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JUNE 2013

## Newsletter

### Market Comment

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**50th International Paris Air Show 2013.** The first air show in Paris was held from September 25 to October 17, 1909 in the city's **Grand Palais**. The show was dedicated to ñaerial locomotionò and featured 380 exhibitors and sell-out crowds. More than 100,000 visitors attended the show, prompting the sponsors to hold it annually, and since 1924, once every two years. The show was moved permanently to **Le Bourget Airport** in 1953, where an exhibition center was built. The show was famous for being the place to debut new aircraft. One suspects that **Aerospatiale** displayed its early Caravelle 1As at the 1959 **Paris Air Show** before they were delivered to **Air France** and **SAS**. Ten years later, the world's first supersonic airliner, the Concorde, and the first wide-body, the **Boeing** 747 jumbo jet, were on display at the show. The Franco-German **Airbus** A300B was presented to the public for the first time in 1973. The 2009 show featured 100 years of aviation innovation, but the **Boeing** 787 was not ready; it was on static display at the 2011 show. This year **Boeing** launched the 787-10 at the show and **Airbus** touted the A350, which flew just before the show started. **Airbus** announced 69 A350 sales, including 35 orders for the A350-1000, while **Boeing** launched the 787-10 with 102 orders and commitments.

**Airbus** sold 466 aircraft worth \$68.7 billion at the **Paris Air Show**, which illustrated the recovery of the commercial aviation industry. The deals comprised Memoranda of Understanding (MoU) for 225 aircraft worth \$29.4 billion and firm purchase orders for 241 aircraft worth \$39.3 billion. Six customers committed to buy 283 A320neo Family aircraft and 88 standard A320neos, worth approximately \$37.8 billion at list prices. **Airbus** boasted that its currently-produced narrow body aircraft were still the industry leaders. The largest sale announced during the show was **easyJet's** commitment for 100 A320neos plus 35 A320neos, after a very intense competition against **Boeing's** 737 MAX. **Airbus** won another major endorsement for the A320 Family from **Lufthansa** which firmed-up a previously-announced purchase of 100 more aircraft. Additional A320 Family orders and commitments came from **Hong Kong Aviation Capital** for 60, **ILFC** for 50, **Spirit** for 20; and Tunisia's **Syphax Airlines** for three, significantly the first A320neo commitment from Africa.

**Airbus** flew the first A350 XWB on Friday, June 14, 2013, and completed the second flight on Wednesday, June 19. A hoped for third flight from Toulouse to **Le Bourget Airport** and back did not happen, but **Airbus** booked 69 more A350 orders and commitments worth \$21.4

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billion from four customers. **Air France-KLM** signed a long-discussed firm order for 25 A350-900s, while **Singapore Airlines** placed a repeat order for 30 more A350-900s. **United Airlines** upgraded its 25 ordered A350-900s to the larger A350-1000 model, and added 10 more A350-1000 orders. Late in the week, **Sri Lankan** also signed a commitment for four A350-900s and six A330-300s. **Airbus's** Chief Operating Officer i Customers, **John Leahy**, boasted, ñOur A350 XWB has been out-selling the 787 by better than 2- to-1 over the last five years. In addition our A320neo Family retains a 60 percent market share lead. That's a corner I want to stay boxed into.

**Airbus** sold 20 of its flagship A380-800s to the world's largest lessor of the type, **Doric Lease Corp.** The deal was worth more than \$8 billion at list prices. The contract was also significant because **Doric** is currently the only lessor to order new A380s from the factory. Previously, it purchased aircraft from airlines and leased them back. The A380 is now available to airlines who wish to acquire the aircraft under the flexibility of an operating lease agreement, **Doric** said.

**Boeing Launched the 787-10 at the Paris Air Show**, and announced orders and commitments for 442 airplanes, valued at more than \$66 billion at list prices. The company said it sold the full family of **Boeing** commercial products, including the Next-Generation 737, 737 MAX, 747-8, 777 and 787, demonstrating customers's strong confidence in the product line. **Boeing's** net orders for 2013 stood at 692 when the show ended on June 23. The 787-10 Dreamliner was launched with 102 orders and commitments from five customers, including **Air Lease Corporation** (30), **GE Capital Aviation Services** (10), **International Airlines Group / British Airways** (12), **Singapore Airlines** (30) and **United Airlines** (20). Design of the 787-10 has already started and the first deliveries are targeted for 2018. The new Dreamliner will be able to carry 300-330 passengers on more than 90 percent of the world's twin-aisle routes. **Boeing** had two 787-8s at **Paris**, one **Air India** plane performed for the crowd and one **Qatar Airways** 787 was on static display where it was viewed by hundreds of customers, partners, government officials and journalists. **Boeing** announced key partnerships with **Embraer** covering the marketing and sales of **Embraer's** KC-390 medium-size jet transport.

**Avions de Transport Regional (ATR)** sold 96 ATR 72-600s at the **Paris Air Show**. Leasing companies **Nordic Aviation**

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**Capital and Air Lease Corp. (ALC)** ordered 91 and five regional turboprops respectively. The largest maker of turboprop airliners surpassed its 2013 sales target of 80 firm orders. **ATR** won 173 orders and commitments this year, with a list value of \$4.1 billion. Its backlog stands at a record \$6.5 billion. This was the company's best air show in its history.

**Bombardier Announced CSeries Orders at Paris.** **Gulf Air**, Bahrain, disclosed its firm order for 10 CS100s and options for an additional six aircraft. **Odyssey Airlines**, a new airline that intends to operate from **London City Airport**, announced its firm order for 10 CS100s. That order was valued at \$628 million based on the list price. **Arik Air**, Nigeria, signed a firm contract at **Paris** to acquire three CRJ1000 NextGen aircraft and four Q400 NextGen turboprop airliners. The deal was valued at approximately \$297 million at list prices. **Horizon Air** added three 76-seat Q400 NextGen airliners which will bring its fleet to 51 Dash 8 aircraft. The transaction represented the conversion of three previous options and the airline reconfirmed its options for another seven Q400NGs. The order was valued at \$98 million at list price.

**Embraer S.A. Announced the Launch of the Second Generation E-Jet Family at Paris Air Show.** The new E-Jets will be named the E2 and will be offered in three models, the E175-E2, the E190-E2, and the E195-E2. The E190-E2 will be the first to enter service in the first half of 2018. The E195-E2 will follow in 2019 and the first E175-E2s will be delivered in 2020. The E190-E2 will be the same size as the E190, and seat up to 106 passengers. The E175-E2 will be stretched one seat row, and will carry up to 88 people, while the E195-E2, will be delivered with three more seat rows and will accommodate up to 132 seats. The new E2s will be powered by **Pratt & Whitney** PurePower Geared Turbofan high by-pass ratio engines. **Embraer** estimated that it will invest \$1.7 billion to develop the E-Jet E2 over the next eight years. The manufacturer forecast a demand for 6,400 passenger jets in the under-130 seats market, over the next 20 years. The program won launch orders and commitments for 300 aircraft from **SkyWest Airlines** and **ILFC**.

In spite of cold and wet weather, the **50th International Paris Air Show** was a tremendous success for the show promoters and the aviation industry. The centennial show in 2009 was marred by slow sales due to the recession and the 2011 show was lackluster as well. The 50th show proved that the aviation industry has recovered. More than 300,000 aviation professionals and members of the public attended and 2,215 exhibitors from 44 countries set up in 340 chalets and 30 pavilions. There were 285 national delegations from 102 countries, and 3,100 accredited journalists in attendance. The manufacturers displayed 150 aircraft and sold \$150 billion worth of goods.

## Airbus Orders

**Airbus Sold Three A320s and Delivered 45 Aircraft in May.** **EasyJet** bought three A320ceo (current engine option) aircraft. At the end of May, **Airbus** logged 493 net orders, taking the company's overall commercial backlog to 4,928 aircraft. The manufacturer delivered 36 A320 Family jetliners, seven A330s and two A380s. The largest Airbus operator, **US Airways**, received two A321s and two A330s. Kazakhstan's flag carrier, **Air Astana**, took delivery of its first Sharklet-equipped A320 becoming the first airline in the region to operate the new wingtip devices.

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**British Low-Cost Airline, easyJet,** ordered three standard A320s to top off its fleet of 153 A319s and 58 A320s. The airline had 15 A320s in backlog at the end of May.

**Announced Orders at the 2013 International Paris Air Show.** **EasyJet** placed a conditional order for 100 A320neo (new engine option) aircraft and 35 current engine option A320s. The airline will option another 100 A320neos. The deal was announced at **Paris Air Show**, but it is subject to shareholder approval. Eighty-five of the 135 new 180-seat A320s will replace **easyJet's** oldest 156-seat A319s. The 35 A320ceo aircraft will be equipped with Sharklets and delivered between 2015 and 2017. The 100 A320neos are scheduled to enter service from 2017 through 2022. The 135 A320 Family aircraft were list priced at nearly \$12 billion. **EasyJet** operates one of Europe's most extensive route networks, and is the UK's largest airline carrying 55 million passengers a year, **Airbus** said. It is also the largest A320 Family customer and operator in Europe. It

could have a fleet of 165 to 298 aircraft in 2022 depending on economic conditions and opportunities available the airline said. **EasyJet** CEO **Carolyn McCall** said, "Airbus offered us the best deal, and at a price with a greater discount to the list price than the landmark fleet purchase with **easyJet** in 2002, when it bought 120 A319s. Ms. **McCall** said **easyjet** considered the 737 MAX, but price was the deciding factor in the new agreement. The purchase will be put before the shareholders at a general meeting on or around July 11 July for their approval.

**Airbus** started the **50th Paris Air Show** with a \$10.4 billion order for 100 A320s from the **Lufthansa Group**, and a \$5 billion order from **ILFC** for 50 A320neo aircraft. The **Lufthansa Group** has firmed up its **Supervisory Board's** commitment placed last March for 30 A320ceo (current engine option) with Sharklets, 35 new engine option A320neos and 35 A321neos. The airline has operated the A320 Family since October 1989, and was the launch customer for the A321. It was one of the first operators of the A319. The new order confirmed **Lufthansa's** position as the largest **Airbus** airline customer and operator in Europe. It now has 299 A320 Family aircraft on order and has taken delivery of more than

## Airbus Orders, Deliveries and Backlog

May 2013

| MAY<br>ORD        | MAY<br>DEL | MAY<br>CANX | TOTAL<br>ORD     | TOTAL<br>DEL | BACK<br>LOG  |
|-------------------|------------|-------------|------------------|--------------|--------------|
|                   |            |             | <b>A318</b>      |              |              |
| -0-               | -0-        | -0-         | 79               | 79           | -0-          |
|                   |            |             | <b>A319</b>      |              |              |
| -0-               | 2          | -0-         | 1,526            | 1,370        | 156          |
|                   |            |             | <b>A320</b>      |              |              |
| 3                 | 28         | -0-         | 6,205            | 3,334        | 2,871        |
|                   |            |             | <b>A321</b>      |              |              |
| -0-               | 6          | -0-         | 1,681            | 814          | 867          |
|                   |            |             | <b>A330</b>      |              |              |
| -0-               | 7          | -0-         | 1,246            | 984          | 262          |
|                   |            |             | <b>A350</b>      |              |              |
| -0-               | -0-        | -3          | 613              | -0-          | 613          |
|                   |            |             | <b>A380</b>      |              |              |
| -0-               | 2          | -0-         | 262              | 103          | 159          |
| <b>This Month</b> |            |             | <b>This Year</b> |              | <b>BL</b>    |
| 3                 | 45         | -3          | <b>493</b>       | <b>247</b>   | <b>4,928</b> |

**Airbus sold 12,805 aircraft and delivered 7,877 as of May 31, 2013. Twenty-four orders have been cancelled. Total orders, deliveries and backlog include cancellations and order changes. Airbus expects to deliveries from 600 to 610 aircraft in 2013.**

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150 of these aircraft. **Lufthansa Group's** Executive VP of Fleet Management, **Nico Buchholz**, stated that the new order will "meet the future growth and fleet renewal needs of the **Group** airlines." All the newly ordered narrow bodies will be fitted with Sharklet wing-tip devices. The new engine option A320 is scheduled to enter service in 2015, but **Airbus** did not announce the delivery schedules for either of the two large A320 orders.

**International Lease Finance Corporation (ILFC)** announced it exercised options to purchase 50 more A320neo Family aircraft from **Airbus**. The options were part of an agreement signed in April 2011 for 100 firm A320neo Family aircraft. **ILFC CEO Henri Courpron** said, "The A320neo Family has proven to be very successful in the marketplace, and the exercise of these options is a logical extension of our current fleet strategy. This order further reinforces our belief in the value and operational efficiencies these neos will provide to our global customers." **ILFC** was the first lessor to buy the A320neo Family aircraft and now it the type's largest leasing company customer. **ILFC** will make its engine selection at a later date. Deliveries of the lessor's 150 A320neos will commence in 2015. Including this latest contract, **ILFC** continues to be **Airbus'** largest customer, having ordered a combined total of 769 single-aisle and widebody **Airbus** aircraft.

**Airbus Successfully Flew the First A350 XWB** from **Toulouse-Blagnac Airport** France, on June 14, 2013. The plane was in the air for four hours and five minutes. **Airbus'** Chief Test Pilot **Peter Chandler** and A350 XWB Project Pilot, **Guy Magrin**, were at the controls, and four flight test engineers were monitoring systems in the cabin. **Airbus** President and CEO **Fabrice Bregier** congratulated the company's employees for the first flight of A350-900 (F-WXWB, SN 001). He said, "The A350 XWB which has flown today, integrating the latest available technologies, is now entering the final stage of its development, and it is ready to head towards certification and entry-into-service in the second half of next year." The A350 XWB took off at a gross weight of 221 tons and flew around south western France, where the crew explored the aircraft's flight envelope. The A350 was accompanied by a chase plane to observe and film the various maneuvers. It was also monitored by experts on the ground in real-time via a direct telemetry link. Five A350s will undergo a rigorous test flight campaign of approximately 2,500 flight hours. The plane will be certified and enter airline service in the second half of 2014. The first A350 will be delivered to **Qatar Airways**.

**Spirit Airlines** placed a firm order for 20 **Airbus** A321neos and converted 10 of its existing A320 orders to the larger A321ceo. The airline's A321neos will seat 219 passengers in a single-class layout to accommodate growing passenger numbers. All of the A321s will be fitted with fuel-saving Sharklets. The 30 A321s are worth \$3.2 billion at list prices. and will feature the **Space-Flex** cabin option. This rear lavatory and galley combination optimizes use of the available space at the very back of the aircraft, and allows the lavatory to be accessible to people with reduced mobility, **Airbus** said. **Spirit's** firm orders total seven A319s, 98 A320s (including 45 A320 new engine option aircraft) and now 30 A321s. The airline currently operates a fleet of approximately 50 A320 Family aircraft.

**Syphax Airlines**, Tunisia, signed a Memorandum of Understanding (MoU) to buy three A320neo aircraft. This was the first order for the A320neo from an African based carrier. It marked a significant breakthrough for **Airbus** in one of the world's fastest developing markets. **Syphax** also ordered three A320ceo aircraft, all of which will be powered by **CFM** engines. The airline already operates 2 A319 and three A320 aircraft and will lease an A330-200 soon.

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**Hong Kong Aviation Capital (HKAC)**, a fast growing aircraft leasing company, signed a Memorandum of Understanding (MoU) to purchase 40 A320neo and 20 A321neo aircraft. The agreement was signed at the **Paris Air Show** on June 20. **Donal Boylan**, CEO of **HKAC** said, "All of our business over the last two years has been sale and lease-backs of **Airbus** A320 and A330 aircraft. This is our first direct order with any aircraft manufacturer and our first commitment for the A320neo." **HKAC** is based in Hong Kong and it currently has a portfolio of over 50 **Airbus** aircraft. It also provides financing leasing services to several airlines in Asia and worldwide.

**Air France-KLM** has firmed its agreement to order 25 A350-900s, which will be operated by both carriers. The companies have reserved 25 options as well. The firm order was delayed while the airline group negotiated with **Rolls-Royce** about engine maintenance. **Air France** chief **Alexandre de Juniac** said, "Despite some difficulties we're facing, we're in sufficiently good shape to renew our long-haul fleet." The airline reached a "comfortable" agreement with **Rolls-Royce** that allows **Air France** to maintain its own engines fleet. The first A350 will enter service with **Air France** in 2017.

**Airbus Will Offer a Regional A350-900.** Sales chief **John Leahy** told the press that **Airbus** was looking at a shorter-range A350. The regional version will not require design changes, but it will be powered by lower-thrust **Rolls-Royce** engines tuned for shorter routes than the baseline model. At **Paris**, he said, "On the A350-900 there is a regional version with de-rated thrust." The proposed plane will counter the 787-10, the largest version of the Dreamliner, which exchanges range for the ability to carry more people on dense, intra-Asian routes. An **Airbus** spokeswoman said the regional A350 would "match the payload-range capability of the 787-10".

**Singapore Airlines (SIA)** added 30 A350-900 orders to its existing backlog of 40. It took options for a further 20 aircraft, which can be taken as A350-900s or the larger -1000 model. The agreement firms up a commitment announced in May. This is **Singapore's** third order for the A350 XWB. The deal increases the carrier's total firm orders for the all-new A350 XWB to 70, plus 20 options. **Singapore Airlines** will operate the A350 XWB on long-haul and regional services. The A350 XWB (Xtra Wide-Body) is an all-new mid-size long-range aircraft available in three versions and which seat between 270 and 350 passengers in typical three-class layouts. The aircraft will use 25 per cent less fuel than existing aircraft in this size category and providing an equivalent reduction in CO2 emissions, **Airbus** said. The first aircraft will enter into commercial service in the second half of 2014.

**United Airlines** announced it will add 35 A350-1000 aircraft to its fleet. The airline converted its previous order for 25 A350-900s to the -1000 model, and ordered another 10 A350-1000s. The 35 planes are worth \$11.6 billion at list prices. The A350-1000 typically will seat 350 passengers in a three-class layout. The aircraft is capable of flying 8,400 nautical miles non-stop and will be operated by **United** on higher density routes, including non-stop flights between the U.S. and the Asia/Pacific region. The aircraft will be powered by two **Rolls-Royce** Trent XWB engines delivering 97,000lbs of thrust. The new A350s will replace some of **United's** 52 777-200ERs.

**Scandinavian Airline System (SAS)** signed a Memorandum of Understanding (MoU) for eight A350-900s and four A330-300 Enhanced airplanes. The new A350 XWBs and A330Es will join the airline's fleet of 19 A320 Family and 11 A330/A340 aircraft. **Rolls-Royce** won the engine selection and will provide Trent XWB and Trent 700 engines and long-term **TotalCare** maintenance worth \$1 billion at list prices,. The new widebodies will be used to modernize its fleet of seven A340-300s with more fuel-

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efficient aircraft that will deliver operational efficiencies and cost savings due to the commonality across the fleet.

**SriLankan Airlines** will buy six A330-300s and four A350-900s in a deal worth \$2.6 billion at list prices. It also plans to lease three A350s, but the lessor had not yet been chosen. **Rolls-Royce** will provide Trent 700 engines to power the A330-300s and Trent XWB engines with the A350-900s in a deal worth \$800 million at list prices. **Kapila Chandrasena, SriLankan Airlines' CEO** said the new planes will replace the airline's six A340-300s and seven A330-200s, over the next 10 years. The carrier will take the first A330-300s after October 2014 and the A350-900s in 2017. **Airbus** said its "aircraft share a unique cockpit and operational commonality, allowing airlines to use the same pool of pilots, cabin crews and maintenance engineers, bringing operational flexibility and resulting in significant cost savings." **Airbus** has booked more than 1,200 orders for the three types of A330s and the A350 XWB has won 613 firm orders from 33 customers as of late June.

**Doric Lease Corp. (DLC)** signed a Memorandum of Understanding (MoU) covering the purchase of 20 A380s at the **50th Paris Air Show**. With this deal, **Doric** said it "will offer a tailored A380 leasing solution and will make the aircraft even more accessible to both new and existing A380 operators around the world who prefer to opt for the flexibility of an operating lease." **Doric** is ranked as the third largest wide-body lessor worldwide by value, and the world's largest asset manager of leased A380s. Its aircraft portfolio under management is valued at \$6 billion and includes 18 A380s that were acquired through sale-leaseback transactions, **Doric Lease Corp.'s CEO Mark Lapidus**, said, "The A380 offers us a unique opportunity to continue growing **Doric's** aviation platform by establishing ourselves as a lessor with a forward-order portfolio of 20 A380s to market with existing and new customers worldwide. We will be able to provide turn-key A380 ownership solutions to airlines, allowing them to benefit from operating this fantastic aircraft. The A380 offers airlines a great opportunity to provide a superior product and travel experience while strengthening revenue generation. We are delighted to be part of the long term success of the A380." **Doric** was founded in 2005 and currently has \$7 billion in assets including the 18

**Malaysian Airline System (MAS)** said it will add a few more A380s to the six A380s in its fleet. The airline's CEO, **Ahmad Jauhari Yahya**, said, "Remaining static means you will be shrinking when the market grows. We have to grow at least in step with the market. We are very positive moving forward." The airline suffered two consecutive years of losses. **Malaysian Air** is expected to report an estimated loss of 187.6 million ringgit this year, but will post a profit of 191 million ringgit in 2014. **MAS** needs new aircraft to cut its fuel expenses, which are 37 percent of total costs. More efficient aircraft will help end losses and allow it to better compete with **Singapore Airlines**, which added more A380 orders last year. "The A380s have been successful with passenger load factor of above 80 percent, sometimes even full load. We have been flying the A380s aggressively, 17 hours a day," Mr. **Ahmad Jauhari** said. The CEO said **MAS** would take delivery of 24 new aircraft this year and another 25 over the next two years. It has three A330-300s and 26 737-800NGs on firm backlog. The airline will retire 30 aircraft this year to cut costs, which will lower the average age of the fleet of 110 planes to 5.4 years by end of 2013, Mr. **Ahmad Jauhari** said. Asian carriers account for the majority of A380 orders and are expected to order more. A380 sales have faltered in recent years due to the weak global economy and the A380s wing problems. **Airbus** sold nine A380s in 2012, less than a third of the target of 30, leaving it some unsold production slots. This year **Airbus** intends to sell 25 A380s, and has nearly reached that goal with the **Doric MoU**.

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A380s, two A340-600s, one A330, two A320s, six A319s and six 777s. In 2013, **Doric** launched **Doric Lease Corp.** as an operating lessor based in Dublin, Ireland. **DLC** will focus on leasing widebody aircraft, acting in a principal investment capacity. It will acquire aircraft, and do sale and leaseback transactions, and arrange discrete aircraft investments for companies. The parent company, **Doric**, will continue its fund management business for transportation, energy and real estate assets, which are worth \$1 billion.

## Boeing Orders

**Boeing Sold 223 737s and Nine 777s in May.** **Swiss International Air Lines** confirmed its purchase of its first six 777-300ERs. **KLM – Royal Dutch Airlines** purchased its eighth 777-300ER and was identified as the customer for one 777-300ER that was ordered in July 2011. An **Unidentified Customer (Qatar Airways)** ordered two 777-300ERs. **Turkish Airlines** lead the 737 order book when it finalized its order for 20 more 737-800NGs, 40 737 MAX 8s, and 10 737 MAX 9s. **Southwest Airlines** exchanged 30 existing 737-700 orders for 30 737 MAX 7s. America's leading low cost airline also bought five more 737-800NGs for delivery in 2014. **WestJet Airlines**, Canada, purchased 10 more 737-800s during May. **Boeing** sold 108 737s to unidentified customers. Early in the month one company (**United Airlines**) bought two 737-900ERs. On May 21, one **Unidentified Customer** ordered 40 737-800s, and another contracted for 61 737 MAX aircraft. At the end of May, another **Unidentified Customer** committed to buy five 737 MAX aircraft. **Boeing** announced that **Royal Brunei Airlines** is the customer for the five 787-8s that **LCAL** cancelled. The airplanes were first ordered in May 2005.

**Boeing** delivered a record number of 64 aircraft in May. It handed over 40 737NGs, four 747-8s, four 767s, nine 777s and seven 787s. The output of 737NGs, 747-8s and 787s matched or surpassed previous numbers of deliveries for the types.

**Turkish Airlines (THY)** signed its order for 40 737 MAX 8s, 10 737 MAX 9s and 20 more 737-800NGs, valued at \$6.9 billion (\$98.6 million each) at list prices. The airline took options on another 25 MAX 8s. The 20 737-800s will be delivered in 2016. The first 20 MAXs will

| Boeing May 2013<br>Orders, Deliveries |            |             |                  |              |             |
|---------------------------------------|------------|-------------|------------------|--------------|-------------|
| MAY<br>ORD                            | MAY<br>DEL | MAY<br>CANX | TOTAL<br>ORD     | TOTAL<br>DEL | BACK<br>LOG |
| <b>737</b>                            |            |             |                  |              |             |
| 223                                   | 40         | -54         | 10,871           | 7,604        | 3,267       |
| <b>747</b>                            |            |             |                  |              |             |
| -0-                                   | 4          | -0-         | 1,523            | 1,468        | 55          |
| <b>767</b>                            |            |             |                  |              |             |
| -0-                                   | 4          | -0-         | 1,108            | 1,049        | 59          |
| <b>777</b>                            |            |             |                  |              |             |
| 9                                     | 9          | -0-         | 1,452            | 1,105        | 347         |
| <b>787</b>                            |            |             |                  |              |             |
| -0-                                   | 7          | -0-         | 890              | 57           | 833         |
| <b>This Month</b>                     |            |             | <b>This Year</b> |              | <b>BL</b>   |
| 232                                   | 64         | -54         | 428              | 245          | 4,561       |

**Boeing sold 23,374 aircraft and delivered 18,813 as of May 31, 2013.**

**The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s.**

**Sales totals are net, minus 70 cancellations. Boeing expects to deliver from 635 to 645 aircraft in 2013,**

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arrive in 2018. If the options are taken up, **THY** will take 15 more MAXs in 2019, 30 in 2020 and the remaining 10 in 2021. The 737-800s will be powered by **CFM International** CFM56s while LEAP-1B will power the 737 MAX. **THY** currently serves more than 220 cities in 99 countries around the world. It operates 737 NGs and 777-300ERs, and now it has 100 **Boeing** airplanes on order including 737 NGs, 737 MAXs and 777-300ERs.

**WestJet Airlines**, purchased 10 new 737-800NGs, and delayed the delivery of five 737-700NGs from 2014-2015 to 2016 and 2017. The 10 737-800s will be delivered between 2014 and 2015. **WestJet** will also sell 10 of its oldest 737-700s in 2014 and 2015. The airline said the retirement of its 2002-2003 model 737s will lower the average fleet age by a year. The fleet numbers will not grow, but capacity will increase because **WestJet** will replace smaller 737-700s with larger 737-800s. The airline operates 103 737-600s, -700s and -800s and currently has 30 737-700s and 12 737-800s on order.

**In Early June, United Airlines** ordered two more 737-900ERs. Later in the month, another **Unidentified Customer** contracted for 20 737NGs and 20 737 MAX aircraft, worth \$3.8 billion (an average of \$95 million each). **Ryanair** signed its commitment for 175 737NGs, while **CIT Leasing Corporation** bought 30 737s. **Singapore Airlines** and **United Airlines** placed launch orders for 30 and 10 787-10s at **Paris Air Show**. **Boeing** announced **Qatar Airways'** previously unidentified order for two 777-300ERs. One customer cancelled (or exchanged) 28 737 orders. **Boeing** had 198 737 and 10 777 orders from unidentified customers at the end of June.

**Southwest Airlines** became the 737 MAX 7 launch customer in May, by converting 30 737-700 orders into commitments for 30 MAX 7 series aircraft. The airline exercised options to buy five more 737-800NGs. The total order for 35 aircraft was valued at \$2.9 billion (\$82.86 million each) at current list prices. Deliveries of the first MAX 7s were scheduled for 2019. After the MAX 7 conversions and exercised options for 737-800s, **Southwest** has unfilled orders for 180 737 MAX airplanes, 97 737-700NGs and 40 737-800NGs.

**TUI Travel** signed a commitment to buy 40 MAX 8 and 20 MAX 9 airplanes in late May. The order was valued at \$6.09 billion (\$101.5 million each) at list prices, but **TUI** said it negotiated a "significant discount" from the list price in the form of concessions and support. The order will be posted on the **Boeing Orders and Deliveries** website when it is finalized. The holiday travel company agreed to take options on another 60 MAX aircraft and reserved purchase rights for 30 more. All 150 MAX will be powered by **CFM International** LEAP-1B engines. The firm engine order will include eight spare powerplants along with the 120 engines installed on the 60 aircraft. **TUI** has 141 jets in the fleets of its subsidiaries, **ArkeFly**, **Corsair**, **Jetairfly**, **Thomson Airways**, **TUIfly** and **TUIfly Nordic**. All but the French long-haul operator **Corsair** fly 114 737s and 757s. The new 737 MAX aircraft will replace many of the older 737NGs and 757s over the next decade. Deliveries of the 737 MAX jets will start in January 2018, and end in March 2023.

**Paris Air Show Orders:** Three airlines, **British Airways (BA)**, **Singapore Airlines** and **United Airlines**, and two lessors **Air Lease** and **GECAS**, launched the **Boeing 787-10** with combined orders for 102 aircraft. **BA** committed to buy 12 787-10s, worth \$3.5 billion, **Singapore Airlines** confirmed its provisional order for 30 -10s, valued at \$8.7 billion, and **United** ordered 10 aircraft and converted 10 existing -8 orders to the -10 model. The 20 787s were list priced at \$5.8 billion. **Air Lease** provisionally ordered 30 787-10s, and bought another three 787-9s, at a total cost of \$9.4 billion. **GECAS** committed

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to buy 10 787-10s, worth \$2.9 billion. The 787-10 is a relatively simple addition of two fuselage plugs (5.49 meter-18 foot) to the 290-seat 787-9. The 320-seat 787-10 fills a gap between the 787-9 and the 350-seat 777-300ER. **General Electric** GENx-1B and **Rolls-Royce** Trent 1000-10 engines will power the 787-10. Both will be rated at 76,000 pounds of thrust. The airplane is being marketed as a replacement for A330s, A340s and the 777-200. Unlike its long-range siblings, the -10 is designed to carry 300-330 passengers and a full cargo load about 7,000 nautical miles (nearly 13,000 km). The shorter 787-8 has a range of 8,000 nm (14,000 km), and the larger 787-9 will fly 8,400 nm (14,700 km).

**Boeing** said the -10 can fly on high-traffic trunk routes within Asia, Europe, the Middle East and the USA. The manufacturer must choose where to build the 787-10. Both the Everett and Charleston final assembly plants are bidding on the contract. It is unlikely that it will be built at both plants, which is what **Boeing** does with the current 787-8. The launch of the -10 raised the 787 backlog to nearly 925, and it may require the factories to produce more than 10 per month because at the current rate it will take **Boeing** eight years to build down the 787 backlog. The 787-9 is in final assembly in Everett, Washington, and is scheduled to make its first flight later this year. Fifty-seven 787-8s had been delivered and are in service as of May 31. The first 787-10s will fly in 2017 and they will enter service in 2018. **Boeing Commercial Airplanes** President and CEO, **Ray Conner**, boasted that "the 787-10 Dreamliner will be the most-efficient jetliner in history. The airplane's operating economics are unmatched and it has all the incredible passenger-pleasing features that set the 787 family apart as truly special. The 787-10 is 25 percent more efficient than airplanes of its size today and more than 10 percent better than anything being offered by the competition for the future." The 787-10 will share a common type rating with the 787-8 and -9, and with the **Boeing** 777, which will give airlines greater flexibility in scheduling and training flight crews.

#### **Boeing Building First 787-9 Dreamliner.**

**Boeing** joined the wing to the fuselage of the longest-range member of the 787 family on May 30. It will build the first three 787-9s on its **Temporary Surge Line** in Everett to allow for smoother integration of the 787-9 into the production system while continuing to ramp up production across the 787 program. First flight of the 787-9 is scheduled for the second half of 2013, with first delivery to launch customer **Air New Zealand** set for early 2014. To date, 20 customers have ordered 355 787-9s, accounting for approximately 40 percent of all 787 sales.

**Air Lease Corporation (ALC)** signed a Memorandum of Understanding to purchase 30 787-10 Dreamliners and another three 787-9s. The contract will be worth \$9.4 billion (\$284.8 million each) at list price. The lessor expects to begin taking 787-10 deliveries in 2019. Once the order is finalized, the 787-10s and 787-9s will be added to the 185 **Boeing** airplanes that **ALC** already has on order, including 78 737-800NGs, 80 737 MAX 8s and 9s, 15 777-300ERs and 12 787-9s.

**GE Capital Aviation Services (GECAS)** committed to buy 10 787-10s, worth \$2.9 billion (\$290 million each) at current list prices. The new 787s will be fitted with **General Electric** GENx-1B engines. The schedule for deliveries was not announced. **Boeing** said it looks forward to working with **GECAS** to finalize the details of the agreement, at which time the airplanes will be posted to the **Boeing Orders & Deliveries** website as a firm order. Once finalized, these 787s will bring the total number of **Boeing** airplane orders to 598 since August 1995, including 483 737s, 10 747s, four 757s, 30 767s and 61 777s. To date, **GECAS** has taken delivery of 444 of the airplanes.

**United Airlines** ordered 10 787-10 Dreamliners and switched 10 existing 787-9 orders to the -10 model. The new contract raises **United's** 787 backlog to 54, with six aircraft delivered. **United** selected GEnx-1B engines to power its 20 787-10s and the remaining 15 firm 787-8s from a February 2010 order. Delivery of the first aircraft is expected in 2018. **United's** conversion of 10 existing 787-8 orders allows the airline to delay those 10 deliveries until after 2018. The 20 787-10s lets the airline to modernize its international widebody fleet by replacing older, less efficient aircraft. They were list priced at \$5.8 billion (\$290 million each).

**Singapore Airlines (SIA)** was the first buyer of the new 787-10 Dreamliner model when it signed a pre-launch commitment for 30 of the type in late May. The order was confirmed at the **Paris Air Show**. The 787s will be powered by **Rolls-Royce** Trent 1000 engines. The first of the 30 787-10s are scheduled for delivery in the 2018-19 financial year. The deal is worth \$8.7 billion (\$290 million each) at list price. **SIA's** low-cost subsidiary **Scot** will fly the 10 787-8s and 10 787-9s that **Singapore** ordered in October 2006.

**International Airline Group (IAG)** announced that it will convert 18 787 options to firm orders for **British Airways**. Twelve of the options will be taken up as 787-10s and the rest will presumably be 787-9s. **BA** ordered eight 787-8s and 16 787-9s in December 2007. The dozen 787-10s are valued at \$3.5 billion (\$291.667 million each) at list price. The sale is listed as a "commitment" and needs to be finalized. **BA's** other 787s are propelled by **Rolls-Royce** engines, so it is safe to assume that the new batch will be as well.

**737 MAX 8 Launch Customer, Southwest Airlines**, will receive its first plane more than three months earlier than originally scheduled. The MAX will be delivered early in the third quarter of 2017 instead of the fourth quarter, because the manufacturer's increasing confidence in the design. **Boeing** said, "Since the 737 MAX launch in August 2011, the team has worked to define the final configuration of the airplane including new LEAP-1B engines from **CFM International**, a redesigned tail cone and the Advanced Technology winglet. Testing in the wind tunnel and data analysis prove[s] that the 737 MAX configuration, set to be final in July, will give customers a 13 percent fuel-burn improvement over today's most fuel efficient single-aisle airplanes." The MAX will also feature 787-style flight displays and an electronic bleed air system. The larger diameter LEAP engine fan requires 8-inch taller landing gear and a re-designed forward electronics equipment bay in the nose section. After firm configuration is achieved, the 737 MAX team will begin detailed design of the airplane, which should be completed in 2014. The 737 Max will enter service about two years after the first deliveries of the re-engined A320neo, which was launched only nine months before the 737 MAX.

**Qatar Airways** announced the purchase of two 777-300ER (Extended Range) airplanes at the **2013 Paris Air Show**. The airline optioned seven more. The firm orders were placed in May and attributed to an unidentified customer on **Boeing Orders & Deliveries** website. The total value of the agreement is \$2.8 billion (\$311.1 million each) at current list prices. The Doha-based airline currently operates 22 777-300ERs, nine 777-200LR (Longer Range) airplanes and four 777F freighters. The two new orders raised **Qatar's** backlog to nine 777s. The airline took delivery of its first 777 in November 2007. A 777-200LR became the airline's 100th airplane when it was handed over in September 2011. It now has 125 aircraft in service and flies them to 128 business and leisure destinations across Europe, the Middle East, Africa, Asia Pacific and the Americas. **Boeing** started building 100 777s per year in February 2013. As of May 2013, 1,105 777s have been delivered and another 347 are in backlog, roughly 3.5 years of production.

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**Korean Air** agreed to purchase five 747-8 Intercontinental passenger planes and six 777-300ER (Extended Range) jetliners, valued at approximately \$3.6 billion at current list prices (the 747-8I is list priced at \$351 million). When the order is finalized it will be on **Boeing's Orders & Deliveries** website. So far, **Korean Air** is the only airline to order both the passenger and freighter versions of the 747-8. Korea's flag carrier will have 10 passenger 747-8Is and seven 747-8Fs on order. Four of the freighters have been delivered. The airline currently operates 90 **Boeing** passenger airplanes, including 737NGs, 747-400s and 777-200/300s. The airline also operates an all-**Boeing** cargo fleet of 21 747-400, three 747-8F and three 777F freighters. **Korean Air** operates 149 aircraft to 125 cities in 45 countries. The Korean national carrier manufacturers raked wing-tips for the 747-8 and 787 aircraft.

**Boeing Announced Orders for 200 737NGs and 117 737 MAX at the Paris Air Show:** **Skymark Airlines**, Japan, intends to order four 737 MAX aircraft, valued at \$400 million (\$100 million each). When the order is confirmed, it will be the first Japanese customer for the MAX.

**Skymark** is based at **Haneda Airport** in Tokyo, and it currently operates 30 Next-Generation 737-800s on a lease from **GECAS** and other lessors. It flies to 25 domestic routes.

**CIT Aerospace** placed a firm order for 30 737 MAX 8s, list priced at \$3 billion (\$100 million each). The lessor will take delivery of the aircraft in 2019 and 2020. **CIT Transportation Finance** President **Jeffrey Knittel**, said the MAX will ensure that the lessor continues to offer a modern fleet. **CIT** has the option to convert the order to the MAX 9. **CIT** ordered 12 737-700s, 58 -800s and 14 -900ERs between June 1999 and December 2010. It has taken delivery of 46 737NGs. The lessor also ordered 10 787-8s in 2006. Two will be leased by **Royal Jordanian** and **Aeroméxico** will lease two. **CIT** is looking at the newly launched 787-10. **CIT** owns or finances approximately 350 aircraft.

**Travel Service** signed a commitment for three 737 MAX 8s at **Paris Air Show**. The airplanes are valued at \$301.5 million (\$100.5 million each) at list prices. **Travel Service** currently operates 28 owned and leased 737NGs. The airline is based in the Czech Republic, and offers charter flights to more than 230 airports on four continents, as well as low-cost scheduled service to major European destinations through its **Smart Wings** brand,

**Ryanair** CEO **Michael O'Leary** signed a firm order for 175 737-800NGs worth \$15.6 billion (\$89.142 million each) at list price. The sale was announced in March. The ceremony at **Paris** completed difficult five-year negotiation process, in which the airline seriously considered buying the A320neo and the **Comac** C919. The 737NG won because it carries nine more passengers than the A320neo. The **Boeing** press release did not mention that the manufacturer sold the NG at a huge discount from the list price. **Ryanair** is looking at the order and option of 200 737 MAX aircraft. Mr. **O'Leary** said the 737 and A320 come out about even on overall fuel efficiency, but the 737-800 and 737 Max 8 are more fuel efficient per seat. The airline wants to install up to 199 or 200 seats in the MAX 8. **Boeing** said it would consider options to meet customer requirement after the aircraft is introduced in 2017. **Ryanair** plans to return up to €1 billion (\$1.3 billion) to shareholders over the next two years through share buybacks and a possible special dividend. The airline returned €1.5 billion to shareholders since 2008, including a €492 million special dividend during its last financial year.

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**Oman Air** purchased five Next-Generation 737-900ER airplanes at the **Paris Air Show**. The order was placed in December 2012 and was listed as "unidentified" on the **Boeing Orders & Deliveries** website until June. It was valued at \$473 million (\$94.6 million each) at current list prices. **Oman Air** was the first customer in the Arabian Gulf region for the 737-900ER. It currently operates 15 737-800NGs and two 737-700NGs.

## Russian Aviation

**Irkut Corporation President Oleg Demchenko** announced at **Paris Air Show** that the MC-21 is "turning from paper to metal," and the company has signed all the supplier contracts. Testing of the jet's **Pratt & Whitney PW1400** geared turbofan engine will begin shortly, and the aircraft's wing design was finalized. Mr. **Demchenko** said **Irkut** won 135 firm orders for the standard MC-21-200 variant, which is list priced at \$72 million. They will also offer larger -300 model. The first MC-21 will fly in 2015, with certification and entrance into service will follow in 2017. **Irkut** will reach break-even by 2025.

**VEB-Leasing** signed a Letter of Intent (LoI) to purchase 30 MC-21 aircraft, list priced at \$2.5 billion (\$83.3 million each). The firm contract is expected to be signed by the end of the year. **VEB** will take delivery of the aircraft from 2018 to 2022. As part of the agreement **Irkut** will fully warrantee each aircraft for 36 months after delivery. **VEB** leased equipment to **Irkut** which will be used to develop and commercially produce the MC-21 family of medium-range aircraft. At the signing ceremony, **Viacheslav Solovyev**, General Director of **VEB-Leasing**, told the press, "The project to build the MC-21 aircraft is important for both the aviation industry specifically and for the national economy as a whole. This agreement is intended to contribute to the process of upgrading and renewal of the fleet of Russian airlines and to the development of the domestic aircraft industry as a whole," **VEB** is backstopped by the **Bank for Development and Foreign Economic Affairs** – **Vnesheconombank**. **Irkut** is a member of **UAC—United Aircraft Corporation**, and currently builds the multi-purpose Su-30SM fighter, the Su-30SM export fighter and the Yak-130, combat and training aircraft.

**Sukhoi Civil Aircraft Company and Ilyushin Finance Co (IFC)** signed the Heads of Agreement (HoA) for twenty Sukhoi Superjet 100 aircraft at the **50th International Paris Air Show**. **IFC** will finance the lease of 15 Sukhoi SSJ100/95B in the South East Asia and the Middle Eastern markets. The other five aircraft will be in Long Range SSJ100/95LR configuration for lease customers. The first deliveries to Ilyushin Finance Co would start in 2015. The Sukhoi Superjet is currently being financed through a dedicated **Russian Government** program for financial guarantee support of Russian industrial exports and high-tech products.

**Bahrain Leasing Company AeroLease — Aircraft and Equipment Leasing Company** signed a Letter of Intent to finance and/or lease

**Diamond Aircraft, Austria, and Rostec**, a Russian industrial conglomerate, will jointly develop and produce a low-cost utility transport aircraft for the Russian market. The composite 19-seater will replace the ageing fleet of **Antonov An-2s** and **Let L-410s**, starting in 2016. The older planes "have low fuel efficiency and high operating costs," said **Rostec** CEO **Sergey Chemezov**, "Local aviation in Russia is in severe crisis as there are no state-of-the-art quality light airplanes of affordable prices. Creating a new aircraft will [fill] this niche and allow the obsolete fleet to be replaced." **Diamond** will build five prototypes, powered by **Austro Engine** diesel powerplants. The airplane will be produced by the **Rostec** subsidiary **Ural Works of Civil Aviation**. Eventually, the engines will be built in Russia as well. **Rostec** forecasts an annual market for 200 aircraft.

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existing and prospective deals for Sukhoi Superjet 100 aircraft in the Middle East and Southeast Asia. **AeroLease** was established in the Kingdom of Bahrain in 2008 and provides services in the aircraft and equipment lease market. The company also provides aircraft management, buying and selling aircraft and structuring deals for the third parties.

## Regional Report

**Bombardier Aerospace** reported that **Ilyushin Finance Co. (IFC)** shareholders approved the leasing company's purchase of 32 CS300 aircraft and options for an additional 10 CS300 aircraft. **IFC** signed a Letter of Intent in 2011 and a conditional purchase agreement in February 2013. The firm order is valued at approximately \$2.56 billion (\$80 million each), based on the list prices. If **IFC** exercises its 10 options, the contract would be worth \$3.42 billion. The purchase agreement allows **IFC** to order the CS300 with the extra capacity seating option. Those planes will be available to international operators interested in higher density configurations. The CS300 is ideally placed between the smaller **Sukhoi Superjet** and the larger-capacity **Irkut MC-21** aircraft, which the lessor committed to purchase, **IFC** said.

**Gulf Air** announced a firm order for 10 CS300 aircraft that was placed in June 2011. The national carrier of the Kingdom of Bahrain also optioned another six aircraft. **Bombardier** booked the order as an "unidentified customer". The CSeries was selected through a detailed and thorough evaluation process, which included other competing aircraft. As of March 31, 2013, **Bombardier** had booked orders and commitments for 388 CSeries aircraft, which includes firm orders for 145.

**Bombardier Aerospace** disclosed that **Odyssey Airlines** was the customer for a previously announced firm order for 10 CS100s. The new airline intends to operate the CSeries aircraft from **London City Airport**. The firm order was placed in June 2011. Based on the list price, the firm order was valued at \$628 million (\$62.8 million each). "We are launching **Odyssey Airlines** with the CS100 aircraft because its transcontinental range will allow us to connect key city airports in Europe and further afield," said **Odyssey's** CEO **Adam D. Scott**. "We have a unique strategy that will offer a premier service with a focus on new destinations that cannot currently be served from **London City Airport**." The jets will be fitted with 100 business class seats.

**Bombardier Aerospace's Annual Commercial Aircraft Market Forecast.** It predicted the need for 12,800 deliveries from 2013 to 2032, worth more than \$646 billion. The manufacturer sees that growth in emerging markets such as China, India, Russia and Latin America will be increasingly important in the aviation marketplace while there still will be demand for new aircraft from the developed markets. The airframer broke down the 20-149 seat market into three segments and expects only 250 deliveries in the 20-59 seat market. The 60-99 seater segment will require 5,650 new aircraft, and 6,900 aircraft will be delivered in the 100-149 seat market. **Bombardier** forecast that 2,950 of the new 60-99 seaters will be regional jets, worth \$105 billion, while 2,700 turboprops will be delivered, presumably including all the 20-59 seaters. The 100-149 seat segment will be worth \$460 billion and demand will be driven by the availability of the new generation of fuel-efficient and technologically advanced aircraft types. North America is expected to remain the world's largest market and will require 3,710 new aircraft. China and Europe with need 2,330 and 1,700 aircraft, respectively. Sixty percent of the current commercial fleet will be retired by 2032 and the 20-59 seat segment will see most of the retirements. Retirements will be driven by technical obsolescence and rising fuel prices.

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**Alaska Air Group** signed a firm contract to acquire three 76-seat **Bombardier** Q400 NextGen turboprop airliners, through the conversion of three previously booked options. The airline also reconfirmed its options for another seven Q400NGs. The Q400s are worth \$98 million (\$32.6 million each) based on the list price. The new aircraft will increase **Horizon Air's** orders for Q400 and Q400 NextGen airliners to 51 aircraft in the world's largest fleet. To date, **Horizon Air** has ordered 100 Dash 8/Q-Series aircraft since 1985. **Bombardier** has booked firm orders for 471 Q400s and Q400NGs to date.

**Arik Air** ordered three CRJ1000 NextGen jets and four Q400 NextGen turboprop airliners. The order was valued at approximately \$297 million. The Lagos, Nigeria-based airline currently operates four CRJ900 aircraft and two Q400 NextGen aircraft.

**Embraer at the 2013 International Paris Air Show:** The manufacturer launched the second generation of its E-Jets family of commercial aircraft, named the E-Jets E2. The family will comprise three new airplanes, the 88-seat E175-E2, the 106-seat E190-E2, and 132-seat E195-E2. The E190-E2 will be developed and built first, and it will enter service in the first half of 2018. The first E195-E2s will be delivered in 2019 and the E175-E2 will come in 2020. The E175-E2 will be one seat row longer than the current E175, while the E190-E2 keeps the same size as the E190, and the E195-E2 will be three seat rows larger than the extant E195 and will seat up to 132 passengers. The E-Jets E2 will feature new aerodynamically advanced, high-aspect ratio, distinctively shaped wings, improved systems and avionics, including fourth generation full fly-by-wire flight controls, and **Pratt & Whitney's** PurePower™ Geared Turbofan high by-pass ratio engines (PW1700G on the E175-E2, PW1900G on the E190-E2 and E195-E2). They will provide double-digit reductions in fuel consumption, emissions, noise and maintenance costs. The E-Jets E2 will be capable of achieving similar costs per seat of larger re-engined narrowbody aircraft, with significantly lower costs per trip, **Embraer** said. The E2s will retain cockpit commonality with current generation E-Jets, but will include **Honeywell's Primus Epic 2** advanced integrated avionics system with large landscape displays, advanced graphics capabilities, and **Honeywell's Next Generation Flight Management System (NGFMS)**, already in development with current-generation E-Jets. **Embraer** estimates it will invest

**SkyWest and ILFC are the E-Jets E2 Launch Customers** and have committed to buy 300 aircraft. The U.S. regional was the first customer for the 80-seat E175 E2 and placed a firm order for 100 and reserved purchase rights for another 100, valued at approximately \$9.36 billion (nearly \$47 million each) at list prices. **SkyWest** ordered up to 200 current generation E175s in May 2013. It is the largest regional airline group in the world, and the parent company of **SkyWest Airlines** and **ExpressJet Airlines**. They are long time operators of **Embraer** aircraft. **SkyWest Airlines** still operates more than 40 EMB-120 Brasilia turboprops on its network in the western states. **ExpressJet Airlines** operates 249 aircraft ERJ-145 family aircraft in the largest ERJ fleet in the world. **ILFC** signed a Letter of Intent (LoI) to buy 25 97-seat E190 E2s and 25 118-seat E195 E2s. The lessor will place options for another 25 of each type. The new aircraft will be delivered between January 2018 and 2023. This was **ILFC's** first order for **Embraer** aircraft. **Embraer** reported that it received LoIs for 15 E-Jet E2s from unnamed customers in Africa, Asia, Europe and South America. The potential orders include 50 options and will be finalized later this year. This was a very strong commercial response to the new aircraft. The competing 100-seat CS100 had won 63 firm orders, 49 options and 17 LoIs since it was launched in 2008. The first CS100 will fly in July and will enter service in 2014. The first E190 E2 will be ready for delivery in the first half of 2018, and the first E175 E2 will enter service in 2020.

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\$1.7 billion over the next eight years, to design and build the E-Jets E2. It also foresees a demand for 6,400 commercial jets in the under-130-seat category, over the next two decades. **Embraer** has captured 42 percent of this segment and will deliver the 1,000th E-Jet later this year, just nine years after the first aircraft entered revenue service.

**Japan Airlines' (JAL)** order for another four EMBRAER 170 jets was announced at **Paris**. **Embraer** recorded the **JAL** order as "undisclosed" until now. **JAL** has purchased 15 E170s to date. The E170 has a list price of \$38.7 million. Matching the rest of the fleet, the four new E170s will be configured with 76 seats in a single-class layout and will be operated by **J-AIR**, **JAL's** wholly owned subsidiary. The airline currently operates twelve E170s, and received the first one in 2008. **J-AIR** said it serves 27 destinations in 20 Japanese cities. The new E-Jets will be able to expand its network from its main base at **Osaka Itami Airport**.

**Air Costa of Vijayawada, India**, announced its order for one new EMBRAER 190. The firm order was previously listed in **Embraer's** backlog as from an "undisclosed" customer. The new scheduled regional airline leased two EMBRAER 170s from **ECC Leasing**, **Embraer's** wholly-owned leasing subsidiary. **Air Costa** will initially connect the economically booming cities in southern India such as Bangalore, Chennai, Hyderabad and Vijayawada, as well as key secondary cities in the north and northwest of the country.

**A New Lithuanian Carrier, Air Lituanica**, ordered four EMBRAER 190s, worth \$46.2 million each at list price. They can carry up to 114 passengers in single-class configuration. It will launch services with one EMBRAER 170 leased from an unidentified third party in June and will lease an EMBRAER 175 from **ECC Leasing Company**, in July. The E170 and E175 are configured with 76 and 86 seats in single class, respectively. **Air Lituanica** will fly the E-Jets on routes between Vilnius and Brussels, Amsterdam, Berlin, Prague, Munich and Moscow. The airline will add three or four more E-Jets to increase frequencies and expand its route system over the next three years.

**Consorcio Venezolano de Industrias Aeronáuticas y Servicios Aéreos, S.A. (Conviasa)**, a Venezuelan airline, signed a contract for seven EMBRAER 190s, through the exercise of options from its original order of July 2012, for six firm orders and 14 options. **Embraer** announced the **Conviasa** purchase at **Paris**. The airline now has 13 firm orders and seven options for the E190 jet. It operates six E190s on regional routes in Venezuela and in the Caribbean and will take delivery of another six by the end of the year. All of its jets are configured with 104 tourist class seats. The E190 is list priced at \$46.2 million each.

**HGI Capital Group** placed a firm \$482 million order for 10 ATR 72-600 regional turboprops. The Barcelona-based aircraft leasing firm optioned another 10 aircraft. **HGI** will lease the ATR 72-600s **Passaredo Airlines**, Brazil. The lessor also became a shareholder in the airline following approval by the Brazilian **National Agency for Civil Aviation (ANAC)**. The airline will use the new aircraft to expand its regional route system.

**Air Lease Corporation (ALC)** will purchase five more ATR 72-600s. The lessor placed its first order for 10 aircraft at **Farnborough** in 2010, and this order will bring its **ATR** fleet to 21 aircraft. Since 2010, **ATR** has received nearly 110 firm orders from leasing companies. This represents approximately one quarter of the total orders for this period. The ATR 72-600 accounted for three-quarters of all under-90 seat regional aircraft purchased by all lessors worldwide.

**ATR** booked an order from **LIAT-The Caribbean Airline**, Antigua, and Barbuda, for two ATR 42-600s. The airline will lease or buy four ATR-42-600s and four ATR 72-600s (plus two options). It took delivery of the first ATR 72 in mid-June, through a lease from **GECAS**.

**Two Undisclosed Customers** ordered ATR 72-600s at **Paris Air Show**. One customer bought 25 aircraft and optioned another 25. The second company ordered five ATR 72-600s. By the end of the show, **ATR** had a backlog of 270 firm aircraft orders worth an estimated \$6.5 billion. The current order book fills **ATR's** production slots until the end of 2016. The orders booked at **Paris** exceeded the year-long target of 80 new sales. **ATR** will increase output from 80 airplanes this year to 90 in 2014 and possibly more in 2015. The manufacturer is considering the development of a new 90-seat turboprop for a planned entry into service in 2018 or 2019. A business plan was delivered to shareholders who will determine whether to go ahead or not.

**Turboprop Aircraft Manufacturer, Avions de Transport Regional (ATR)**, reported that the **50th International Paris Air Show** was the best in **ATR's** history. The Franco-Italian company signed contracts for 173 planes, including 83 firm orders. The firm orders were valued at \$2 billion and the total contracts were worth \$4.1 billion. Danish Aircraft lessor **Nordic Aviation Capital (NAC)** signed firm order agreements for five ATR 42-600s and 31 of the larger ATR 72-600s. The company optioned another 25 -600s and took purchase rights for a further 20 aircraft. **NAC** will choose the type later. The whole deal is list priced at \$2.1 billion. **NAC** will accept the first ATR 42 this autumn. The remaining 34 aircraft will be delivered over the next seven years. The company is responding to strong demand for turboprops in Asia, and in Central and South America. **NAC** will have 150 airplanes in its fleet when the firm orders are filled by the end of 2016. The lessor intends to grow its fleet to 300 aircraft within the next few years. The company is very interested in the proposed 90-seat turboprop, and has encouraged **ATR** to launch the program soon.

## Engine News

### **Rolls-Royce Trent Engine Sale at Paris Air Show:**

**Air Lease Corporation (ALC)** chose Trent 1000 engines worth \$160 million at list prices, for the four **Boeing** 787-9 Dreamliners it ordered. The order marks the first Trent 1000 selection by the U.S. leasing company. The Trent 1000 was the first engine to power the 787s which were delivered in October 2011. **Rolls-Royce's** Trent 1000-TEN was the launch engine for the **Boeing** 787-9 and was chosen by **Singapore Airlines** to power its 787-10 aircraft. **United Airlines** picked 97,000-pound thrust Trent XWB-97 engines worth \$880 million at list prices. They will power the 35 **Airbus** A350-1000 aircraft that the airline ordered at **Paris**. The contract includes a long-term **TotalCare** services maintenance package. **Philippine Airlines** selected Trent 700 engines, worth \$1.4 billion at list prices, to power 20 **Airbus** A330 aircraft. This was **Philippine's** first selection of Trent engines and also includes long-term **TotalCare** service support. **Scandinavian Airline System (SAS)** purchased **Rolls-Royce** engines and maintenance for 12 **Airbus** widebodies in a deal worth \$1 billion at list prices. Trent XWBs will power the eight A350-900s, and Trent 700s will be fitted to four A330-300s. **SAS** already operates four Trent 700-powered A330s.

**Pratt & Whitney Sales:** **Spirit Airlines** selected **Pratt & Whitney** PurePower PW1100G-JM engines to power the 45 A320neos it ordered recently. **Spirit** chose **International Aero Engines' (IAE)** V2500 engines to power 30 firmly ordered A320ceo aircraft. PurePower PW1100G-JM engines will power the 12 A320neo aircraft that **Aviation Capital Group** ordered. Deliveries will start in 2018. **Pratt & Whitney** announced orders for more than 3,500 PW1100G engines, which included announced and

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unannounced firm orders and options. **China Southern Airlines** selected PW4170 Advantage70 engines to power the 16 A330-300s that it ordered recently. The contract is valued at \$1.29 billion and it includes a 15-year **Fleet Management Plan** for engine maintenance.

**Pratt & Whitney** will provide 200 engines for up to 100 **Embraer** E-Jets E2 aircraft that **ILFC** intends to buy. The Letter of Intent (LoI) covers up to 200 PurePower PW1900G engines with deliveries scheduled to begin in 2018.

**Pratt & Whitney** started flight testing the PurePower PW1100G-JM engine for the **Airbus** A320neo jetliner. In early June, this powerplant successfully completed its maiden flight on a 747 test bed from **Pratt & Whitney's** facilities in Quebec, Canada. The engine was ground tested for more than 375 hours. Certification of the PW1100G-JM is planned for the third quarter of 2014.

**CFM International at Paris Air Show.** The company logged 660 orders and commitments during the four trade days. **CFM** announced orders for 468 LEAP and 192 CFM56 engines and related service agreements, worth a combined \$15 billion at list price. New orders to date now stand at 1,654, including installed, military, and spare engines. **LATAM Airlines Group** signed a Memorandum of Understanding (MoU) to purchase CFM56-5B engines to power 25 firm A321ceo (current engine option) and five firm A320ceo aircraft, in addition to options for 20 additional A321ceo aircraft. The agreement for the installed and spare engines and maintenance agreement is potentially valued at approximately \$1.1 billion at list prices. Under the terms of the rate-per-flight-hour service agreement, **CFM** will guarantee engine maintenance costs on a dollar per engine flight hour basis.

**International Lease Finance Corporation (ILFC) Splits Engine Order.** **ILFC** added 20 LEAP-1A powered A320neo aircraft to its previous order for 40 A320neo Family aircraft. The newest engine order is valued at \$260 million at list price, and the first aircraft will be delivered in 2016. **ILFC** selected **Pratt & Whitney** PurePower PW1100G-JM engines for an additional 30 A320neo Family aircraft bringing the lessors total commitment to 180 engines.

**BOC Aviation** ordered LEAP-1A and CFM56-5B engines worth \$460 million at list prices. They will power 10 A320neo Family aircraft and 10 A320ceo aircraft.

**Xiamen Airlines** signed a Letter of Intent (LoI) to order GENx-1B engines for its six **Boeing** 787-8 Dreamliners. The LoI also includes a 10-year **OnPoint** solution agreement for **GE** to provide maintenance, repair and overhaul of the airline's GENx fleet. The engine order (at list price) and the **OnPoint** agreement were valued at more than \$560 million over the life of the engines. Delivery of the aircraft will begin next year.

## Order Changes and Cancellations

**Airbus Order Shuffle.** In May, **Tunisair** dropped its three A350-800s, lowering **Airbus'** backlog for the type to 89 aircraft. The flag-carrier had ordered the three A350s, three A330s and 10 A320s in July 2008. **Tunisair** has not clarified its reasons for the cancellation, but it recently put older aircraft, including three A300s, up for sale. Its A330 orders remain on the books. Several -800 customers have converted to the larger variants of the A350. **Avolon** traded eight A320 orders for four A319 and four A321 orders. **Avolon** retains 20 A320s in backlog and has not taken delivery of any **Airbus**

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narrowbodies. **Intrepid Aviation Group** cancelled one of its seven A330-200F freighter orders and purchased its eighth A330-300 passenger plane. The lessor ordered 20 A330Fs in June 2007 and intended to take delivery of them from 2010 through 2012. Over the last few years, it exchanged A330F orders to passenger models and has taken delivery of two of six A330-200s on order.

**Boeing's Order Cancellations and Changes.** In May, **Southwest** dropped 30 737-700s and converted five 737-700 orders to the -800 type. As of June 1, the airline had 92 737-700s and 45 737-800s in backlog. **Aviation Capital Group** exchanged two -700 orders for the larger -800 type. **Russian Technologies** cancelled orders for two -700s and two -900ERs and added four -800s to its backlog. It now has ordered 13 -700s, 29 -800s and eight -900ERs. **GOL Airlines** cancelled 21 737-800 orders outright. **ILFC** dropped three -800s from its backlog. **Jet Airways**, India, switched 10 787-8 orders for 10 787-9s. The Dreamliners were ordered in December 2006. During June, several customers cancelled 30 737 orders, **Boeing** said. As of July 2, **Boeing** had lost 87 737 orders as well as orders for five 747s and eight 777s.

**Flyby** delayed delivery of 16 EMBRAER 175s from 2014-2015 to 2017 to 2019.

## Leasing Companies

**International Lease Finance Corporation (ILFC)** will lease four A330-200s to **Aerolíneas Argentinas** this year. The four previously-operated aircraft will be completely modernized with new cabin interiors including state-of-the-art Inflight Entertainment options available in every seat, **ILFC** said

**Air Lease Corporation** announced the long-term lease of two new ATR 72-600 aircraft to **Golden Myanmar Airlines (GMA)**. They were scheduled for delivery in January and March of 2014. **Golden Myanmar Airlines** was Myanmar's first scheduled domestic and international low cost carrier, and it was established in July 2012. **GMA** is based in Yangon, Myanmar, and it currently operates one A320 jet on routes to Bangkok and Mandalay.

**Jet Time**, the Copenhagen, Denmark-based, air-charter company, will lease six ATR72-600s from **Nordic Aviation Capital (NAC)**. The first two firm aircraft will be delivered in October 2013, and will immediately be ACMI wet-leased to **Scandinavian Airlines System (SAS)**.

## Airline News

**The European Commission Approved Delta Air Lines' Purchase** of 49 percent of **Virgin Atlantic**. The **Commission** was not concerned about the deal because **Delta** and **Virgin** would continue to face competition from **British Airways**, **American Airlines** and **United Continental**. The **Department of Justice** also closed their review of the transaction and did not object. **Delta** said the purchase allows it to expand its access to **London's**

**Scandinavian Airline Systems (SAS)**, flag carrier for Denmark, Norway, and Sweden, agreed to lease two more new 737-800s from **GE Capital Aviation Services (GECAS)** for hand over in 2014. The planes will further expand and modernize the carrier's fleet of approximately 130 aircraft. **SAS** has taken delivery of seven 737-800s leased from **GECAS**. The aircraft were delivered from April 2012 to May 2013 and came from **GECAS'** existing order book.

**Heathrow Airport.** The \$360 million purchase (from **Singapore Airlines**) was announced in December, and it will lead toward a full joint venture between the two carriers. They will code share on 91 **Delta** trans-Atlantic and domestic routes, and 17 **Virgin Atlantic** domestic and international routes. The **Department of Transportation** will finish its review of the application for antitrust immunity concerning nonstop U.S./U.K. routes in the third quarter of 2013. The launch of the **Delta/Virgin Atlantic** joint venture is expected in the winter of 2014. **Delta** said this will deliver further significant consumer benefits and vibrant competition to the trans-Atlantic market. New York-London is the world's busiest route for premium travelers. North Atlantic flights generate about one-quarter of all global first- and business-class fare revenue, **IATA** said; twice as much as second-place trans-Pacific routes. The carriers will target advertising to win more of those business fliers.

**IATA Posts June Jet Fuel Prices.** The association updates the world's average jet fuel price each week. On June 14, the average price of fuel was \$2.884 per gallon. The fuel price was \$2.71 per gallon on April 26. The mid-June price was 5.7 percent higher than in the previous month, and was 6.5 percent less than in June 2012. The price of fuel is affected by location. It was only \$2.829 in the Middle East region and was as high as \$2.987 per gallon in Latin America. **IATA** forecast that the global airline industry's fuel bill will total \$124.6 billion in 2013. This was a decrease of \$3 billion over 2012.

**ANA-All Nippon Airways Will Buyout AirAsia's Share** of their joint-venture **AirAsia Japan**. The Japanese budget airline was founded in August 2011; **ANA** owns 67 percent. It will buy **AirAsia's** third for ¥2.45 billion (\$25.11 million), which covers the Malaysian airline's debt and investment. **AirAsia Japan**, based at Tokyo's **Narita Airport**, had failed to thrive due to ineffective marketing and a non-user-friendly booking website, **ANA** claimed. The low-cost carrier (LCC) never reached break-even since it began flights to five cities in Japan and two in South Korea. **ANA** saw its operating profit fall by about ¥3.5 billion (\$35.87 million) in the past fiscal year, due to losses at **Air Asia Japan**. **ANA** decided it would be better to operate the LCC as a wholly owned unit. In July, **ANA** will decide how to run the carrier and what to name it. It may be merged with **ANA's** other budget joint-venture, **Peach**, which is based at Osaka's **Kansai Airport**. **AirAsia Japan** currently leases five A320s from **AirAsia**. It will return some of them in September with the rest by the end of October. **ANA** may have to use its own planes for **AirAsia Japan** services in October or to cancel some flights. The parent airline has the option to lease other A320s or **Boeing** 737s, buy second-hand jets, or to re-configure its own A320s for the LCC. **AirAsia** said that differences in opinion on how to manage the business contributed to the breakup. **AirAsia Group** CEO **Tony Fernandes** said, **ANA** "just didn't understand the low-cost business." The partners couldn't agree on routes to fly out of **Narita**, and "we just couldn't agree on the right people to manage the business and the right way to manage the business," Mr. **Fernandes** said. There was a clash of corporate cultures from **ANA's** emphasis on full-service versus **AirAsia's** strengths as a budget airline. He commented that letting **ANA** appoint the CEO and CFO was a mistake. Mr. **Fernandes** said, "I remain positive on the Japanese market and believe there is tremendous opportunity for a low-cost carrier to succeed. We have not given up on the dream of changing air travel in Japan and look forward to returning to the market." **AirAsia** said it was approached by three or four potential partners. Its next partner may not even be an airline, he said. **AirAsia** gets 80 percent of its earnings from its Malaysian operations. It has a fleet of 124 A320s and has invested heavily to expand into new markets to stay ahead of rivals such as **Lion Air**, **Tiger Air** and **Jetstar**.

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**PT Garuda Indonesia** may buy **Airbus A380s** or **Boeing 747-8Is** in partnership with the **Indonesian Government** to ferry religious pilgrims to Saudi Arabia. The airline is considering three to five orders. The contract will be contingent on an agreement with government officials, which may come very soon. The world's most populous Muslim nation needs the jumbo-jets to fly the annual Hajj. The airline intends to take advantage of **Boeing's** and **Airbus'** need to fill near-term production slots. **Garuda** could win steep discounts on the price and to take delivery in 2015.

**Monarch Airlines** said it plans to order up to 62 single-aisle jetliners by October 1. The U.K. charter carrier intends to transform itself into a discount operator. **Monarch** is considering the A320ceo and the A320neo families, the 737NG and 737 MAX, as well as the new **Bombardier CSeries** jet. **Monarch's** current short-haul fleet consists of A320s and A321s, which may give **Airbus** a leg up in the competition. The airline is also seriously looking at the **Boeing 737-800NG** and -900NG and the upgraded MAX, Finance Director **Robert Palmer** said. The CSeries offers "amazing" seat costs and the 150-to-160-passenger layout is very attractive. If **Monarch** buys the CSeries, it would probably order larger planes (180-220 seats) from either **Airbus** or **Boeing**, he said. "We've got a lot of options and we're going to narrow those down over the next couple months." We have a unique, once-in-a-generation opportunity to make a real decision against whatever is in the marketplace without preference," Mr. **Palmer** said. The aircraft would be delivered through 2024. The airline added two more A320s this year to fill its short-term needs. It will operate 39 airplanes by December 2013. **Monarch** will retire its three A300s, three **Boeing 757s** and two other planes over the next two years. Its two A330-200s will continue to meet the company's wide-body needs for several more years.

**Etihad Airways** signed a Memorandum of Understanding with the **Serbian Government** to expand its commercial partnership with the unprofitable **JAT Airways**. The two companies code-share on 23 **JAT** flights in Europe and 21 **Etihad** services. **Etihad** began daily flights to Belgrade on June 15. A detailed proposal from the Abu Dhabi-based airline is expected soon. Serbia has been trying to find a strategic partner for its flag carrier for years. A strategic partner will help **JAT** renew its fleet and take over \$170 million (\$220 million) in liabilities. **JAT** lost 3.68 billion dinars (\$43.2 million) in 2012 and lost 3.33 billion dinars (\$39.1 million) in 2011.

**India's Foreign Investment Promotion Board** voted to delay approval of **Etihad Airways'** purchase of 24 percent of **Jet Airways**. The authorities wanted more details about the carrier's "effective control and ownership." After approval, **Jet** needs to obtain clearances from India's **Securities and Exchange Board** (the stock market regulator) and the home ministry. The delay caused **Jet's** stock price to fall 13 percent since June 10. **Jet** founder and Chairman **Naresh Goyal** will retain 51 percent of the airline after the deal closes, **Etihad** will own 24 percent and the other 25 percent will be held by the public. The airline wants to add aircraft and cut its debts after six years of losses. The 20.6 billion rupees (\$356 million) **Etihad** is paying for the stock will be used to repay working debt and **Jet** is considering an order for more **Boeing 737s**.

**Air France/KLM Group** tentatively agreed to sell its **CityJet** regional airline to **Intro Aviation GmbH**. **CityJet** was offered for sale in September 2012. The regional operation has not been profitable for years. It was the number one airline at **London City Airport**, and connects the city's financial center with more than 480 weekly flights to more than 20 cities across Europe. **CityJet** is based in Dublin and

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has 19 Avro RJ85s and a dozen Fokker 50s in its fleet. **Intro Aviation** was co-founded by retail entrepreneur **Hans-Rudolf Woehrl**, and it bought German airline **Deutsche BA** from **British Airways** for one euro in 2003. **Intro** rehabilitated the airline, renamed it **DBA** and sold it to **Air Berlin** in 2006. **Intro** performed the same magic with **LTU Group** in 2006. The charter carrier was sold to **Air Berlin** in 2007.

## Technical

**Aviation Partners Boeing (APB)** formally launched the 737-900ER (Extended Range) **Split Scimitar Winglet** program at the **Paris Air Show** with an order from **United Airlines**. The design was recently patented and includes a new aerodynamically shaped ñScimitarò winglet tip cap and a new Scimitar tipped Ventral Strake. The program will retrofit existing **Boeing** Next-Generation 737 Blended Winglets. **APB** launched the **Split Scimitar Winglet** program for the 737-800 with another **United Airlines** order. The **FAA** supplemental type certification (STC) for the modified 737-800 is targeted for October, with **EASA** certification expected in December 2013. Certification flight testing of **Split Scimitar Winglets** on the 737-900ER will begin in November with a **FAA** STC due in late February 2014. **APB** expects the **Split Scimitar Winglet Systems** on a 737-900ER to save **United** over 57,000 gallons of jet fuel per aircraft per year (worth approximately \$171,000 per year) and will also provide a reduction of carbon dioxide emissions of more than 600 tons per aircraft per year. The modified 737-900ER will be able to carry up to 3,300 pounds more payload or increase its range up to 60 nautical miles. **APB** also expects an improvement in low speed performance and significant take-off benefits from high/hot or obstacle limited runways. The company intends to certify various models of 737-700s, BBJs and -900s. Nearly 5,000 **Blended Winglet Systems** are now in service with over 200 airlines in more than 100 countries.

**Airbus** Received **European Aviation Safety Agency (EASA)** Certification for Sharklet-equipped A319s powered by **CFM International** CFM56 engines. This shortened-fuselage A320 Family member with these fuel-saving wingtip devices will enter service later this year.

## Cargo Pallet

**Aeronautical Engineers (AEI)** will provide four 737-400SF 11 pallet configuration cargo conversions to **FARNAIR Europe**. The airline placed options for four additional conversions. The first high-gross-weight 737-400 will undergo

**Deutsche Lufthansa** is in advanced talks with **Airbus** and **Boeing** to buy up to 50 long-haul aircraft to replace its A340 fleet, airline CEO **Christoph Franz** told the press. It is looking at the **Boeing** 777-9X to replace its fleet of 13 747-400s. The 747-400s will be retired at the end of the decade when the updated 777 will be ready. The twin-engine jets will be more fuel efficient and carry nearly as many passengers as the 747s. **Lufthansa** has ordered 17 **Airbus** A380s and 19 **Boeing** 747-8Is. The 35 A340-300s and 24 A340-600s could be replaced by the **Boeing** 787-9, the newly launched 787-10 or the **Airbus** A350-900 and larger -1000.

**Volga-Dnepr Airlines**, the outsize air freight carrier, will base three upgraded **Ilyushin** Il-76TD-90VD freighters at **Paris-Vatry Airport**. The airline has five Il-76TD-90VD aircraft equipped with new engines and avionics. Unlike the standard Il-76, the airplanes meet European standards on noise and emissions. **Volga-Dnepr** will establish a base at the airport east of the French capital to develop a new cargo hub for Western Europe. The freighters are able to serve markets in Australia, Europe, Japan and North America, regions that banned older versions of the Il-76 in 2000.

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freighter modification in August 2013 at **AEI's** authorized conversion center, **Commercial Jet. Astral Aviation** of Nairobi, Kenya, ordered one firm and two optioned MD-83SF 12 pallet configuration conversions. The aircraft will all be high-gross-weight MD-83s with auxiliary fuel tanks which will allow for a 2600 nm range. **Commercial Jet** will start the first modification in August 2013. **Yangtze River Express/HNA** contracted for three firm high-gross-weight 737-400SF 11 pallet configuration modifications. The first -400 (SN 28759) will undergo freighter conversion in July 2013 at **Boeing Shanghai Aviation Services** in China.

**PEMCO World Air Services (PEMCO)** announced the completion of five 737-400 freighter conversions for Shenzhen-based **SF Express** in June.

## **Military Market**

**Embraer and Boeing to Jointly Market and Sell the KC-390** is a multi-mission mobility and aerial refueling aircraft with advanced capabilities in the medium-sized airlift market. **Boeing** will lead KC-390 sales, sustainment and training opportunities in the U.S., UK and select Middle East markets. **Embraer** will manufacture the aircraft and collaborate on sales, sustainment and training. **Carlos Aguiar**, President and CEO of **Embraer Defense & Security** said, "This agreement strengthens the level of cooperation between both companies and the defense industries of Brazil and the United States." "Our relationship with **Embraer** continues to grow and demonstrates our commitment to Brazil," **Boeing Defense, Space & Security Business Development and Strategy Vice President Chris Raymond** said. The "KC-390 complements our mobility portfolio by providing a versatile, affordable aircraft." In 2012, the two companies agreed to collaborate on aircraft efficiency and safety, research and technology, defense products and sustainable aviation biofuels, **Boeing** said. The potential market for KC-390 was originally estimated at 700 aircraft, but once the plane is flying, that number is likely to increase. **Embraer** completed the Critical Design Review of the project and it is on schedule.

**Airbus Military's Second Production A400M (SN 008)** flew on June 7, and it will be delivered to the **French Air Force** in the third quarter. It is one of four next-generation airlifters that **Airbus Military** will build in 2013. The first A400M Atlas (SN 007) flew in March and will be delivered to the **French Air Force** in July. The plane was displayed at the **Paris Air Show**. **Airbus Military** expects to fly the **Turkish Air Force's** first A400M (SN009) in July and it is scheduled for delivery in late September. This will be followed by a third example (SN 010) to France in December. **Airbus** developed the heavy cargo and troop transporter at a cost of €20 billion and it is four years behind schedule. Problems with Western Europe's largest turbo-prop engines led to a €3.5-billion bailout in 2010. Management expects a new export order could be won in the next 18- to 24-

**The Indian Air Force (IAF)** flew its first **Boeing C-17 Globemaster III** to India in June, becoming the newest operator of the leading airlifter. **Boeing** will deliver four more C-17s to the **IAF** this year and five in 2014. This first aircraft was officially delivered in January, but underwent a flight test program at **Edwards Air Force Base** in Palmdale, California. **Boeing** has delivered 254 C-17s, including 222 to the **U.S. Air Force** and a total of 32 C-17s to foreign customers. **Boeing** will support the **IAF C-17 fleet** through the **Globemaster III Integrated Sustainment Program (GISP) Performance-Based Logistics** contract. The **GISP** "virtual fleet" arrangement ensures mission readiness by providing all C-17 customers access to an extensive support network for worldwide parts availability and economies of scale, **Boeing** said.

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months. Germany has 53 A400Ms on order but intends to operate just 40 of them. The rest could be for sale to other operators. France may operate fewer than the 50 aircraft that it ordered. The company will look to offer any surplus slots to the export market from late this decade if any of the core nations opt to reduce the size of their planned fleets.

**The U.S. Coast Guard** took delivery of its 15th HC-144A **Ocean Sentry** maritime patrol aircraft from **EADS North America**. The **Ocean Sentry** is based on the **Airbus Military CN235** tactical airlifter. The **Coast Guard** has three HC-144A Maritime Patrol Aircraft on order scheduled for delivery in 2013 and 2014. The **USCG** plans to operate a fleet of 36 **Ocean Sentries**, and took delivery of the first one in 2008.

## AIRCRAFT DELIVERIES & SALES

 **Airbus** WORLDWIDE AVIA

**Airbus A319.** Airbus delivered only two A319s in May. **Tibet Airlines** accepted its seventh of nine ordered -115s (SN 5529). It was manufactured in Tianjin, China. **Sichuan Airlines** leased -133 (SN 5609) from **CIT Leasing**. **Werner Aero Services** purchased two -131s (SN 0976 & 1010) from **Wells Fargo Bank** and **CIT Aerospace International**. The aircraft are powered by **IAE V2524-A5** engines and were last operated by **TAM Airlines**, Brazil. **Werner Aero Services** is an aviation asset management company, and an aftermarket supplier of aircraft, aircraft engines and aircraft spare parts.

**Airbus A320.** Airbus delivered 28 A320s in May. **Vueling Airlines** leased two -232/Ws (SN 5599 & 5612) from **BOC Aviation**, one -214/W (SN 5616) from **CIT Leasing** and one -232/W (SN 5620) from **AWAS**. This was the second new -232/W that **AWAS** had leased to **Vueling** that was fitted with advanced Sharklet wingtips. **GECAS** leased two -214s (SN 5574 & 5597) to **Citilink Garuda Indonesia**. **Aeroflot** leased one -214 (SN 5580) from **SMBC Aviation Capital** and one -214 (SN 5614) from **AWAS**. **Air Lease Corp, (ALC)** leased a second -214 (SN 5607) to **Siberia Airlines** (formerly **S7 Airline**). **Jazeera Airways** leased -214 (SN 5623) from **Al Sahaab Aircraft Leasing**. It was the lessor's third and final aircraft on order. **China Southern Airlines** leased one **Tianjin FAL**-built -232 (SN 5506) from **ICBC Financial Leasing**. **Tiger Airways** received -232 (SN 5605) and leased it to **Mandala Airlines**. **Jetstar Japan** leased -232/W (SN 5618) from **Qantas Airways**. In Asia, **Airbus**

**The US Defense Security Cooperation Agency (DSCA)** may sell two **Lockheed Martin C-130J-30** tactical transports to the **Libyan Government** for an estimated \$588 million. The deal would include 10 **Rolls-Royce AE 2100D3** engines, support and test equipment, and other government furnished equipment, such as radios. The two new C-130Js will be used to move supplies and people within the vast and sparsely populated country. The **DSCA** said, "This medium-lift capability should assist with border security, the interdiction of known terrorist elements, and rapid reaction to internal security threats. In addition, Libya intends to utilize these aircraft in support of regional peacekeeping and humanitarian operations." The **Libyan Air Force** currently operates one C-130H and one civilian L100. Over 40 years ago, Libya purchased eight C-130Es for a total of \$70 million (\$9.125 million each). The planes were built and paid for, but never delivered. They still rot in the muggy north Georgia weather on a dirt lot next to **Dobbins Air Force Base**. The post-Qaddafi **Libyan Government** has asked to be compensated for the airplanes. The air museum at **Dobbins AFB** wants one for its collection and the rest may be scrapped due to their deteriorated condition.

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delivered one -232/W (SN 5577) to **IndiGo**, one -216/W (SN 5619) to **AirAsia**, and one **Tianjin-FAL**-built -232 (SN 5516) to **China Eastern Airlines**. **Air Astana**, Kazakhstan's flag carrier, received its first -232/W (SN 5613) equipped with Sharklet wing tips. In Europe, **Wizz Air** took delivery of another two Sharklet-fitted -232/Ws (SN 5615 & 5617). The latter airplane was operated by **Wizz Air Hungary**. **Lufthansa** bought -214/W (SN 5601), and it has 17 more on order for delivery by 2015. **Iberia** accepted its 70th -216 (SN 5590), and **easyJet** acquired its 58th -214 (SN 5592). In the Americas, two -214/Ws (SN 5583 & 5586) went to **LATAM Airlines Group**, and one -214/W (SN 5621) went to its merger partner **TAM Airlines**. **Avianca** accepted -214/W (SN 5622). **Spirit Airlines** leased -232/W (SN 5624) from **AFS Investments**, and **Volaris** leased one -233/W (SN 5595) from **Wells Fargo Bank Northwest**, trustee.

**LATAM Airlines Group**, the holding company for **LAN** and **TAM Airlines**, has taken delivery of its 200th A320 aircraft at **Paris Air Show** in June. The **TAM A320-214/W** (SN 5643) was equipped with Sharklet fuel-saving wing-tip devices and powered by CFM56 engines. **LATAM** has ordered a total of 380 aircraft, has almost 250 aircraft in operation, and their joint **Airbus** backlog is nearly 170, making them the third largest airline customer and third largest operator of **Airbus** aircraft in the world. The airline group is also the largest A320 operator in Latin America and one of the largest in the world.

**GE Capital Aviation Services (GECAS)** leased the tenth new -214 (SN 5640) to Japan's **Peach Aviation** in June. The airline leased its first -214 from **GECAS** in November 2011 and it has been growing since then. All 10 aircraft were part of **GECAS'** existing order book with **Airbus**.

**Air New Zealand** has taken delivery of its first of 10 A320-232/Ws (SN 5629) equipped with Sharklets, at a ceremony during the 50th **Paris Air Show**. **Airbus** launched the Sharklet during the November 2009 **Dubai Air Show**, and **Air New Zealand** was the first to commit to the fuel saving devices. So far more than 70 Sharklet aircraft have been delivered to 20 customers. In total some 44 customers have ordered that type of aircraft. Sharklets are standard on all A320neo aircraft.

**Airbus A321**. **Airbus** delivered six A321s in May. **Monarch Airlines** leased two -231s (SN 5582 & 5606) from **Aviation Capital Group**. **Air Lease Corp, (ALC)** leased -211 (SN 5603) to **Thomas Cook Airlines/Condor**. **Turkish Airlines** bought its 37th -231 (SN 5584), and **US Airways** received two more -211s (SN 5588 & 5594).

In May, **Comlux Malta** took delivery of the first ACJ321-211 (SN 5538) and flew it to Indianapolis, Indiana, where it is being outfitted with VVIP cabin by **Comlux America**. The plane is due for completion in 2014. **Comlux** is the first company to operate every corporate **Airbus A320 Family** variant and its fleet now includes five **Airbus** corporate jets. Like the **Airbus ACJ318**, **ACJ319** and **ACJ320**, the **ACJ321** will have the widest and tallest cabin of any business jet and additional center tanks will give the **ACJ321** extra range. **Comlux** is celebrating its 10th anniversary, and started to operate the **ACJ Family** in 2006. More than 170 **Airbus Corporate Jets** have been sold worldwide, and they are flying on every continent, including Antarctica.

**Airbus A330**. **Airbus** delivered four -200s, two -200Fs, and one -300s in May. **Air Pacific** received its second of three -243s (SN 1416), and **US Airways** accepted two more -243s (SN 1415 & 1417) for a total of nine. The airline has six more on order. **Airbus Military** took delivery of -243 (SN 1419) for

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conversion to a tanker/transport. **Etihad Airways** acquired its third of four -243Fs (SN 1414) and **Turkish Airlines** received its fourth of five -243Fs (SN 1418). **Air China** purchased its 26th -343E (SN 1413). The flag carrier has four more on order.

**Cebu Pacific** took delivery of its first A330-343E (SN 1420) in June. The aircraft is the first of four A330s to be leased by **Cebu Pacific** from U.S. lessor **CIT Leasing**. The aircraft will be used to launch the carrier's new long-haul low-fare operations. The A330s are fitted with 436 tourist class seats. **Cebu** will operate the first aircraft on medium-haul regional routes, before launching its first long-haul services to Dubai in October.

**AerCap** will split the financing of 10 **LATAM** A330-200s that are being acquired under purchase and leaseback transactions between the debt and the capital markets. **AerCap** said the 10-aircraft transaction was valued at \$650 million and the A330s average four years of age, having been delivered between 2007 and 2011. The transactions closed in June.

**AWAS** leased an A330-300 from its current portfolio to **Air Europa**, a well-established Spanish charter and scheduled service airline. The A330 will be used on trans-Atlantic services

**Airbus A380**. **Emirates** accepted two -861s (SN 113 & 116) in early May. **Airbus** displayed **British Airways'** first -841 (SN 095) at **Paris Air Show** in mid-June and delivered it to the airline in early July.

## Boeing

**Boeing 737 NG**. **Boeing** delivered 40 737s in May, and **American Airlines** received four of them. The airline acquired four -823/Ws (SN 31169, 31171, 33321 & 33486), and sold them to the **Wells Fargo Bank Northwest**, trustee, for lease back. **United Airlines** bought two -924ER/Ws (SN 31648 & 37100). The U.S. Navy accepted its ninth production -8FV/W i P-8A Poseidon (SN 40820) and **Alaska Airlines** received -990ER/W (SN 35206). Lessor **Aviation Capital Group** leased one -8U3/W (SN 38884) to **Garuda Indonesian** and one -8JP/W (SN 40544) to **Norwegian Air Shuttle**. **GECAS** took delivery of three -86N/Ws and leased one -86N/W (SN 38039) to **SAS**, leased one -86N/W (SN 41259) to **SpiceJet**, and leased one -86N/W (SN 41264) to **Skymark Airlines**. **Skymark** currently operates a fleet of 30 -800s to 15 destinations in Japan. **SpiceJet** also leased -8GJ/W (SN 39430) from **AWAS**. **China Airlines** leased -8Q8/W (SN 41787) from **International Lease Finance Corporation (ILFC)**, and **BOC Aviation** leased another -8AL/W (SN 39058) to **Jet Airways**

**Boeing 717**. **Boeing Capital Corp.** leased another five 717-200s to Australia's largest regional airline, **QantasLink**. The airline has 13 in its existing fleet. The aircraft are being refitted with upgraded interiors to include full business class seats and new in-flight entertainment systems. They will be handed over in late 2013. The **Qantas Group** has operated the 717s since 2002.

**In Europe**, startup carrier, **Volotea**, will grow its 717 fleet to 15 in 2013. **Volotea** began operation in spring 2012 with a route network built around the 717. It offers point-to-point service to passengers between 52 medium and small-sized European cities. **Volotea** recently carried its millionth passenger.

**AirTran Airways**, now part of **Southwest Airlines**, will start to sub-lease its 717s to **Delta Air Lines** under an agreement announced in 2012. There are more than 150 **Boeing 717s** in service today and the first airplane was delivered in 1999.

**SMBC Aviation Capital** leased -8U3/W (SN 39928) to **Garuda Indonesian Airways**. **Air Lease Corp.** leased a second -81B/W (SN 41303) to **China Southern Airlines**. **China Southern** took delivery of three -81B/Ws (SN 38930, 38945 & 38946). **Air China** received -89L/W (SN 40020) and sold it to **Shandong Airlines**, **Shenzhen Airlines** accepted -87L/W (SN 39132), and **Xiamen Airlines** purchased -85C/W (SN 38404). **Boeing** delivered only one -700 in May, one -74P/W (SN 39199) to **Hainan Airlines**. Elsewhere in Asia, **Turkmenistan Airlines** bought two -82K/Ws (SN 39774 & 39775). **Lion Air** received two -9GPER/Ws (SN 38731 & 38732), and leased them to **Batik Air**. **Turkish Airlines (THY)** purchased -8F2/W (SN 42002), **Korean Air** accepted one -9B5ER/W (SN 42173), **Malaysia Airlines** acquired -8H6/W (SN 40146), and **flydubai** took delivery of its 30th -8KN/W (SN 40259). In Australia, **Virgin Australia** received -8FE/W (SN 41009) and **Qantas** accepted its 65th -828/W (SN 39371). The airline has nine more on order. **Boeing** delivered the 76th -8EH/W (SN 39617) to **GOL Airlines** and the sixth -860/W (SN 40966) to **Ethiopian Airlines**. **KLM - Royal Dutch Airlines** acquired its 22nd -8K2/W (SN 42149) and **airberlin** received its 70th -86J/W (SN 37779). **Boeing Business Jet** took delivery of -73W/W- BBJ1 (SN 40116).

**AWAS** delivered a fourth -300 passenger aircraft to Bolivian airline **Boliviana de Aviación**. The airline currently serves Sao Paulo, Buenos Aires and six domestic cities from its hub in Cochabamba. **Boliviana** recently added flights to Madrid, Spain.

**FLY Leasing** acquired two nearly new -800s which were manufactured in 2013. The aircraft are on ten-year leases to leading carriers in the United States and in China. The acquisitions were financed with a combination of FLY's unrestricted cash and its aircraft acquisition facility, the lessor said.

**Boeing 747.** After not delivering any 747-8s in April, **Boeing** handed over four 747s to customers in May. Three airlines accepted 747-8F freighters: **Cargolux Airlines** acquired its eighth -8R7F (SN 35821), **Cathay Pacific Airways** bought its ninth -867F (SN 39241) and **Atlas Air** received its ninth and final -87UF (SN 37567). The **Atlas** aircraft was ACMI-leased to **Etihad Airways**. **Boeing** delivered the 50th 747-8 on May 29 and the seventh 747-830 (SN 37833) to **Deutsche Lufthansa**.

**Boeing 767.** **LAN Airlines** received its 33rd -316ER (SN 41996) in May. It is fitted with **APB** winglets. The airline has one more 767 on order. **MIAT Mongolian Airlines** took delivery of its first new airplane to be purchased directly from **Boeing**, -34GER (SN 41519). The Mongolian flag carrier ordered the plane in May 2011. **Uzbekistan Airways** received its eighth of nine -33PERs (SN 40533). **United Parcel Service-UPS** accepted its 55th -34AF (SN 37876) and it has four more on order.

**Boeing 777.** **Boeing** delivered one -281ER (SN 40903) to **All Nippon Airways**, one 777-FFX (SN 39691) to **Etihad Airways** and six 777-300ERs in May. **American Airlines** accepted its seventh -323ER (SN 33125), and **KLM - Royal Dutch Airlines** acquired its seventh -306ER (SN 42172). In Asia, **Cathay Pacific Airways** received -367ER (SN 41428). Three Gulf carriers took delivery of one -300ER each. **Emirates** accepted -31HER (SN 35605), **Etihad Airways** acquired one -3FXER (SN 39690) and **Saudi Arabian Airlines** purchased -368ER (SN 41054).

**Boeing 787.** **Boeing** delivered seven 787-8s in May, after a three month hiatus. **All Nippon Airways** accepted two -8s (SN 42243 & 42244) for a total of 19. Rival **Japan Airlines** received its eighth -8 (SN 34840). It has 17 more on order. **LOT Polish Airlines** acquired its third of eight -8s (SN 35940) and put it into service on trans-Atlantic routes. **China Southern Airlines** took delivery of its first GENx-1B-

powered 787-8 (SN 34923) in late May. The airline will receive another seven 787s this year and its last two in 2014. **China Southern** signed an **OnPoint** solution agreement for **GE Aviation** to provide the maintenance, repair and overhaul for the GENx engines. **TUI Travel PLC-Thomson Airways** accepted its first two 787-8s (SN 34422 & 34423), the first to be delivered to a U.K. airline. **Thomson** has another six Dreamliners on order. It launched long-haul 787 flights from Manchester to Florida and from Glasgow to Cancun. Later it will fly the Dreamliners from **London Gatwick** and **East Midlands Airport**. **Thomson Airways** is part of **TUI Travel** and with 58 aircraft in its fleet, it is the U.K.'s third largest airline.

**Australian Low-Cost Carrier, Jetstar**, will receive its first 787-8 in late September, and will put it into commercial service in November. The Dreamliners will operate domestically before they are used on international routes. The airline will have three 787s by the end of the year. It has ordered 14 787s for delivery by 2015 and the type will replace **Airbus A330-200s** on **Jetstar's** long-haul routes. The A330-200s will be returned to the parent carrier, **Qantas**, to replace its aging 767-300ERs, which will be retired.

**First 787 Deliveries.** **British Airways** took delivery of its first two of 24 ordered 787 Dreamliners (SN 38609 & 38610) in late June. The airline will operate the 787 from **Heathrow** to Toronto from September 1 and to Newark from October 1. The Dreamliners will carry 214 passengers and are configured with 35 seats in **Club World**, 25 in **World Traveller Plus** and 154 seats in the **World Traveller** cabin. **British Airways'** parent, **IAG**, recently decided to convert 18 787 options to firm orders, subject to shareholder agreement. Twelve of the 787s will be taken as the newly-launched -10 model, meaning **British** will operate the entire 787 family. The airline currently operates more than 140 **Boeing** airplanes, including 52 777s, as well as the world's largest fleet of 747s, with 52.

**International Lease Finance Corporation (ILFC)**, leased the lessor's first 787-8 Dreamliner to **Norwegian Air Shuttle** in June. It was the 700th aircraft **Boeing** delivered to **ILFC** and also the first 787 to be operated by the lessee. The delivery to **ILFC** builds on a 40-year relationship between **Boeing** and **ILFC**, which is the largest 787 customer, with 74 Dreamliners on order, **Boeing** said. **Norwegian** has eight 787s on order through lease agreements and direct deliveries. It will operate its Dreamliners on European routes this summer, from Oslo to Alicante, Barcelona, London, Malaga and Nice. The carrier will later use the 787 on its new long-haul routes from Oslo and Stockholm to New York and Bangkok. In November, it will fly the 787 to Fort Lauderdale, from Oslo, Stockholm and Copenhagen.

## Regional Jet

**Bombardier** delivered two CRJ1000 NextGens (SN 19032 & 19033) to **Nordic Aviation Capital** in April and May respectively. They were leased to **Garuda Indonesia**. The airline will receive two more CRJ1000s (SN 19034 & 19035) in June and July. **China Express Airlines** took delivery of CRJ900 NextGen (SN 15290) in May and it will receive another CRJ900 (SN 15291) in June.

**Embraer.** Brazilian carrier **Azul Linhas Aereas** has taken delivery of five newly leased EMBRAER 190-200 IGW (E195) jets from **GE Capital Aviation Services (GECAS)**. **Embraer's** largest regional jet variant, the E195, is list priced at \$40 million. **GECAS** delivered the first two aircraft in December, and then delivered one each in February, April and May. The latest two E195s were (SN 19000615 & 19000621). The new E195s were part of **Azul's** existing order book with **Embraer**. **Kenya Airways**

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accepted EMBRAER 190-100 IGW (E190) (SN 19000619) in May. **JetBlue** acquired two E190s (SN 19000623 & 19000624)

**Sukhoi.** **Aeroflot** took delivery of Sukhoi Superjet 100 (SSJ100/95B) (SN 95025) in May. It was the first SSJ to be delivered to the flag carrier that fully complies with the contract specifications. The airline will return its first 10 SSJs to the lessor. They are in flight configuration. **Sky Aviation** received another SSJ100/95B (SN 95027) in June.

## **Turboprop Aircraft**

**ATR.** Three **Wings Abadi Airlines** -600s (SN 1074 & 1079 & 1081) were delivered in May. The latter one was leased to **Maliindo Air**, Malaysia. **Aviation Eastern Fleet** took delivery of ATR 72-600 (SN 1087) and leased it to **Virgin Australia Regional Airline**. **Aer Arann**, the regional carrier of **Aer Lingus**, leased its first ATR 72-600 (SN 1083) from **Avinco**. **Uni Airways** received -600 (SN 1090), in June. **Aeromar**, a regional airline in Mexico, long-term leased its first of two -600s (SN 1086) from **Air Lease Corporation (ALC)** in June. **Aeromar** operates 10 ATR 42-500s and four 42-320s). The newly acquired 68-seat turboprops will replace the smaller ATR 42-320s.

**SuperJet International (SJI)**, a joint venture between **Alenia Aermacchi** and **Sukhoi Holding** delivered the first Sukhoi Superjet 100 (SSJ100) (SN 95024) to the Mexican airline **Interjet**, at the **50th International Paris Airshow**. **Interjet** is the first western customer to take delivery of the SSJ100/95B, and it has 19 aircraft on backlog plus 10 options. The aircraft features a **Pininfarina**-designed interior, with a 93-seat (34 inch pitch) configuration, in accordance with **Interjet's** high standards for passengers' comfort. The SSJ100 is a state of the art regional jet, which incorporates the most modern Western technology and is powered by two **PowerJet** SaM146 engines **Sukhoi** said. The Superjet was painted, completed and customized at the **SuperJet International** facilities in Venice, Italy. The **Interjet** SSJ100 fleet will also be supported by **SJI** with a **SuperCare** super-flight-hour program, a tailored after-sales solution which allows aircraft to keep flying with a minimum investment. **SJI** has a warehouse in Fort Lauderdale to meet spare parts requirements in the Americas. The program was financed with the support of **SACE**, **COFACE** and **VEB/EXIAR**, the export agencies of Italy, France and Russia, respectively.

**Caribbean Regional Airline LIAT Ltd.** received its first new ATR 72-600 (SN 1077) in June. The plane was leased from **GE Capital Aviation Services (GECAS)** and is the first of four 68-seat ATR 72-600 and four 48-seat ATR 42-600s that will be operated by **LIAT**. The airplane was built against a now cancelled order placed by **Jet Airways JetKonnnect**. The other seven **ATRs** will be for delivered during 2013 and 2014. **LIAT** currently flies 14 aircraft and the new **ATRs** will replace many of them.

**Avianca** took delivery of the first of 15 ATR 72-600s (SN 1092) that it ordered in late 2012. The contract included options for 15 more aircraft and was valued at more than \$700 million at list price. The aircraft was delivered at the **Paris Air Show** and was configured with 68 seats. **Avianca** is replacing the Fokker 50s and ATR 42s currently in its fleet.

**Bombardier** delivered Dash 8Q-402 NextGen (SN 4439) to **Nordic Aviation Capital**. It was leased to **Air Baltic** in May. **WestJet Encore** took delivery of the first of 20 Q400 NextGen airliners (SN 4440) in June. The aircraft will serve multiple destinations in Western Canada in its first year of service. **WestJet** holds options for 25 additional Q400 NextGens.

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**Airstream International Group** arranged the purchase and onward lease of two Dash 8-100s to **Airlines of Papua New Guinea**. Ex-**United Airlines**, Bangladesh, (SN366) is undergoing maintenance in Kuala Lumpur and ex-**Skytrans Airlines**, Australia, (SN380) is now in service.

## Antiques and Other Junque

**FedEx Express** has or will retire 86 aircraft and 308 related engines including two A310-200s, three A310-300s and six related engines, as well as five MD-10-10s and 15 installed engines. The retirement of aircraft, engines and parts caused an impairment charge of \$100 million recorded in May 2013. Parking the fuel-guzzling older jets will reduce operating costs and capacity, made necessary because the economic recovery fell short of the cargo carrier's forecast. **FedEx** will retire 47 MD-10-10s (with 172 engines), 13 MD-10-30s (55 engines) and 16 A310-200s with 60 engines several years sooner than planned. The new fleet reduction plan will cut the aircraft count by as much as 7.9 percent at the end of fiscal 2014, compared to a previous plan for a 3.3 percent decline. The airline is adding new, larger aircraft that burn less fuel. The 767-300Fs are 30 percent more fuel efficient than the MD-10 jets they are replacing. The cargo airline has ordered 46 **Boeing** 767Fs and 29 777Fs, and it is buying 14 used 757s from **United Continental Holdings**, with options to purchase another 16. They will be converted to freighters. **FedEx Express** operates 20 of the 777Fs and will take delivery of the first 767F this fall. It grounded the last of its 727-200F fleet as of July 1, 2013. In 1984, it purchased the last 15 727s to be built, and it started retiring 727-100s in 2007. The 757s have replaced the 727s, which are being donated to U.S. collegiate aviation programs. On **FedEx** pilot said, "The 727 really put **FedEx** on the map as an overnight express carrier. It's the end of an era. The 727 will always be the airplane that brought the airline industry into the jet age."

**Universal Asset Management** plans to disassemble a **Boeing** 747-400 at their facility at the **Tupelo Regional Airport** in Mississippi. The jet airliner will be inducted into **UAM's** End-of-Life Recycling Process.

**United Airlines** removed the last five 108-seat 737-500s from its fleet this quarter.

The first **Bombardier** CRJ900 (SN 15001) is being scrapped in Tucson, Arizona.

**Marana Aerospace Solutions** was selected to provide comprehensive end-of-life services for two **Boeing** 757 aircraft that were retired from service. The facility has over 30 years of experience in controlled engine and parts removal, inspection, certification and overhaul, as well as materials salvage and recycling, hazardous waste reclamation, and hull disposal. It is a founding member of the **Aircraft Fleet Recycling Association (AFRA)**. The 757s will be the seventh aircraft type to be dismantled at the 1,200 acre facility over the past year.

**QET Tech Aerospace** offers aircraft end-of-life service (recycling) which includes, parting out the usable aviation parts, disposing of the chemicals and non-usable material in an environmentally safe way. It is estimated by the **Aircraft Fleet Recycling Association (AFRA)** that 12,000 aircraft will be retired over the next 20 years. To further reduce the cost of recycling, **QET Tech Aerospace** joined Mexico's **IMMEX** program where a plane is temporarily imported into Mexico with no tax or duties, then the valuable aviation parts are removed and shipped out of Mexico. Once the usable parts are removed, the remainder of the plane is given to a low-cost facility to discard under the control of **QET Tech** to ensure the work is done in an environmentally responsible way.

## Accidents and Safety

*From Aviation Safety Foundation*

**SkyBahamas Airlines' Saab 340B** (C6-SBJ, SN 316) was substantially damaged in a landing accident at **Marsh Harbour International Airport**, Bahamas, on June 13. After a flight from

**Fort Lauderdale International Airport**, the airplane touched down hard, causing the right wing to separate from the fuselage. A passenger said the aircraft landed very hard and bounced three times before the wing broke off during the final touchdown. The 21 passengers and crew survived.

The **Brazilian Air Force** lost **Boeing 707-324C** (registration number 2404, SN 19870) at Port au Prince, Haiti, when an engine caught fire and the flight crew aborted the takeoff. The aircraft ran off the runway and lost its landing gear before coming to rest on May 26. The 143 people on board escaped injury but the plane was written off.

**Two Xian MA60 Passenger Planes Crash on June 10.** **Merpati Nusantara Airlines' Xian MA60** (PK-MZO, SN 0608) sustained substantial damage during a hard landing at **Kupang-Eltari Airport**, Indonesia. The aircraft was written off, and two of the 46 passengers and four crew were slightly injured. The turboprop undershot the runway and landed hard. The wings separated from the fuselage and both engines tilted forward causing the propellers to touch the runway. In May 2011 another **Merpati MA60** crashed in West Papua and killed 25 people. **Myanma Airways' Xian MA60** (XY-AIP, 0807) left the runway at **Kawthaung Airport**, Myanmar. None of the 64 persons on board were injured. The airplane may be rebuilt and returned to service, because it went off the runway and came to rest in bushes. Another of **Myanma Airways' three MA60s** was damaged less than a month before. Myanmar grounded the country's MA60s and Indonesia ordered special checks on its MA60 fleet. The Indonesian transport ministry said it would carry out a "special audit" of the MA60, which could take up to three months. They will investigate how maintenance work was carried out, the availability of spare parts, crew training, and all matters related to operations, a spokesman said. **Merpati** operates eight of the type and has five more undergoing routine maintenance work, the airline said. They do not plan to ground its planes because of the accident. The airline said the MA60 aircraft have been certified by Chinese and Indonesian aviation authorities and they will continue to fly them. **Myanma Airways** will ground its three MA60s for the time being. The three planes, purchased in 2010, will be inspected and the government aviation authorities will decide whether they will be allowed to fly again.

# 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.

## ASSET MANAGEMENT PROGRAMS

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

## AIRLINE IMPROVEMENT PROGRAMS

Our staff undertakes corporate reviews of entire airlines or specific aspects of airline operations, advising airline executive management, government and international organizations (i.e. World Bank), on various aspects of airline restructuring and/or privatization. Specific issues addressed include airline valuation, strategic planning, scheduling and fleet planning, market development, revenue management, operations and maintenance efficiency. We also provide a full range of services for start-up carriers.

## ECONOMIC & TECHNICAL ANALYSES PROGRAMS

We prepare traffic/operation forecasts and financial analysis for airport and other facilities planning; competitive evaluation of performance/design characteristics and market potential for new aircraft; critical assessment of capability, marketing strategy and opportunities for suppliers of products and services; and air service needs related to tourism development.

## PUBLICATIONS

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

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

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

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

# Sample of Avmark Publications

## SMALL TRANSPORT AIRCRAFT CATALOG

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

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

Most dynamic and fastest growing segment in the world, using old generation propeller aircraft to 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 PW120 Turboprops | 1,800 SHP / 1,342 kW |
| Hamilton Propellers                | 4 blades             |
| External Dimensions                |                      |
| Length                             | 74 ft 5 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 Brakes, Airsearch Air Conditioning, Stall Warning.

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

**Avionics:** EDZ 820 Electronic Flight Instrument System (EFIS) - 4 CRT's for dual Attitude and Heading Reference Systems (AHRS), Dual Autopilots, Dual Computers (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)**

**Distance (nm)**

**ATR 42**

THE AVIONIC 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 storage, in an externally accessed forward and aft baggage compartment, and in a closet.

US \$ 350.00

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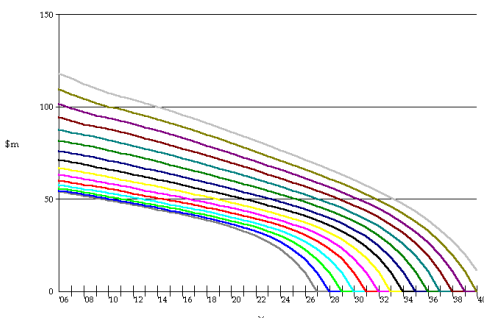
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CAVAS Graph



Profit & Loss Report

| Aircraft Type                       | 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        | 48,978,677        |
| Freight & Mail                      | 8,879,176         | 8,868,733         | 8,858,261         | 8,847,758         | 8,837,226         | 8,826,673         | 8,816,110         |
| Other Revenue                       | 986,575           | 985,415           | 984,251           | 983,084           | 981,914           | 980,744           | 979,574           |
| <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>58,844,626</b> | <b>58,774,411</b> |
| <b>VARIABLE EXPENSES</b>            |                   |                   |                   |                   |                   |                   |                   |
| Fuel                                | 6,918,975         | 6,917,340         | 6,915,670         | 6,913,977         | 6,912,265         | 6,910,533         | 6,908,781         |
| Landing Fees                        | 3,021,823         | 3,021,823         | 3,021,823         | 3,021,823         | 3,021,823         | 3,021,823         | 3,021,823         |
| Enroute Charges                     | 392,440           | 392,440           | 392,440           | 392,440           | 392,440           | 392,440           | 392,440           |
| Pax Commissions                     | 7,399,313         | 7,399,313         | 7,399,313         | 7,399,313         | 7,399,313         | 7,399,313         | 7,399,313         |
| Freight Commissions                 | 1,331,876         | 1,331,876         | 1,331,876         | 1,331,876         | 1,331,876         | 1,331,876         | 1,331,876         |
| Food & Supplies                     | 3,993,194         | 3,993,194         | 3,993,194         | 3,993,194         | 3,993,194         | 3,993,194         | 3,993,194         |
| Passenger Liability Insurance       | 379,590           | 379,590           | 379,590           | 379,590           | 379,590           | 379,590           | 379,590           |
| <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>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         | 5,177,760         |
| Maintenance & Engineering           | 587,650           | 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>5,765,410</b>  |
| <b>TOTAL OPERATING COST</b>         | <b>29,208,622</b> | <b>29,208,622</b> | <b>29,208,622</b> | <b>29,208,622</b> | <b>29,208,622</b> | <b>29,208,622</b> | <b>29,208,622</b> |
| <b>OPERATING PROFIT OR LOSS</b>     | <b>29,985,883</b> | <b>29,916,265</b> | <b>29,846,448</b> | <b>29,776,631</b> | <b>29,706,814</b> | <b>29,636,997</b> | <b>29,567,180</b> |
| <b>D-CHECK ADJUSTMENT</b>           |                   |                   |                   |                   |                   |                   |                   |
| Cumulative Hours                    | 4,830             | 9,650             | 14,459            | 19,257            | 24,045            | 28,833            | 33,621            |
| Cumulative Dollars                  | 315,000           | 0                 | 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>21,235,646</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> | <b>21,235,646</b> |

Profit & Loss Report

| Aircraft Type                       | 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           | 342,553           |
| Maintenance Burden                  | 176,295           | 351,824           | 526,586           | 700,581           | 873,810           | 1,047,039         | 1,220,268         |
| Other Overhead                      | 0                 | 0                 | 0                 | 0                 | 0                 | 0                 | 0                 |
| <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>1,562,821</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>35,039,156</b> | <b>35,749,208</b> |
| General and Admin. Allocation       | 1,573,225         | 1,609,287         | 1,645,180         | 1,680,303         | 1,716,455         | 1,752,607         | 1,788,759         |
| <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>36,791,763</b> | <b>37,537,967</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>21,235,646</b> |
| <b>D-CHECK ADJUSTMENT</b>           |                   |                   |                   |                   |                   |                   |                   |
| Cumulative Hours                    | 4,830             | 9,650             | 14,459            | 19,257            | 24,045            | 28,833            | 33,621            |
| Cumulative Dollars                  | 315,000           | 0                 | 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>21,235,646</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> | <b>21,235,646</b> |

**Select Aircraft Type**

Available Aircraft

- Airbus A300B4-600R
- Airbus A300B4-600RF
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- 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

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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 | 50.00 | 51.28 | 53.11 | 55.51 | 58.47 | 62.02 | 66.25 | 71.16 | 76.74 | 82.40 | 88.33 | 94.91  | 102.84 | 111.03 |
| 2011 | 48.05 | 48.79 | 50.07 | 51.90 | 54.29 | 57.24 | 60.78 | 64.99 | 69.86 | 75.47 | 81.22 | 87.32 | 94.05  | 102.28 | 110.47 |
| 2012 | 46.80 | 47.55 | 48.83 | 50.66 | 53.04 | 55.98 | 59.51 | 63.71 | 68.56 | 74.15 | 79.90 | 86.22 | 93.21  | 101.64 | 110.00 |
| 2013 | 45.53 | 46.29 | 47.56 | 49.39 | 51.76 | 54.70 | 58.22 | 62.41 | 67.24 | 72.81 | 78.64 | 85.25 | 92.54  | 101.27 | 109.75 |
| 2014 | 44.24 | 45.00 | 46.27 | 48.10 | 50.46 | 53.40 | 56.91 | 61.09 | 65.91 | 71.46 | 77.28 | 83.28 | 89.86  | 97.44  | 106.00 |
| 2015 | 42.93 | 43.69 | 44.96 | 46.79 | 49.14 | 52.07 | 55.58 | 59.75 | 64.56 | 69.99 | 76.01 | 82.29 | 89.15  | 96.99  | 105.63 |
| 2016 | 41.60 | 42.36 | 43.63 | 45.45 | 47.80 | 50.72 | 54.22 | 58.38 | 63.18 | 68.60 | 74.71 | 81.27 | 88.40  | 96.44  | 105.17 |
| 2017 | 40.25 | 41.01 | 42.28 | 44.09 | 46.43 | 49.34 | 52.83 | 56.99 | 61.78 | 67.18 | 73.37 | 79.74 | 86.57  | 94.89  | 103.60 |
| 2018 | 38.88 | 39.64 | 40.91 | 42.72 | 45.05 | 47.95 | 51.43 | 55.58 | 60.36 | 65.84 | 72.01 | 78.56 | 85.67  | 94.28  | 103.00 |
| 2019 | 37.49 | 38.25 | 39.52 | 41.33 | 43.65 | 46.55 | 50.02 | 54.17 | 58.94 | 64.40 | 70.64 | 77.36 | 84.75  | 93.54  | 102.31 |
| 2020 | 36.08 | 36.84 | 38.11 | 40.00 | 42.32 | 45.21 | 48.67 | 52.81 | 57.58 | 62.93 | 69.14 | 75.94 | 83.51  | 92.49  | 101.62 |
| 2021 | 34.65 | 35.41 | 36.68 | 38.57 | 40.88 | 43.77 | 47.22 | 51.34 | 56.10 | 61.49 | 67.77 | 74.71 | 82.47  | 91.64  | 100.89 |
| 2022 | 33.20 | 33.96 | 35.23 | 37.12 | 39.42 | 42.31 | 45.76 | 50.00 | 54.81 | 60.18 | 66.44 | 73.44 | 81.36  | 90.71  | 100.00 |
| 2023 | 31.73 | 32.49 | 33.76 | 35.65 | 37.94 | 40.83 | 44.28 | 48.51 | 53.31 | 58.66 | 64.91 | 71.94 | 79.94  | 89.47  | 98.75  |
| 2024 | 30.24 | 31.00 | 32.27 | 34.16 | 36.45 | 39.34 | 42.79 | 46.99 | 51.78 | 57.12 | 63.36 | 70.44 | 78.52  | 88.23  | 97.69  |
| 2025 | 28.73 | 29.49 | 30.76 | 32.65 | 34.94 | 37.83 | 41.28 | 45.48 | 50.26 | 55.60 | 61.83 | 68.98 | 77.13  | 86.92  | 96.57  |
| 2026 | 27.20 | 27.96 | 29.23 | 31.12 | 33.41 | 36.30 | 39.74 | 43.94 | 48.72 | 54.05 | 60.27 | 67.39 | 75.61  | 85.50  | 95.25  |
| 2027 | 25.64 | 26.40 | 27.67 | 29.56 | 31.85 | 34.74 | 38.18 | 42.37 | 47.14 | 52.46 | 58.67 | 65.84 | 74.13  | 84.11  | 93.94  |
| 2028 | 24.06 | 24.82 | 26.09 | 27.98 | 30.27 | 33.15 | 36.59 | 40.77 | 45.54 | 50.85 | 57.04 | 64.27 | 72.61  | 82.71  | 92.61  |
| 2029 | 22.46 | 23.22 | 24.49 | 26.38 | 28.67 | 31.55 | 34.98 | 39.16 | 43.92 | 49.21 | 55.39 | 62.66 | 70.94  | 81.11  | 91.00  |
| 2030 | 20.84 | 21.60 | 22.87 | 24.76 | 27.04 | 29.92 | 33.35 | 37.52 | 42.28 | 47.56 | 53.73 | 60.96 | 69.21  | 79.36  | 89.25  |
| 2031 | 19.20 | 19.96 | 21.23 | 23.12 | 25.40 | 28.28 | 31.70 | 35.87 | 40.62 | 45.89 | 52.04 | 59.24 | 67.46  | 77.61  | 87.50  |
| 2032 | 17.54 | 18.30 | 19.57 | 21.46 | 23.74 | 26.62 | 30.04 | 34.21 | 38.96 | 44.22 | 50.36 | 57.53 | 65.71  | 75.84  | 85.73  |
| 2033 | 15.86 | 16.62 | 17.89 | 19.78 | 22.05 | 24.93 | 28.35 | 32.51 | 37.25 | 42.50 | 48.62 | 55.76 | 63.91  | 74.04  | 83.93  |
| 2034 | 14.16 | 14.92 | 16.19 | 18.08 | 20.34 | 23.21 | 26.62 | 30.77 | 35.50 | 40.73 | 46.82 | 53.94 | 62.06  | 72.19  | 82.00  |
| 2035 | 12.44 | 13.20 | 14.47 | 16.36 | 18.64 | 21.50 | 24.91 | 29.12 | 33.84 | 39.05 | 45.13 | 52.21 | 60.31  | 70.44  | 80.25  |
| 2036 | 10.70 | 11.46 | 12.73 | 14.62 | 16.90 | 19.77 | 23.17 | 27.38 | 32.09 | 37.29 | 43.35 | 50.41 | 58.49  | 68.62  | 78.75  |
| 2037 | 8.94  | 9.70  | 10.97 | 12.86 | 15.14 | 17.99 | 21.39 | 25.60 | 30.30 | 35.49 | 41.54 | 48.58 | 56.64  | 66.77  | 76.80  |
| 2038 | 7.16  | 7.92  | 9.19  | 11.08 | 13.36 | 16.20 | 19.60 | 23.80 | 28.50 | 33.68 | 39.73 | 46.75 | 54.79  | 64.82  | 74.85  |
| 2039 | 5.36  | 6.12  | 7.39  | 9.28  | 11.56 | 14.39 | 17.78 | 21.98 | 26.67 | 31.75 | 37.78 | 44.79 | 52.81  | 62.84  | 72.87  |
| 2040 | 3.54  | 4.30  | 5.57  | 7.46  | 9.74  | 12.57 | 15.95 | 19.94 | 24.62 | 29.68 | 35.69 | 42.69 | 50.71  | 60.74  | 70.77  |
| 2041 | 1.70  | 2.46  | 3.73  | 5.62  | 7.90  | 10.69 | 14.07 | 18.05 | 22.72 | 27.77 | 33.77 | 40.76 | 48.77  | 58.79  | 68.80  |

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