to **Barrick Servicios Mineros**, Chile. The **UAE AF's** modified -400 (SN 896) was delivered in September. **Ground Zero Solutions** received -400 (SN 904).

## Antiques and Other Junque

The **U.S. Air Force** sold 16 unused **Aeritalia** G222 twin-turboprop transport aircraft for scrap at 6 cents a pound, or a total of \$32,000. The **Air Force** bought 20 refurbished G222 tactical transports for the **Afghanistan Air Force** for at least \$486 million in 2010. The former **Italian Air Force** transports were parked in the weeds at **Kabul International Airport**, by 2013, because of persistent maintenance

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issues. The other four G222s are at **Ramstein Air Base**, Germany, and are waiting for disposal. The Afghan G222s flew only 200 of the 4,500 hours of training flights and missions specified under a **U.S Air Force** contract. Pentagon spokesman, Marine Corps Major **Brad Avots**, called the G222s "an interim solution to meet the medium airlift needs of Afghanistan" and said the contract was discontinued because it "was unable to fulfill mission needs." He said the aircraft were disposed of "to minimize impact on drawdown of U.S. forces in Afghanistan." The G222s were supposed to transport Afghan civilian officials and combat troops and conduct medical evacuations. They are being replaced by used **Lockheed Martin C-130Hs**, which are larger, more complicated to repair, more expensive to operate and cost more to buy than the G222s.

**Boeing Still has a Few 787s in Storage.** Three early-production 787-8s (SN 34487, 34491 & 34492) painted in **All Nippon** colors and two white-tail 787-8s (SN 34498 & 38464) were seen at **Paine Field**, Everett, Washington, in September. **Royal Air Maroc's** first of four 787-8s (SN 35507) and **Boeing's** fifth 787-8 test aircraft (SN 40694) are also at **Paine**. The manufacturer flew its third test aircraft (SN 40692) to **Boeing Field** for exhibition at the **Museum of Flight**. The **Saudi Ministry of Finance and Economy's** second VIP 787-8 (SN 40059) flew in June and is ready for its ferry flight to a completion center.

## Accidents and Safety

*From Aviation Safety Foundation*

**Air Labrador de Havilland Canada DHC-6-300 Twin Otter (C-GKSN, SN 493)** was damaged in a landing accident at **La Tabatière Airport**, Quebec, Canada, on September 28, 2014. No one was injured when the plane made a sharp turn which caused the tire to come off. The propeller blades impacted the ground and debris damaged the fuselage. The 38-year old plane may be repaired.

**ACSA-Air Century BAe Jetstream 32 turboprop (HI-816, SN 694)** was destroyed in a runway excursion accident at **Punta Cana International Airport**, Dominican Republic, on October 12, 2014. Three of the thirteen occupants suffered minor injuries. The airplane departed the runway and caught fire, which was extinguished by the fire services.

**Boeing Crushed and Sold for Scrap** the six 737-800 fuselages that fell into the Clark Fork River when a train derailed near Missoula, Montana, this summer. They included two -8H4s (SN 35973 & 42524), one -86N (SN 43420) for **GECAS/Nok Air**, one -823 (SN 31199) for **American Airlines**, one -85C (SN 39904) for **Xiamen Airlines**, and one -87L (SN 37620) for **Shenzhen Airlines**. The loss of the fuselages represented 1.25 percent of 737 production in 2014.

## **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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*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.

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## 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.

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*A Catalog of New and Used Commuter / Regional Aircraft*  
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**MARKET OVERVIEW**

Most dynamic and fastest growing segment in the world, using old generation propeller aircraft to transport 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                            | 56,155 lb            |
| Max Takeoff                         | 53,510 lb            |
| Max Landing                         | 22,875 lb            |
| Max Ramp                            | 10,325 lb            |
| Max Takeoff                         | 9,920 lb             |
| Max Landing                         | 40.53 lb / sq ft     |
| Max Ramp                            | 10.23 lb / cu ft     |

**Standard Equipment:** Right engine Propeller Brake, 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 Autopilot, Dual Computer (ADC), 1 CFZ 600 Automatic Flight Director, 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** 85-99 2.0

**Direct Operating Costs (\$ per block hour)**

| Utilization (Block Hours / Year)  |                |
|-----------------------------------|----------------|
| Average Stage Length (nm)         | 100 300        |
| Flying Operations                 |                |
| Flight Crew, Salaries / Expenses  | \$198 \$188    |
| Fuel, Oil, Taxes                  | \$173 \$162    |
| Other                             | \$3 \$3        |
| Aircraft Costs                    |                |
| Insurance                         | \$3 \$3        |
| Maintenance                       | \$478 \$415    |
| Depreciation                      | \$62 \$62      |
| Rentals                           | \$318 \$318    |
| Total Direct Operating Costs      | \$806 \$683    |
| Cost per Available Seat Mile - \$ | 12.33 8.65     |
| Cost per Airplane Mile            | \$5.67 \$4.44  |
| Cost per Seat Block Hour          | \$16.67 \$15.1 |

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.

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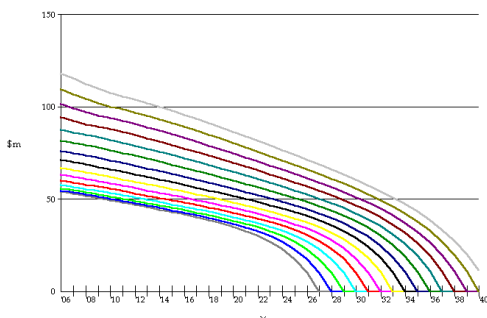
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TAV reports current fair-market values by year of build and projects the future value of 116 transport category aircraft. The future values are based on an economic model that projects the values based on the earning stream of approximately 130 different 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: Airbus A340-300      |                   |                   |                   |                   |                   |                   |
| Period                              | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 |
| <b>REVENUES (US\$)</b>              |                   |                   |                   |                   |                   |                   |
| Passengers                          | 49,328,754        | 49,270,739        | 49,212,559        | 49,154,213        | 49,095,701        | 49,037,189        |
| Freight & Mail                      | 8,879,176         | 8,868,733         | 8,858,261         | 8,847,758         | 8,837,226         | 8,826,714         |
| Other Revenue                       | 986,575           | 985,415           | 984,251           | 983,084           | 981,914           | 980,744           |
| <b>TOTAL OPERATING REVENUE</b>      | <b>59,194,505</b> | <b>59,124,887</b> | <b>59,055,070</b> | <b>58,985,055</b> | <b>58,914,841</b> | <b>58,844,647</b> |
| <b>VARIABLE EXPENSES</b>            |                   |                   |                   |                   |                   |                   |
| Fuel                                | 6,918,975         | 6,917,340         | 6,915,670         | 6,913,977         | 6,912,265         | 6,910,534         |
| Landing Fees                        | 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           |
| Pax Commissions                     | 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         |
| Food & Supplies                     | 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           |
| <b>TOTAL VARIABLE COST</b>          | <b>23,443,212</b> | <b>23,443,212</b> | <b>23,443,212</b> | <b>23,443,212</b> | <b>23,443,212</b> | <b>23,443,212</b> |
| <b>SEMI-VARIABLE EXPENSES</b>       |                   |                   |                   |                   |                   |                   |
| Crew Salaries & Expenses            | 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           |
| <b>TOTAL SEMI-VARIABLE COST</b>     | <b>5,765,410</b>  | <b>5,765,410</b>  | <b>5,765,410</b>  | <b>5,765,410</b>  | <b>5,765,410</b>  | <b>5,765,410</b>  |
| <b>TOTAL OPERATING COST</b>         | <b>29,208,624</b> | <b>29,208,624</b> | <b>29,208,624</b> | <b>29,208,624</b> | <b>29,208,624</b> | <b>29,208,624</b> |
| <b>OPERATING PROFIT OR LOSS</b>     | <b>29,985,881</b> | <b>29,916,263</b> | <b>29,846,446</b> | <b>29,776,331</b> | <b>29,706,116</b> | <b>29,635,902</b> |
| <b>D-CHECK ADJUSTMENT</b>           |                   |                   |                   |                   |                   |                   |
| Cumulative Hours                    | 4,830             | 9,650             | 14,459            | 19,257            | 24,045            | 28,833            |
| Cumulative Dollars                  | 315,000           | 0                 | 0                 | 0                 | 0                 | 0                 |
| <b>ADJUSTED CASH FLOW</b>           | <b>25,841,782</b> | <b>25,329,851</b> | <b>24,506,290</b> | <b>23,686,100</b> | <b>22,869,282</b> | <b>22,052,464</b> |
| <b>AIRCRAFT LIFE ADJ. CASH FLOW</b> | <b>25,841,782</b> | <b>25,329,851</b> | <b>24,506,290</b> | <b>23,686,100</b> | <b>22,869,282</b> | <b>22,052,464</b> |

| Profit & Loss Report                |                   |                   |                   |                   |                   |                   |
|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Aircraft Type: Airbus A340-300      |                   |                   |                   |                   |                   |                   |
| Period                              | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 |
| <b>FIXED EXPENSES</b>               |                   |                   |                   |                   |                   |                   |
| Station Overhead                    | 346,597           | 345,923           | 345,249           | 344,575           | 343,901           | 343,227           |
| Maintenance Burden                  | 176,295           | 351,824           | 526,586           | 700,581           | 873,810           | 1,047,039         |
| Other Overhead                      | 0                 | 0                 | 0                 | 0                 | 0                 | 0                 |
| <b>TOTAL FIXED COST</b>             | <b>522,892</b>    | <b>697,747</b>    | <b>871,835</b>    | <b>1,045,156</b>  | <b>1,217,711</b>  | <b>1,390,266</b>  |
| <b>TOTAL OPERATING COST</b>         | <b>31,464,497</b> | <b>32,185,749</b> | <b>32,903,601</b> | <b>33,618,052</b> | <b>34,329,104</b> | <b>35,039,155</b> |
| General & Admin. Allocation         | 1,573,225         | 1,609,287         | 1,645,180         | 1,680,303         | 1,716,455         | 1,752,607         |
| <b>TOTAL COST</b>                   | <b>33,037,722</b> | <b>33,795,036</b> | <b>34,548,781</b> | <b>35,298,355</b> | <b>36,045,559</b> | <b>36,791,762</b> |
| <b>OPERATING PROFIT OR LOSS</b>     | <b>26,156,782</b> | <b>25,329,851</b> | <b>24,506,290</b> | <b>23,686,100</b> | <b>22,869,282</b> | <b>22,052,464</b> |
| <b>D-CHECK ADJUSTMENT</b>           |                   |                   |                   |                   |                   |                   |
| Cumulative Hours                    | 4,830             | 9,650             | 14,459            | 19,257            | 24,045            | 28,833            |
| Cumulative Dollars                  | 315,000           | 0                 | 0                 | 0                 | 0                 | 0                 |
| <b>ADJUSTED CASH FLOW</b>           | <b>25,841,782</b> | <b>25,329,851</b> | <b>24,506,290</b> | <b>23,686,100</b> | <b>22,869,282</b> | <b>22,052,464</b> |
| <b>AIRCRAFT LIFE ADJ. CASH FLOW</b> | <b>25,841,782</b> | <b>25,329,851</b> | <b>24,506,290</b> | <b>23,686,100</b> | <b>22,869,282</b> | <b>22,052,464</b> |

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 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 | 65.62 | 69.95 | 74.86 | 80.37 | 85.52 | 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 | 66.25 | 71.17 | 76.66 | 82.32 | 88.24 | 94.91  | 102.84 | 111.03 |
| 2011 | 48.05 | 48.77 | 50.05 | 51.88 | 54.28 | 57.23 | 60.77 | 64.99 | 69.89 | 75.37 | 81.02 | 86.94 | 93.91  | 102.04 | 110.23 |
| 2012 | 46.80 | 47.52 | 48.80 | 50.63 | 53.03 | 55.98 | 59.51 | 63.71 | 68.60 | 74.07 | 79.72 | 85.74 | 92.91  | 101.24 | 109.47 |
| 2013 | 45.53 | 46.25 | 47.53 | 49.36 | 51.76 | 54.71 | 58.23 | 62.42 | 67.30 | 72.76 | 78.41 | 84.33 | 91.50  | 99.93  | 108.16 |
| 2014 | 44.24 | 44.96 | 46.24 | 48.07 | 50.47 | 53.42 | 56.93 | 61.11 | 65.98 | 71.43 | 77.07 | 82.99 | 90.26  | 98.79  | 107.02 |
| 2015 | 42.93 | 43.65 | 44.93 | 46.74 | 49.14 | 52.09 | 55.60 | 59.77 | 64.63 | 70.07 | 75.70 | 81.62 | 88.89  | 97.52  | 105.75 |
| 2016 | 41.60 | 42.32 | 43.60 | 45.41 | 47.81 | 50.76 | 54.27 | 58.43 | 63.28 | 68.71 | 74.34 | 80.26 | 87.53  | 96.16  | 104.39 |
| 2017 | 40.25 | 40.97 | 42.25 | 44.06 | 46.46 | 49.41 | 52.92 | 57.07 | 61.92 | 67.35 | 72.97 | 78.79 | 86.06  | 94.69  | 102.92 |
| 2018 | 38.89 | 39.61 | 40.89 | 42.70 | 45.10 | 48.05 | 51.56 | 55.71 | 59.86 | 64.69 | 70.31 | 76.13 | 83.40  | 92.03  | 100.26 |
| 2019 | 37.50 | 38.22 | 39.50 | 41.31 | 43.71 | 46.66 | 50.17 | 54.32 | 58.47 | 63.30 | 68.91 | 74.73 | 82.00  | 90.63  | 98.86  |
| 2020 | 36.09 | 36.81 | 38.09 | 39.90 | 42.30 | 45.25 | 48.76 | 52.91 | 57.06 | 61.89 | 67.50 | 73.32 | 80.59  | 89.22  | 97.45  |
| 2021 | 34.66 | 35.38 | 36.66 | 38.47 | 40.87 | 43.82 | 47.33 | 51.48 | 55.63 | 60.46 | 66.07 | 71.89 | 79.16  | 87.79  | 96.02  |
| 2022 | 33.21 | 33.93 | 35.21 | 37.02 | 39.42 | 42.37 | 45.88 | 49.93 | 54.08 | 58.91 | 64.52 | 70.34 | 77.61  | 86.24  | 94.47  |
| 2023 | 31.74 | 32.46 | 33.74 | 35.55 | 37.95 | 40.90 | 44.41 | 48.46 | 52.61 | 56.76 | 61.59 | 67.41 | 74.68  | 83.31  | 91.54  |
| 2024 | 30.25 | 30.97 | 32.25 | 34.06 | 36.46 | 39.41 | 42.92 | 46.97 | 51.12 | 55.27 | 60.09 | 65.91 | 73.18  | 81.81  | 90.04  |
| 2025 | 28.74 | 29.46 | 30.74 | 32.55 | 34.95 | 37.90 | 41.41 | 45.46 | 49.61 | 53.76 | 58.58 | 64.40 | 71.67  | 80.30  | 88.53  |
| 2026 | 27.21 | 27.93 | 29.21 | 31.02 | 33.42 | 36.37 | 39.88 | 43.93 | 48.08 | 52.23 | 57.05 | 62.87 | 70.14  | 78.77  | 87.00  |
| 2027 | 25.66 | 26.38 | 27.66 | 29.47 | 31.87 | 34.82 | 38.33 | 42.38 | 46.53 | 50.68 | 55.50 | 61.32 | 68.59  | 77.22  | 85.45  |
| 2028 | 24.10 | 24.82 | 26.10 | 27.91 | 30.31 | 33.26 | 36.77 | 40.82 | 44.97 | 49.12 | 53.94 | 59.76 | 67.03  | 75.66  | 83.89  |
| 2029 | 22.52 | 23.24 | 24.52 | 26.33 | 28.73 | 31.68 | 35.19 | 39.24 | 43.39 | 47.54 | 52.36 | 58.18 | 65.45  | 74.08  | 82.31  |
| 2030 | 20.93 | 21.65 | 22.93 | 24.74 | 27.14 | 30.09 | 33.60 | 37.65 | 41.80 | 45.95 | 50.77 | 56.59 | 63.86  | 72.49  | 80.72  |
| 2031 | 19.33 | 20.05 | 21.33 | 23.14 | 25.54 | 28.49 | 31.99 | 36.04 | 40.19 | 44.34 | 49.16 | 54.98 | 62.25  | 70.88  | 79.11  |
| 2032 | 17.71 | 18.43 | 19.71 | 21.52 | 23.92 | 26.87 | 30.38 | 34.43 | 38.58 | 42.73 | 47.55 | 53.37 | 60.64  | 69.27  | 77.50  |
| 2033 | 16.08 | 16.80 | 18.08 | 19.89 | 22.29 | 25.24 | 29.29 | 33.34 | 37.49 | 41.64 | 46.46 | 52.28 | 59.55  | 68.18  | 76.41  |
| 2034 | 14.43 | 15.15 | 16.43 | 18.24 | 20.64 | 23.59 | 27.64 | 31.69 | 35.84 | 39.99 | 44.81 | 50.63 | 57.90  | 66.53  | 74.76  |
| 2035 | 12.76 | 13.48 | 14.76 | 16.57 | 18.97 | 21.92 | 25.97 | 30.02 | 34.17 | 38.32 | 43.14 | 48.96 | 56.23  | 64.86  | 73.09  |
| 2036 | 11.15 | 11.87 | 13.15 | 14.96 | 17.36 | 20.31 | 24.36 | 28.41 | 32.56 | 36.71 | 41.53 | 47.35 | 54.62  | 63.25  | 71.42  |
| 2037 | 9.50  | 10.22 | 11.50 | 13.31 | 15.71 | 18.66 | 22.71 | 26.76 | 30.91 | 35.06 | 39.88 | 45.70 | 52.97  | 61.60  | 69.83  |
| 2038 | 7.83  | 8.55  | 9.83  | 11.64 | 14.04 | 16.99 | 21.04 | 25.09 | 29.24 | 33.39 | 38.21 | 44.03 | 51.30  | 59.93  | 68.16  |
| 2039 | 6.14  | 6.86  | 8.14  | 9.95  | 12.35 | 15.30 | 19.35 | 23.40 | 27.55 | 31.70 | 36.52 | 42.34 | 49.61  | 58.24  | 66.47  |
| 2040 | 4.43  | 5.15  | 6.43  | 8.24  | 10.64 | 13.59 | 17.64 | 21.69 | 25.84 | 30.00 | 34.82 | 40.64 | 47.91  | 56.54  | 64.70  |
| 2041 | 2.70  | 3.42  | 4.70  | 6.51  | 8.91  | 11.86 | 15.91 | 19.96 | 24.11 | 28.26 | 33.08 | 38.90 | 46.17  | 54.80  | 63.03  |

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