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# Newsletter

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## Market Comment

**The Year 2015 Was by Far the Safest Year on Record** judged by the number of fatal accidents and it was the fifth safest year ever in terms of fatalities. This comes even though traffic boomed and the jet fleet grew by approximately 1,200 new airplanes. There were 16 fatal airliner accidents that killed 560 people according to the **Aviation Safety Network (ASN)**. The year was marred by several high profile accidents, including the intentional crash of **Germanwings** Flight 9525. The **Airbus** A320 crashed in France on March 25, when the pilot apparently committed suicide by flying the plane into the ground, also killing the other 149 people on board. The worst accident of the year happened on October 31 when a **Metrojet Airbus** A321 was allegedly destroyed by a bomb over the Sinai Desert, and 224 passengers and crew were killed. Seven of the 16 accidents involved passenger flights. These were the only two fatal accidents involving jet airliners. The rest were regional turboprops, with the exception of the crash of one A400M during a test flight. Three of the turboprops were an ATR 42, an ATR 72 and an **Antonov** An-12 cargo plane. The other 10 were 19-seat or smaller commuter aircraft. **ICAO** estimated that there were 34 million flights worldwide and the fatal accident rate is one per 4,857,000 passenger flights. **ASN** President **Harro Ranter** said, "Since 1997, the average number of airliner accidents has shown a steady and persistent decline, for a great deal thanks to the continuing safety-driven efforts by international aviation organizations such as **ICAO, IATA, Flight Safety Foundation** and the aviation industry."

## Airbus Orders

**Airbus Sold 60 Aircraft in December,** bringing the year's net orders to 1,036, from 53 customers, including eight new ones. It sold 897 single-aisle aircraft and 139 widebodies. **Airbus** reached an industry record backlog of 6,787 aircraft as of December 31, with a combined value of $996.3 billion at list prices, and equaling 10 years of production at current rates. **Airbus** delivered a record 79 jetliners to customers raising the 2015 total to a new annual record of 635 deliveries.

**The Manufacturer Sold** 36 A320neo Family (New Engine Option) versions of the A319, A320 and A321, and three A320ceo (Current Engine Option) aircraft. **Turkish Airlines** firmed-up its commitment for 20 A321neo aircraft, which were added to the 72 A321neos it ordered previously. The **International Airlines Group (IAG)** purchased five

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A320neo aircraft each for its subsidiaries, **British Airways, Iberia,** and **Vueling,** while an unnamed private operator acquired the first ACJ319neo Airbus Corporate Jet. **China Aircraft Leasing (CALC)** bought two A320ceo aircraft, and **Air New Zealand** contracted for its 18th A320ceo. An **"Unidentified Customer"** (**All Nippon Airways)** placed orders for three flagship A380s and another **Unidentified Customer** signed up for two A350-900s. **AirAsia X** switched previous 11 A330-300 commitments for the new A330-900 New Engine Option type. It no longer has any A330-300s in backlog. **South Africa Airways** cancelled its last 10 A320ceo orders and purchased five A330-300s instead.

**Airbus** delivered 55 A320 Family aircraft, 17 A330s, four A350s (including the initial A350-900 for **TAM Airlines**), and three A380s to **Emirates** in December. The European airframer handed over a record 635 aircraft during 2015, and it exceeded its targets for the year. This marked the 13th consecutive annual increase in output. **Airbus** delivered 491 A320 Family aircraft, 103 A330s, 27 A380s, and 14 A350 XWBs to 85 customers, of which 10 were new. This production surpassed the previous yearly delivery record of 629 aircraft set in 2014.

**Fabrice Brégier, Airbus** President and CEO said that 2015 was a year of solid and wide-ranging accomplishments. The A320neo was certified by the aviation authorities on both sides of the Atlantic just five years after its launch. In addition, **Airbus** delivered 14 A350s – making good its pledge to the airlines who are now benefitting from the world's most efficient and advanced airliner. Important progress was also made on the A350 program's next variant, the A350-1000, whose major components and structures are now taking shape across various production sites. Likewise, parts are now in production for the first A330neo, with the machining of its first engine pylon and center wing-box components. In addition, there has been good news for the flagship A380, 10 years after its first flight, with the program breaking-even for the first time. Another notable highlight was the official opening of the first U.S. **Airbus** factory at Mobile, Alabama, in September. It will produce between 40 and 50 A320 Family aircraft annually by 2018. On the other side of the globe in China, additional orders for the A330 not only complements our plans for a new A330 completion and delivery center in Tianjin, but also helps to smooth our transition towards the A330neo. Furthermore, in 2015 **Airbus** launched three new incremental aircraft developments which include the Long-Range version of the A321neo which will offer true trans-

Atlantic operation, the Regional version of the A330 which is optimized to seat up to 400 passengers on missions up to 3,000 nm, and the Ultra-Long-Range version of the A350-900, capable of 19-hour flights, Mr **Brégier** said.

**The International Airlines Group (IAG)** has firmed up options for a further 15 A320neos. Five each will be delivered to **IAG's** subsidiaries, **British Airways, Iberia,** and **Vueling. John Leahy,** Chief Operating Officer, Customers, said, "**IAG** is one of the biggest customers for **Airbus** single aisle aircraft and demonstrates the preference of our products amongst the world's leading airlines." In November, **IAG** ordered 12 A320neos and three A321neos for **Iberia**, and those aircraft orders will be filled between 2018 and 2021. The group has purchased 47 A320neos and three A321neos between August and the end of 2015.

**Turkish Airlines** confirmed options for 20 **Airbus** A321neos in December. The flag carrier already has 72 A321neos and 13 A321ceos on order, and 55 A321ceos in service. The 20 newest A321neos will be handed over in 2020 and 2021. **Turkish** said it has delayed 17 A321neo deliveries from 2017 and 2018 until 2021 and 2022. The airline is set to add three A330Fs, five A330-300s and 10 777-300ERs as well. By 2021, the **Turkish** fleet will total more than 430 units, comprised of 350 narrowbodies, 95 passenger widebodies and 10 widebody freighters.

## Airbus Orders, Deliveries and Backlog December 2015

| DEC ORD | DEC DEL | DEC CANX | TOTAL ORD | TOTAL DEL | BACK LOG |
|---|---|---|---|---|---|
| | | | **A318** | | |
| -0- | -0- | -0- | 80 | 80 | -0- |
| | | | **A319** | | |
| -0- | -0- | -0- | 1,473 | 1,453 | 20 |
| | | | **A319neo** | | |
| 1 | -0- | -0- | 50 | -0- | 50 |
| | | | **A320** | | |
| 3 | 35 | -10 | 4,762 | 4,132 | 630 |
| | | | **A320neo** | | |
| 15 | -0- | -8 | 3,327 | -0- | 3,327 |
| | | | **A321** | | |
| -0- | 20 | -0- | 1,625 | 1,211 | 414 |
| | | | **A321neo** | | |
| 20 | -0- | -0- | 1,094 | -0- | 1,094 |
| | | | **A330** | | |
| 5 | 17 | -12 | 1,437 | 1,257 | 180 |
| | | | **A330neo** | | |
| 11 | -0- | -0- | 170 | -0- | 170 |
| | | | **A350** | | |
| 2 | 4 | -0- | 777 | 15 | 762 |
| | | | **A380** | | |
| 3 | 3 | -1 | 319 | 179 | 140 |
| **This Month** | | | **This Year** | | **BL** |
| 60 | 79 | -31 | **1,036** | **635** | 6,787 |

**Airbus sold 16,307 aircraft and delivered 9,520 as of December 31, 2015. One hundred three orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.**

**Air New Zealand** purchased its 18th A320-200 in December and has taken delivery of 16 of them. **China Aircraft Leasing (CALC)** bought the two A320-200s, for a total of 55, with 32 delivered. It has 74 A320neos and 11 A321-200s on backlog.

**Airbus** sold the first ACJ319neo to a private operator, which raised the A319neo backlog to 50. The ACJ319neo will enter service after 2018, and it can carry eight passengers for up to 12,500 km. The A319neo is list priced at $98.5 million.

**All Nippon Airways (ANA),** Japan's largest airline, agreed to buy three A380 superjumbos in December 2015. The **Nikkei** stock exchange reported the deal was valued at about 150 billion yen ($1.25 billion, or $416.7 million each). This breaks a three-year drought in A380 sales to airline customers and was seen as a welcome vote of confidence for the aircraft. **ANA** will take delivery of the first plane in fiscal year 2018, and will fly them on its Tokyo to Hawaii route. A spokesman said the order was one piece of a larger strategic plan. The A380 is list priced at $428 million, seats between 525 and 800 passengers depending on the configuration. Analysts said the sale could lead to further orders, since three airplanes are only enough for one long-haul route. The order for the A380 in Japan was seen as a victory for **Airbus** since the market was traditionally dominated by **Boeing** widebodies. **Airbus** sold six A380s to **Skymark** but that order was cancelled in 2014 because the low-cost carrier could not afford them. Two of the airplanes (SN 162 & 167) were built and are currently stored. They may be delivered to **ANA** since **ANA** bought 16.5 percent of **Skymark** in 2015. One has to wonder why it will take another two years to complete the delivery of two nearly complete aircraft. **ANA** will support the low-cost carrier through code-sharing, joint purchases, flight operation management and aircraft maintenance. The Japanese order will not substantially boost the A380s fortunes but it may be a harbinger of better times for **Airbus.** Sales chief **John Leahy** said two potential customers were considering the double decker, with orders of up to 12 by one and as many as 20 aircraft by the other, with the airlines, **Royal Air Maroc** and **Saudi Arabian Airlines** having said they were interested. **Emirates** president **Tim Clark** said he won't buy any more A380s unless **Airbus** commits to a re-engined NEO version to reduce fuel costs.

**Airbus Increased its Average List Prices by 1.1 Percent** across its product line. The new prices came into effect on January 1, 2016. The price increase was calculated according to **Airbus'** standard escalation formula over the January 2015 to January 2016 period and takes into account the drop in materials and commodities prices. **John Leahy, Airbus** Chief Operating Officer, Customers, said, "Our new 2016 price increase reflects the strong appetite from customers around the globe for **Airbus'** comprehensive, modern and innovative product range. We see demand for our aircraft continuing to grow across all size categories as our reliable, efficient product line enables customers to grow their businesses profitably as well as being favored by passengers who want to travel in the most comfortable cabins." **Airbus** has sold 16,307 aircraft to more than 380 customers worldwide, and 9,520 aircraft have been delivered.

**Airbus Aircraft 2016 Average List Prices in Millions.**

**A318** $75.1, **A319** $89.6, **A319neo** $98.5, **A320** $98.0, **A320neo** $107.3, **A321** $114.9, **A321neo** $125.7, **A330-200** $231.5, **A330-800** $252.3, **A330-200F** $234.7, **A330-300** $256.4, **A330-900** $287.7, **A350-800** $272.4, **A350-900** $308.1, **A350-1000** $355.7, **A380-800** $432.6

The prices depend on design weights, engine choices and level of selected customisation.

**China Southern Airlines** ordered 10 **Airbus** A330-300s worth about $2.27 billion at list prices of $227.36 million each. The country's largest airline reported the deal in a stock exchange filing in December, but the order has not been confirmed by **Airbus.** The airplanes will be delivered between 2017 and 2019 and the purchase will be funded by cash and financing arrangements with banks. The purchase will expand the airline's fleet by four percent. Earlier in the month, **China Southern** and affiliate **Xiamen Airlines** had signed deals worth $10 billion to buy 110 **Boeing** 737 aircraft.

**BOC Aviation**, Singapore, announced its order for 12 A320ceo Family and 18 A320neo Family aircraft at the end of December, but **Airbus** has not booked the order. The deal is worth over $3 billion ($100 million each) at list prices. **BOC's** cumulative orders to date reached 306 **Airbus** aircraft, comprising 12 A330s and 294 A320 Family, including 64 NEOs. As of December 31, the lessor had commitments to buy 241 aircraft, with a portfolio of 270 owned and managed planes operated by 62 airlines worldwide. **BOC Aviation** is a subsidiary of the **Bank of China.**

**Garuda Indonesia** will choose between the **Airbus** A350 and **Boeing** 787 in 2016. At the **Paris Airshow,** Indonesia's flag carrier signed letters of intent for both types, but will go ahead with only one order. The deal is potentially worth $9 billion for the winner. **Garuda** will use the 30 new jets to replace the 23 leased **Airbus** A330s that it uses on medium- and long-haul routes within Asia, and it will potentially add cities in Europe. The airline made a net profit of $27.7 million in the first half of 2015, a dramatic improvement over the $203 million loss a year earlier.

**Airbus Delayed A320neo Delivery Until January 2016,** missing a self-imposed deadline of handing over the updated jet to its first customers by the end of 2015. The A320-neo was certificated by **European Aviation Safety Agency (EASA)** and **FAA** in late November. **Lufthansa** took the initial operator spot from **Qatar Airways**, after the latter said it wanted issues with the **Pratt & Whitney** engines' performance resolved. **Lufthansa** was to receive its first NEO in late December but it agreed with **Airbus** to delay the delivery to the start of 2016 due to "technical complexities". **Airbus** said, "All three partners continue working with all efforts and full focus towards bringing the fuel-efficient A320neo into service within the next weeks." The problems lay with documentation for the delivery the manufacturer said, but did not give any further details. **Pratt & Whitney** said it was working closely with **Airbus** and **Lufthansa** to resolve "documentation items" with its Geared Turbofan engine. Uneven cooling of the engine after flight required a special restart procedure under some circumstances, and **Pratt** is working on software and hardware fixes which should be ready by February. Further, the company had plans to incorporate "software refinements and minor hardware modifications" in production engines starting in the second quarter of 2016.

# Boeing Orders

**Boeing Sold 220 737s and Three Widebodies in December. Turkish Airlines** confirmed 10 737 MAX 8 options during the last month of the year. They will be delivered in 2021. **Turkish** now has 20 737-800 and 65 MAX 8 and 10 MAX 9 aircraft on order. One **Boeing Business Jet** customer bought two BBJ2 737-800s, another customer ordered one 737 MAX BBJ and a third purchased one BBJ 737-700. **Air Lease Corp. (ALC)** ordered eight 737 MAX 8s. U.K. leisure airline ***Jet2.com*** finalized its order for three more 737-800s, valued at $288 million at current list prices. Its 737 NGs will be delivered from 2016 through 2018. **Delta Air Lines** contracted for 20 737-900ERs. **Boeing** sold 99 737 MAX to four undisclosed customers and 75 737-800s to three undisclosed customers. Another unnamed

client ordered one 737-900ER. **FedEx Express** purchased its 101st 767-300ERF freighter. It has 25 in service and 76 in backlog. One unidentified patron bought two 787-9s. During December, one undisclosed customer dropped four 737 NG orders, another cancelled eight 737 NGs, a third voided eight 737 NG commitments and a fourth customer cancelled two 787 orders. **Boeing** lost 78 737 NG orders (most of them were conversions to the 737 MAX), four 747-8Fs and 28 787s during 2015, for a total of 110 cancellations. The manufacturer sold 179 737 NG and 408 737 MAX, as well as 38 777 and 20 777X aircraft. **Boeing Business Jet** customers purchased seven 737s and two 787s and unidentified customers signed up for 276 737s, 15 777s and 38 787s. **Boeing's** gross orders at the end of the year stood at 666 737s, six 747s, 49 767s, 58 777s and 99 787s for a total of 878. After cancellations, the net orders were 588 737s, two 747s, 49 767s, 58 777s and 71 787s for a total of 768. **Boeing** reached its target to sell at least as many airplanes as it delivered in 2015. **Boeing** again beat **Airbus** in terms of deliveries with its 762 units but fell well short of **Airbus'** 1,036 net new orders.

**Boeing December 2015 Orders, Deliveries**

| DEC ORD | DEC DEL | DEC CANX | TOTAL ORD | TOTAL DEL | BACK LOG |
|---|---|---|---|---|---|
| | | | **737** | | |
| 102 | 38 | -20 | 10,165 | 8,845 | 1,320 |
| | | | **737 MAX** | | |
| 118 | -0- | -0- | 3,072 | -0- | 3,072 |
| | | | **747** | | |
| -0- | -0- | -0- | 1,539 | 1,519 | 20 |
| | | | **767** | | |
| 1 | -0- | -0- | 1,163 | 1,083 | 80 |
| | | | **777** | | |
| -0- | 6 | -0- | 1,579 | 1,361 | 218 |
| | | | **777X** | | |
| -0- | -0- | -0- | 306 | -0- | 306 |
| | | | **787** | | |
| 2 | 9 | -2 | 1,142 | 363 | 779 |
| **This Month** | | | **This Year** | | **BL** |
| 223 | 53 | -22 | **768** | **762** | 5,795 |

**Boeing sold 26,496 aircraft and delivered 20,701 as of December 31, 2015**
**The Current Program includes sales and deliveries of 737s, 747s, 767s, 777s and 787s.**
**Sales totals include 110 cancellations.**

**China Southern Airlines** told the **Shanghai Stock Exchange** that it was ordering 30 Next-Generation 737 and 50 737 MAX airplanes, list priced at $8.38 billion. **Boeing** said, "The orders will be posted on **Boeing's** ***Orders & Deliveries*** website once all contingencies are cleared" on December 17, the same day that **Boeing** announced that an undisclosed customer ordered 30 737-800s and 50 737 MAX. **China Southern's** 737s will be delivered from 2017 through to 2021. **Xiamen Airlines** also said it was buying 30 737 MAX aircraft and it would convert nine of its 40 737NG firm orders to the MAX. That order was valued at $10.04 billion ($91.27 million each). **Xiamen's** 737 MAXs will arrive between 2018 and 2020. **Boeing** did not report a corresponding unidentified order.

**Delta Air Lines** ordered 20 new 737-900ERs and purchased 20 used **Embraer** E190s from **Boeing** at a better price than was offered during the summer of 2015. The 737s will be delivered in 2019, and the used E190s will enter service with **Delta's** regional carriers in 2016 and 2017. **Delta** retains 10 options for 737s.

| **Boeing Deliveries** | **Fourth Quarter 2015** | **Year-to-Date 2015** |
|---|---|---|
| **Major Programs** | | |
| **Commercial Airplanes Programs** | | |
| 737 | 120 | 495 |
| 747 | 5 | 18 |
| 767 | 2 | 16 |
| 777 | 21 | 98 |
| 787 | 34 | 135 |
| **Total** | **182** | **762** |
| **Defense, Space & Security Programs** | | |
| AEW&C | 1 | 1 |
| C-17 Globemaster | -0- | 5 |
| C-40A | -0- | 1 |
| P-8 Models | 4 | 14 |
| **Total** | **5** | **21** |

**Air China** ordered for six additional 777-300ER (Extended Range) jetliners in January. The order was valued at more than $2.05 billion ($341.7 million each) at current list prices, but the airline said **Boeing** had granted "significant" concessions. China's flag carrier now has unfilled orders for 90 **Boeing** airplanes, including the six 777s and 15 new 787-9 Dreamliners. The other 69 planes must be undisclosed orders for 737 NGs and MAX. **Air China** currently operates 174 **Boeing** airplanes, including Next-Generation 737s, seven 747-8 Intercontinentals as well as 20 777-300ERs. The airline continues to modernize its long-haul fleet to replace aging aircraft and plans to expand its growing international network.

**Boeing was Still the World's Largest Planemaker** after it delivered a record-high 762 commercial jets in 2015. Production rose 5.4 percent and was buoyed by 495 deliveries of its single-aisle 737, and a record 135 twin-aisle 787s. The Chicago-based plane maker set a target early in the year to hand over from 755 to 760 commercial planes. It delivered 53 new jets in December and all but two of them left for their new owners before the traditional Christmas break. **Boeing** and its rival **Airbus Group** have sizable backlogs of 5,795 and 6,787, respectively, but **Boeing** is building through its backlog more quickly. At the current rate of production, the current orders will be filled in seven years and nine months. **Boeing** beat **Airbus's** delivery total four years in a row. The Toulouse, France-based company handed over 635 airplanes in 2015. Deliveries are critical because that is when the sales revenue is booked. **Airbus** wants to boost production of its single-aisle A320 Family jets by 30 percent to 60 a month by 2019, from the current 42 aircraft. **Boeing** saw its yearly orders fall by more than 50 percent to 768 from 1,432 in all of 2014, partially because **Airbus** dominates the re-engined narrowbody market with its A320neo Family, but **Boeing's** twin engined widebodies are out selling the A330 and A350.

**Irkut MC-21 Delayed. United Aircraft Corporation** pushed back the start of its twinjet's flight-test program until the end of 2016. Russian industry and trade minister **Denis Manturov** announced, "We now plan to roll out the first prototype by mid-2016 and launch flight tests by the end of [the] year. We need to ensure high quality of the MC-21 components made from composite materials. I think that the risks of building crude and technically immature aircraft are absolutely unjustified," he explained. This is the second delay of the first flight. It was originally scheduled for 2014 and then deferred until the second quarter of 2016. **Irkut** assembled the fuselage for a first pre-production MC-21 at its facility in Irkutsk in November and joined the wings in December.

# Regional Report

**Bombardier Commercial Aircraft** sold 10 CRJ900 regional jets to **China Express Airlines**, raising its total orders to 38 CRJ900s. **China Express** exercised eight previous options when it placed the order. The CRJs are list priced at approximately $462.6 million ($46.26 million each). To date, the airline has received 20 of its CRJ900s. **China Express** is based in Chongqing and launched operations in 2006. It specializes in regional services to 62 cities in China. **Wu Longjiang,** President of **China Express Airlines**, said, "**China Express** is committed to providing air services to people in Tier 3 and Tier 4 cities in China. Our mission is to improve the connectivity by air for those communities. The CRJ900 is the right aircraft for our cooperation with major airlines on code sharing and connecting flights, as well as cooperation with cities. We continue to expand our fleet to serve both current and future demand and destinations." **Bombardier's *2015-2034 Commercial Aircraft Market Forecast*** reports that approximately 900 60- to 100-seat airliners will be delivered to China by 2034. Firm orders for CRJ900 jetliners now stand at 409 aircraft.

**Addis Ababa-Based Ethiopian Airlines** signed a firm purchase agreement for two more Q400 turboprop airliners in December. The two planes will increase **Ethiopian's** Q400 fleet to 19 aircraft, which is the largest Dash 8 fleet in Africa. The transaction is valued at approximately $63 million ($31.5 million each) at list prices. **Ethiopian** currently uses its Q400s for flights throughout the country as well as to neighboring Djibouti, Sudan, South Sudan, Uganda, Tanzania and the Democratic Republic of the Congo (DRC). **Tewolde Gebremariam,** Group Chief Executive Officer of **Ethiopian Airlines,** said, "Through our strategic partnerships with **ASKY Airlines** in Togo and **Malawian Airlines** in Malawi, the Q400 airliner has played a vital role in availing convenient connections, as well as increasing frequencies to support air travel growth in Africa and successfully

**Mitsubishi Aircraft Corporation** said it had to delay delivery of its first MRJ90 by one year to allow for several upgrades and improvements to the aircraft's design following its maiden flight last month. Launch customer **All Nippon Airways** will take delivery of its first aircraft in mid-2018. The manufacturer explained, "The first flight and the subsequent flight tests have confirmed the basic characteristics to be satisfactory. However, we also have recognized several issues as we attempt to accelerate our development." **Nobuo Kishi,** Senior VP of **Mitsubishi Aircraft**, told the press that the company would reinforce the aircraft's wing superstructure to Japanese certification standards, redesign the wheels and landing gear for improved safety, and improve the flight control system and software. The Japanese manufacturer scheduled two months to strengthen the MRJ90's airframe, as well as upgrade the software for its avionics, flight control system and engine control unit after data gleaned from static strength tests was analyzed by its engineering facilities in the U.S. **Mitsubishi** said when "ultimate weight loads exceeding normal loads" were exerted on some components during static strength tests, it became clear which components lacked sufficient strength. "Also, we are strengthening the fuselage after test feedback. We have been reinforcing these components, as planned after first flight. This kind of reinforcement work is something that happens in development work." The landing gear needed to be upgraded in order to have a "better-integrated aircraft." **Mitsubishi** executives admitted that their initial expectations were "too optimistic". Further, "In preparation for some unforeseeable eventuality, we will do our utmost to advance the scheduling of each work operation to create a scheduling buffer, just in case." The delay means that the MRJ will lose the advantage of early service entry when compared to the market leading **Embraer** E-Jet E2.

create a missing link. The Q400 aircraft is also our core fleet to our domestic and regional destinations." **Bombardier** reported that approximately 69 Q400 aircraft are now in service with more than 20 operators in Africa. In 2013, **Ethiopian** joined **Bombardier's** global network of **Authorized Service Facilities (ASFs)** for commercial aircraft and it performs line and heavy maintenance on Q400 aircraft at its facilities at **Bole International Airport** in Addis Ababa.

**Embraer Plans to Roll Out the First E190-E2** test aircraft on February 25, 2016, in a ceremony at the company's final assembly complex in Sao Jose dos Campos, Brazil. The plane will roll out approx.-imately halfway through the development program – two and a half years after **Embraer** launched the E-Jets E2 at the 2013 **Paris Airshow,** and about two years before the scheduled entry into service in the first half of 2018. **Paulo Cesar Sousa e Silva,** President of **Embraer Commercial Aviation,** said the first flight of the re-engined and re-winged E190 was on track for the second half of 2017. E-Jet E2 family will feature new wings and engines, and a full fly-by-wire flight control system. The redesigned wings were mated to the fuselage, and two **Pratt & Whitney** PW1900G geared turbofan engines are installed on newly designed wing pylons. The flight control software is being evaluated at the company's systems test rig in Eugenio de Melo, Brazil, he added. The program has attracted 267 firm orders and 373 options and purchase rights. "We are quite happy with the number we have achieved," Mr. **Silva** said. A second E190-E2 test aircraft is now in final assembly and major sections of the third prototype aircraft are now being built and will be shipped to Sao Jose dos Campos to enter final assembly "very soon", Silva says.

## Order Changes and Cancellations

**Airbus Reported AirAsia X** had switched its last 11 A330-300 commitments for the new A330-900 New Engine Option type. It has no A330-300s in backlog, having taken delivery of 20. Seven of the **Air Asia X** A330 orders were cancelled completely and the other four were transferred to **BOC Aviation.** Those planes were leased to the airline after delivery in December. **Air Asia X** now has 31 A330-300s in service and 66 A330-900s and 10 A350-900s on order. In November, **BOC** had eight A330-300s on order, with one of them delivered. At the end of December, the lessor had ordered seven A330s and had taken delivery of five of them. An **Undisclosed Customer** transferred one A320-200 order to **Chengdu Airlines,** two A320-200s to **China Development Bank Financial Leasing**, one -320-200 to **Sichuan Airlines,** and three A320-200s to **Spring Airlines;** they all took immediate delivery in December. The undisclosed category retains 128 A320-200 orders. An **Undisclosed Customer** transferred one A321-200 order to **Juneyao Airlines,** leaving 88 A321s in backlog for undisclosed customers. The airplane was delivered in December. When **IAG** ordered five A320neos for **British Airway**, the company switched three of its A320neo orders to the A321neo type. The airline now has 25 A320neos and 10 A321neos on backlog. **Middle East Airlines** switched four of its five A320neo orders to the A321neo variety, for a total of nine. **Airbus** deleted the bankrupt airline **Transaero** and its

**AtlasGlobal UA** decided to drop plans to acquire the An-148-100 from the Ukrainian manufacturer **Antonov Design Bureau.** The management said "despite all its pros, the An-148 is not without significant drawbacks, the first of which - its inflated price. We found that the cost of one An-148 equaled that of an **Airbus** or **Boeing** and even though it has a good likelihood of profitability, it just cannot compete in terms of carrying capacity. The cost per seat of the An-148 works out more expensive" than the western jets. **AtlasGlobal UA** is a subsidiary of **AtlasGlobal,** Turkey, and it currently operates two A320-200s on scheduled services from the Ukraine to Istanbul.

eight A320neo and four A380 orders from its official ***Orders, Deliveries and Operators*** report. The ***Airline Orders*** section of that report shows only one A380 cancellation in 2015, and a new customer **Air Accord** that had ordered three A380s. **Airbus** customer, **SCB** was changed to **Standard Charter Bank** in the December report, and the company has two A330-300s on order.

**South Africa Airways (SAA)** cancelled its last 10 A320ceo orders and purchased five A330-300s instead. This effectively delays the deliveries by several years. The airline was told to exchange its 10 outstanding A320 orders for the five A330s by the **South African Treasury.** This followed an **Airbus** specified deadline which required the airline to reconfirm the A320 orders. Under the treasury plan, **SAA** will lease the five A330s from a South African firm rather than buy the 10 A320s, which will save the state-backed carrier from paying $40 million in Pre-Delivery Payments (PDP). The treasury said in a statement, "As the airline takes delivery of each of the A330s, the PDPs that have already been paid, which total just more than $100 million, will be refunded by **Airbus**. **SAA** will not be required to recognize impairments, as it will no longer be acquiring aircraft. It had been estimated that such impairments could have totaled in excess of 1 billion rand ($67.8 million)." The agreement was finalized on December 23.

**Boeing Cancellations in December.** One **Unidentified Customer** dropped four 737 NG orders, another cancelled eight 737 NGs, a third voided eight 737 NG commitments and a fourth customer cancelled two 787 orders. **Boeing** reported that it lost 110 orders in 2015, including 78 737 NG orders (most of them were conversions to the 737 MAX), four 747-8Fs and 28 787s.

## Leasing & Finance

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**Finnair** signed a Memorandum of Understanding in which **GECAS** will buy and leaseback two **Airbus** A350-900s. The aircraft will be delivered to **Finnair** in July 2016 and February 2017, and will be the airline's sixth and seventh A350s. The transaction will be valued at approximately €265 million ($287 million or $143.5 million each) at present foreign exchange rates, and the leases will run for 12 years, with the option to extend. **Finnair** also signed a Memorandum of Understanding to lease four new **Airbus** A321-200s from **BOC Aviation**. The aircraft are scheduled to be delivered in the first half of 2017, and will come from the lessor's order book. The A321s will be leased for eight years. As an interim measure, **Finnair** will damp-lease a pair of A321-200s for one year from an unspecified operator starting in May 2016. The single-aisle planes will operate on its regional European network and feed traffic to its long-haul network which is routed through its base in Helsinki. As part of its fleet renewal plan, **Finnair** will dispose of one ATR 72-500 and its two remaining E170s that are operated by its **Nordic Regional Airlines** subsidiary in January and February. The airline will sell one A340-300 for parting-out in the first half of 2016.

**China Aircraft Leasing Group Holdings Limited (CALC)** will lease three A320-200s to **Sichuan Airlines** for 144 month terms. They will be delivered in 2016. The **China Southern Airlines** subsidiary currently operates an all-**Airbus** fleet of 24 A319-100s, 48 A320-200s, 26 A321-200s, four A330-200s, and four A330-300s. **Jetstar Pacific** signed a Letter of Intent (LOI) with **CALC** to lease two A320-200s. The LOI adds to a firm agreement for two A320-200s that was signed in November 2015. All four aircraft are scheduled to be delivered this year. The airline is a joint-venture between **Vietnam Airlines** and the **Qantas Group**, and it offers budget flights through out Vietnam and South East Asia using 10 A320-200s and two A321-200s.

**Norwegian's Arctic Aviation Assets (AAA)** leasing subsidiary will lease of 12 A320neos to **HK Express**. The twinjets are due for delivery between 2016 and 2018. The **Hong Kong Airlines**' subsidiary currently operates 13 A320-200s on flights to Cambodia, China, Japan, Myanmar, South Korea, Taiwan, Thailand and Vietnam. **AAA** reportedly signed a separate agreement to lease 10 230-seat A321s with an unknown lessor.

**Avolon,** Ireland, completed its merger agreement with **Bohai Leasing**, becoming a wholly-owned indirect subsidiary of the Chinese leasing company. **Bohai Leasing** is a global leader in container and aircraft leasing, and it is majority owned by **HNA Group**. **Avolon** will be the core aircraft leasing brand for **Bohai Leasing** and **HNA Group**, and it will assume management of the **Hong Kong Aviation Capital (HKAC)** business, which is another **Bohai** subsidiary. At the end of the year, **Avolon's** owned, managed and committed fleet, including the **HKAC** fleet, comprised 420 aircraft with an average aircraft age of 3.2 years and a value of $22 billion, serving 67 customers in 36 countries. It is now the world's fourth largest aircraft leasing business by asset value. **Avolon** has orders for 105 A320neo Family and A330neo aircraft, 20 737 MAX aircraft, and six 787-9 Dreamliners. The company's headquarters remain in Dublin, and it has a regional head office in Hong Kong and offices in Dubai, Shanghai, Singapore and in the United States.

# Airline News

**Singapore Airlines (SIA)** raised its cash offer from S$0.41 to S$0.45 a share in order to buy the rest of the stock in **Tiger Airways.** The final offer price valued the budget carrier, at S$1.125 billion ($790 million). Shareholders also can be paid in **SIA** shares at S$11.10 per share. At the first of the year, **SIA** owned, controlled or agreed to acquire 74.5 percent of **Tiger Airways'** shares, and its offer was conditional on its ability to buy another 16 percent by January 22. **Securities Investors Association Singapore,** which represented minority shareholders, had urged **SIA** to increase the buyout price. **Tiger** operates two **Airbus** A319s and 23 A320s on low-cost regional services in South East Asia. It was co-founded by the flag carrier and the country's national investment firm, **Temasek**, in 2004. **SIA** became its majority shareholder in December 2014 after **Tiger** issued new shares. The airline sold off its shares in joint ventures in Australia, Indonesia, and the Philippines and is concentrating on the Singapore market.

**Hawaiian Airlines** wants to launch daily nonstop service between **Narita International Airport** and Honolulu on July 22, 2016. **Hawaiian** will operate a 294-passenger A330-200 on this new route, which complements its existing daily service to **Tokyo Haneda Airport.**

**Azur Air Ukraine** changed its name from **UTair-Ukraine** on November 30, 2015, after it was

**International Air Transport Association (IATA) Posts January 2016 Jet Fuel Prices**. The association updates the world's average jet fuel prices each week**.** On January 1, the world's average price of fuel was $1.130 per gallon, 13.3 percent lower than the December 2015 price of $1.324. Fuel was also 34.0 percent less than it was in January 2015. The price of fuel is affected by location. It was only $0.992 in the Middle East region and was $1.147 per gallon in Latin America. In Asia, fuel cost $1.048 per gallon. Fuel dropped to $1.058 in Europe, and fell slightly to $1.250 in North America, which was the highest priced region. Since last year, fuel costs in those regions dropped by 38.7 and 27.6 percent respectively. **IATA** estimated that the global airline industry's aggregate fuel bill will total $66.7 billion in 2015, a savings of $91.0 billion from the previous year.

purchased by Turkish tour operator **Anex Tourism Group (ATG). ATG** acquired the carrier from **UTair Group** earlier last year for an undisclosed amount. The new owner plans for the airline and its Russian sister carrier **Azur Air** to fly **ATG** clients' hubs to Bulgaria, Egypt, Greece, Italy, Spain and Turkey. The airline operates three 737-800s that are leased from **AerCap**.

**Rayani Air,** Malaysia, recently secured its **Air Services License (ASL)** and **Air Operators Certificate (AOC)** from the **Department of Civil Aviation (DCA),** and started full-service passenger operations on December 20, 2015. It operates two ex-**Malaysia Airlines** 737-4H6s on flights between Langkawi and Kuala Lumpur. It plans to add Kota Bharu, Kuching and Kota Kinabalu shortly. The airline intends to acquire two 737-800s in 2017. It is jointly owned by oil and gas firm, **Merdeka Jayabumi Enterprise**, and mining company, **Terus Maju Metal**.

**A New Liberal Bilateral Air Services Agreement Between the U.S. and Mexico** came into effect on January 1, 2016. Secretary of State **John Kerry** said, "This landmark agreement with one of our largest aviation partners will significantly increase future trade and travel between the United States and Mexico. The signing of this important agreement is the result of more than two years of negotiations led by the **Department of State** with the **Department of Transportation** and the **Department of Commerce**." The agreement was signed in Washington D.C. on December 18, and it removes longstanding restrictions on the number of airlines which are allowed to operate on any given route between the United States and Mexico. Now, passenger and cargo carriers from both countries will be able to add unlimited new trans-border air services between any city in Mexico and any city in the United States. Cargo carriers, in particular, will be able to serve new destinations that were not available under the current, more restrictive agreement.

**Hongtu Airlines,** China, took delivery of its first of two A321-211/Ws (SN 6156), and it will receive its second -211/W (SN 6268) shortly. The airplanes were allocated **UTair**, Russia, but never entered service. They are owned by **VEB Leasing.** The Kunming, Yunnan-based airline will start operations as soon as it secures its **Air Operator Certificate (AOC)** from the **Civil Aviation Administration of China (CAAC). Hongtu Airlines** is a joint venture between **Kunming Evergreen Financing** (30 percent), local tycoon **Tang Longcheng** (20 percent), and the remaining 50 percent is owned in equal share by five local companies. It was launched with 600 million yuan ($96.6 million) in start-up capital. The start-up carrier will operate domestic passenger and cargo services from Kunming.

**Vietnam Airlines** transferred its routes from Hanoi to Dien Bien Phu and Vinh City to **VASCO Vietnam Air Services** on January 1, 2016. **VASCO** operated two ATR 72-500s turboprops until it received two A321-200s from **Vietnam** for the new routes. In 2015, **Vietnam Airlines** distributing various internal routes to its **VASCO** and **Jetstar Pacific Airlines** subsidiaries to improve their efficiency as well as profitability. **Jetstar Pacific** now operates routes from Hanoi and Ho Chi Minh City to Tuy Hoa and Tamky with A320 Family aircraft.

**LAW - Latin American Wings,** Chile, expects to start operations in late January with one 737-3G7 (SN 24634) that it acquired from **Chilejet.** It will offer scheduled passenger flights from Santiago de Chile to Bolivia, Brazil, Dominican Republic, Paraguay and Uruguay. The airline is owned by a consortium of businessmen involved in the Chilean insurance, construction and aviation industries, and it intends to acquire a 737-400 as well.

**Nepal Airlines** is expected to take delivery of its first widebody jet in December. The order must be approved by the airline's board, and the **Nepalese Government**. The airline signed a memorandum of understanding for one A330-200 at the **Dubai Airshow** in 2009. It has already received two A320-200/Ws and it apparently has two more on order for delivery in May and July of 2017. The first two A320s were supposed to replace **Nepal's** two 28-year old 757s but they are still in service. The airline wants to stimulate growth and revenue by expanding its route system to include leisure flights to Australia, Japan, North America and the United Kingdom.

**Lufthansa Technik's Completion Center** has finished the VVIP cabin conversion of a second Boeing 747-8 in Hamburg. The aircraft has now been delivered to an undisclosed customer, possibly the **Abu Dhabi Amiri Flight**. The 747-8 incorporates new features in its 440m² (4,740ft²) cabin, including an integrated cabin management and onboard entertainment system with broadband internet, wireless local area network, TV and satellite communications equipment, **LHT** said. It is now finishing its third VVIP 747-8. **LHT** has completed and delivered 14 VIP 747s since it was established in 1994. It has finished more than 100 VIP airliners, including 40 **Boeings.** The manufacturer has sold eight BBJ 747-8s to governments for use as VIP transports.

# Technical

**British Airways (BA)** will repair the **Boeing** 777-236ER (G-VIIO, SN 29320) that was badly damaged by an engine fire in Las Vegas, and return it to service. The aircraft is being repaired at **McCarran Airport** by **Boeing** engineers. They inspected the airframe and concluded that the damage was "limited" and "suitable for repair", **BA** said. "A team from **Boeing** will carry out the repair work, which will be certified to the same high standards as if the aircraft was brand new," the airline added. The 777's left-hand **General Electric** GE90 powerplant caught fire while the airplane was on the ground. The damaged engine has been removed and it will be replaced. The aircraft is 16 years old. **BA** did not offer an estimate as to how long the repairs will take but it said the 777 "will resume flying once stringent checks have been completed."

# Cargo Pallet

**European Union Regulators** unconditionally approved **Federal Express Corporation's** purchase of its smaller European parcel delivery rival **TNT Express NV**. The **E.U.** found no antitrust concerns after a five-month formal review of the €4.4 billion ($4.8 billion) deal. E.U. Antitrust Commissioner **Margrethe Vestager** said "Many businesses and consumers rely heavily on affordable and reliable small package delivery services, in particular with the growth of e-commerce. The commission has thoroughly assessed the markets affected by this takeover. The conclusion is that European consumers will not be adversely affected by the transaction." The E.U. regulator said "the merged entity will continue to face sufficient competition from its rivals." The acquisition still needs clearance in Brazil and China and the companies said they "anticipate that the offer will close in the first half" of 2016. **FedEx** will acquire all of the Dutch company's vehicles, staff and customers, that will expand its reach and allow it take on **Deutsche Post AG's DHL** and **United Parcel Service (UPS)**. **UPS** tried to buy **TNT** three years ago but it was blocked by the E.U., because the E.U. said that the merger would leave too little competition in the market for guaranteed next-day deliveries among the remaining three "integrator" operators – companies that have extensive air, land and IT networks capable of shifting parcels from one part of the E.U. to the next in the shortest possible time. **UPS** is still appealing the 2013 E.U. decision and seeks to overturn it in a European lower court.

**Airbus Started Building the A330 Beluga XL Rear Fuselage** in Spain, paving the way for the final assembly of SN 001 to begin in early 2017. It will be the first Beluga XL to fly, and will enter service in mid-2019. The rear fuselage is produced by **Aernnova**, and it will be the first part to be delivered to the **Beluga Final Assembly Line** in Toulouse. **Airbus** said the Beluga XL was launched in November 2014 to address its transport capacity requirements in view of the A350 XWB ramp-up and other aircraft production rate increases. The Beluga XL is based on the A330-200 Freighter, with a large re-use of existing components and equipment, and it will be powered with **Rolls Royce** Trent 700 engines. The fleet of five Beluga XL aircraft will provide **Airbus** with an additional 30 percent transport capacity when compared to the current A300F Beluga.

**Trans Avia Export Cargo Airlines,** Belarus, added 747-281F(SCD) (SN 23919) freighter to its fleet. The airplane was sourced from **Aerospace One,** France, and it joined 747-281B(SF) (SN 24399), which was acquired in May 2015. The Belarus freight specialist also operates 11 **Ilyushin** Il-76TDs and two Il-76MDs.

**The International Air Transport Association (IATA)** reported that air cargo volumes (measured in Freight Ton Kilometers) were down 1.2 percent in November 2015, compared to November 2014. Total cargo volumes, however, were higher when compared to October 2015, and were also greater than the year's low point in August. This indicates that the decline in cargo demand may be bottoming out. Cargo volumes rose 5.4 percent in the Middle Eastern region while they were down in the other major markets. Europe was down 2.0 percent, North America by 3.2 percent, and Asia-Pacific by 1.5 percent. Latin American and African markets fell, by 6.4 percent and 6.0 percent respectively. Traffic in November 2014 was particularly strong, so the same month in 2015 seemed pale in comparison. **Tony Tyler, IATA's** Director General and CEO said, "The freight performance in November was a mixed bag. Although the global economic outlook remains fragile, it appears that parts of Asia-Pacific are growing again and globally, export orders are looking better. In fact, the downward trend in FTK volumes appears to be bottoming out. The current volatility of stock markets shows how much the health of the global economy, upon which air cargo depends, remains on a knife-edge."

# Military Market

**Lockheed Martin** ended the year with two contracts for 43 C-130J aircraft from the **U.S. Government**. The first contract announced on December 30, concludes negotiations for a $5.3 billion multi-year deal that was discussed for almost two years. The government firmly funded the first 32 of an eventual 78 aircraft order. That deal includes 13 C-130J-30 Super Hercules transports, and five HC-130J Combat King IIs for personnel rescue and training for the **U.S. Air Force**. A further 11 multi-mission MC-130J Commando IIs will be bought for special operations and conversion into AC-130J Ghostrider gunships. The government will buy two more KC-130J refueling planes for the **Marine Corps** and one HC-130J is being purchased for **U.S. Coast Guard** operations. The airplanes will be delivered by April 2020. In the second contract announced on December 30, the government finalized arrangements for 11 aircraft that were funded by Congress in 2013 and 2014. This contract was separate from the multi-year deal, and completes funding for one C-130J-30, three HC-130Js, and two MC-130Js for the **Air Force,** three KC-130Js for the **Marines**, and two **Coast Guard** HC-130Js. They will be delivered through 2018. **Lockheed Martin** said its overall contract will deliver 30 MC-130Js, 13 HC-130Js and 29 C-130J-30s and six KC-130Js to the services, continuing the long-running replacement of older types. **Lockheed Martin** said the deal "achieves and exceeds" the 10 percent savings promised by packaging orders in a multi-year arrangement because it "anchors and secures" production in Marietta, Georgia. The first multi-year arrangement delivered 60 C-

130Js between 2003 and 2008, the company said. The manufacturer will deliver 16 to 17 C-130Js per year to the U.S. government, and another seven or eight to international customers so that the Marietta plant can maintain its production rate of 24 aircraft per annum. France, India, Iraq, Israel, Kuwait, Oman, South Korea and Tunisia all have C-130Js on order. The first C-130A was delivered to the **U.S. Air Force** in 1956 and the 2,500th aircraft – a HC-130J Combat King II – was delivered to the **71st Rescue Squadron** at **Moody AFB,** Georgia, in December, 2015. C-130s are currently operated from 68 nations and the global fleet has logged more than 22 million flight hours. The C-130J Super Hercules is flown by 19 different operators in 16 nations.

**France Will Buy Four Lockheed Martin C-130Js** tactical transport planes worth $650 million ($162.5 million each). French Defense Minister **Jean-Yves Le Drian** said, "despite budget constraints, the president [France] decided to give our armed forces all the means to pursue your missions." The C-130Js are needed because **Airbus** could not deliver A400M Atlas transports on time.

**Saudi Arabia** signed a Memorandum of Understanding for 30 **Antonov** An-178 tactical transports. If the deal is consummated, the Saudi kingdom's **Taqnia Aeronautics** will build the aircraft locally. The partners will deliver the An-178s to the **Royal Saudi Air Force**, and the deal builds on the growing relationship between **Taqnia** and the Ukrainian airframer **Antonov**. They are collaborating on developing and building the An-132 freighter, which is an updated version of the Soviet-era An-32. The twin turboprops will also be assembled in Saudi Arabia. **Taqnia** is also promoting special-mission variants of the An-148. **Taqnia** will jointly market the An-178 with **Antonov,** to customers the Middle East. The twin-jet flew for the first time in May 2015, and it is a cargo variant of the An-148 passenger jet. It is designed to carry up to 18 tons of payload and is powered by two **Ivchenko Progress** D-436 engines. Civil certification is scheduled by the end of 2016.

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**Airbus A400M Atlas Deliveries in December.** The **German Armed Forces** took delivery of its third A400M military transport (SN 029) on December 21. The second A400M (SN 032) was handed over to **Malaysia,** and the **French Air Force** received its eighth Atlas (SN 031) on December 30. **Airbus Defense and Space** has delivered 21 of its military airlifters to five customers as of January 1, 2016. Deliveries of two A400Ms to Turkey scheduled for 2016 could be delayed. The government bought 10 A400Ms in 2003 and it expects its order to be filled by 2018. Two have been delivered and the third crashed in Spain on May 9, 2014 on a pre-delivery test flight. The Turks and **Airbus** are now negotiating the delivery of a replacement.

**Embraer** put forward a proposal to replace Canada's antiquated **de Havilland Canada** CC-115 Buffalo search-and-rescue (SAR) fleet with KC-390 military jet transports. The six turboprop DHC-5/CC-115s were delivered 48 years ago. The Buffalos are supplemented by 13 **Lockheed Martin** CC-130E Hercules aircraft which were delivered from 1964 to 1967. Canada may accept a mixed-fleet and it wants to award a contract in 2016 and take final delivery by 2023. **Embraer** expects to certify the KC-390 in 2017, and deliver the first ones in 2018. The Brazilian airframer said the KC-390 will not need significant modification, and it already comes with electro-optical/infrared and radar sensors, as required by Canada. A company spokesman said, "the KC-390 was designed to perform SAR missions in the most demanding environments since its conceptual stage. We believe we can fully meet [Canada's] operational needs." Rival **Airbus** and **Alenia Aermacchi** have proposed their C295 and C-27J turboprops, respectively. So far, **Lockheed Martin** has not yet offered the C-130J. **Embraer** said the jet

powered KC-390 could "go further, much faster, and to stay longer on the scene" when compared to its rivals.

**Garuda Indonesia** sold **Boeing** 737-5U3 (SN 28730) to the **Indonesian Air Force** in January**. Garuda** says that the 737 will be used as a VIP transport and joins two ex- **Garuda** 737-4U3s and four 737-200Advs. The 737-400s and one 737-200 Adv are VIP transports and three 737-200Advs were modified for maritime patrol duties. The -5U3 was delivered in 1997 and was **Garuda's** last 737 Classic. Its subsidiary, **Citlink,** operates three 737-500s and has four -300s in storage.

# AIRCRAFT DELIVERIES & SALES

## Airbus

***Airbus A319.*** No **Airbus** A319s were delivered in December. Only 20 A319ceos and 50 A319neos are in backlog. **Saudia Private Aviation,** jointly owned by **Saudi Arabian Airlines** and **PrivatAir,** Switzerland, will launch a dozen daily flights between Jeddah and Riyadh with a VIP-configured A319. Services will be operated under the **Albayraq** brand name and will cater primarily to the business sector. **Saudia Private Aviation** specializes in business charter flights using a fleet of Falcon and Hawker executive jets.

***Airbus A320.*** **Airbus** delivered a record 35 A320s during December, including two -232/Ws (SN 6898 & 6919) to **BOC Avaition.** They were leased to **Tainjin Airlines** and the aircraft came from the lessor's existing order book. **ICBC** leased -232/W (SN 6917) to **Tigerair Taiwan,** and **SMBC Aviation Capital** leased one new -214/W (SN 6911) to **Shenzhen Airlines**. The aircraft came from **SMBC's** direct order book. **GECAS** leased a second -214/W (SN 6893) to **Newloong Air,** and two -214/Ws (SN 6892 & 6902) to **airberlin. Tianjin FAL** delivered -214/W (SN 6732) to **Sichuan Airlines**, one -214/W (SN 6776) to **Hong Kong Airlines,** two -214/Ws (SN 6764 6805) to **China Development Bank Financial Leasing** for lease to **Loong Air,** and two -214/Ws (SN 6759 & 6769) to **Capital Airlines**. **China West Airlines** received its first -214/W (SN 6924); the plane was originally allocated to **Spring Airlines,** and it joins 15 A320s in **China West's** fleet. **Chengdu Airlines** acquired -214/W (SN 6922), and **Spring Airlines** obtained two -214/Ws (Serial Number unknown). They have not entered service yet. In the Americas, **VivaAerobus** acquired two more -232/Ws (SN 6886 & 6888), and **Avianca** received

**IndiGo** had to wait to receive its first A320neo (-271N, SN 6720) until the First Quarter due to what **Airbus** called "industrial reasons" **InterGlobe Aviation,** the airline's parent company said in a statement, "**IndiGo** does not have clear visibility of its future A320neo delivery schedule and the potential for additional delays exist. We are looking at mitigating the potential shortfall in capacity through other options." An **Airbus** spokesman said, "We are in discussions with our first customers on their delivery milestones. What counts is that we deliver a service-ready A320neo for our customers." **Lufthansa** should take the first A320neo after short term fixes to its **Pratt & Whitney** Geared Turbofan engines. The airline will take delivery of 34 A320neos by March 2017. The low-cost carrier has taken delivery of all 100 A320ceos it ordered and has contracted to lease three used A320-232s (SN 2359, 2649 & 2724).

-214/W (SN 6862). **Synergy Aerospace** leased three -214/Ws (SN 6871, 6876 & 6896) to **Avianca Brasil. Virgin America** accepted its 14th of 19 -214/Ws (SN 6889), and **Volaris** bought -233/W (SN 6906). Elsewhere, **Vueling** purchased two -232/Ws (SN 6841 & 6883), and **easyJet** took delivery of two -214/Ws (SN 6885 & 6918). **Saudi Gulf Airlines** bought three -232/Ws (SN 6474, 6583 & 6733), for a total of four. The airplane had been stored after being rolled out earlier this year, while the airline waited for permission to start operations. **VietJet Air** obtained -214/W (SN 6878).

**GE Capital Aviation Services (GECAS)** leased a third A320-214 (SN 1578) to low-cost carrier **VivaColombia** in December. The airline now has nine A320s in its fleet and operates 20 domestic routes within Colombia and six international routes to Lima, Miami, Panamá and Quito.

***Airbus A321.*** **Airbus** delivered 20 A321s in December – a new record. The manufacturer provided two A321s each to three airlines in the Americas. **American Airlines** bought two -231/Ws (SN 6887 & 6908), and **CIT Aerospace** leased two -211/Ws (SN 6884 & 6905) to **Air Canada Rouge**. **Frontier Airlines** accepted its fourth and fifth of 19 -211/Ws (SN 6891 & 6926), which were sold to **GECAS** and leased back. **JetBlue Airways** obtained its 25th of 46 -231/Ws (SN 6903), and **Spirit Airlines** acquired the sixth of 30 new -231/Ws (SN 6897). **LATAM** received three A321s and allocated two -211/Ws (SN 6894 & 6899) to **LAN Airlines**, Chile, and -231/W (SN 6895) to **TAM**, Brazil. In Asia, **BOC Aviation** leased four -231/Ws (SN 6763, 6853, 6863 & 6913) to **Capital Airlines.** The first three airplanes were stored for several months before delivery. **Vietnam Airlines** took delivery of one -231 (SN 6880), and **Air Macau** leased a second -231/W (SN 6912) from **China Aircraft Leasing (CALC).** The aircraft is financed by the **Korea Development Bank, KDB Asia Limited**, and **KEB Hana Bank**. **CALC** and **Air Macau** signed leasing agreements for one A320 and three A321 in May 2015, and the first A321 (SN 6827) was handed over on October 29, with the remaining A320-232/W (SN 6934) and A321-231/W (SN 6938) to be delivered by early 2016. **China Eastern Airlines** acquired one -231/W (SN 6915), and **Juneyao Airlines** took delivery of one -231/W (SN 6916). In Europe, **Wizz Air** leased its second -231/W (SN 6910) from **CDB Leasing**, as part of six aircraft deal. The Hungarian low cost carrier ordered 27 A321ceos.

***Airbus A330.*** **Airbus** delivered three -200s, one -200F and 13 -300s during December, a new record number of deliveries in one month. **Iberia** took delivery of its first High Gross Weight -202 (SN 1694) on December 29. It was the first of 13 -202s that its parent firm, the **International Airlines Group (IAG),** ordered from **Airbus.** The last one will be delivered in 2018. The -202s will fly from Madrid to Central and South America. **Synergy Aerospace** accepted two -243s (SN 1608 & 1657). They are

**China Aircraft Leasing CALC),** the largest independent aircraft operating lessor in China, completed the delivery of the third and the fourth of six A320-232/Ws (SN 6794 & 6901) to **China Eastern Airlines** from **Airbus'** facilities in Tianjin, China, and Toulouse, France, respectively (just before Christmas). **CALC** and **China Eastern** signed the agreement to lease six A320s for 12-year terms in July 2015, and the first two aircraft (SN 6792 & 6854) were delivered on November 5 and 27 respectively. The remaining aircraft will be delivered by the first half of 2016. **CALC** and **China Eastern** began their long-term relationship in 2013 when the airline traded-in three used A300-600F freighters (SN 521, 525 & 532) to **CALC,** when it leased six new A320s from the lessor. **CALC** was the first Chinese lessor to do a packaged deal covering both new leases and the disposal of old aircraft. **CALC** took delivery of 19 aircraft in 2015, increasing its fleet to 63, and it will grow its fleet to 168 aircraft by 2022.

stored until they will be put into service by **Avianca Brasil. Qatar Airways Cargo** received its fourth -243F (SN 1688) and it has one more on order. **BOC Aviation** leased four -343s (SN 1646, 1659, 1670 & 1674) to **AirAsia X** in December. The aircraft orders were transferred from the airline to the leasing company shortly before delivery. **Fiji Airways** took delivery of its first -343 (SN 1692) on December 29. The twinjet was leased from **CIT Aerospace,** and it is scheduled to make its commercial debut in January with flights to Auckland, Los Angeles and Sydney. **SriLankan Airlines** took delivery of its fifth and final -343 (SN 1689), and it leased one (SN 1687) from **CIT Aerospace** for a fleet total of six. **Intrepid Aviation** delivered a second -302 (SN 1690) to **EVA Airways**, and the lessor leased -343 (SN 1691) to **Evelop Air**, Spain. **Intrepid** received its 16th and last -300 (Serial Number unknown) on December 29, and it was placed in storage until a lease could be concluded. This is the third new -343 that the lessor has had to park, after the leases with **Skymark**, Japan, were voided by the airline's bankruptcy. Another four -343s were delivered to the airline before being repossessed by **Intrepid** and stored in Marana, Arizona. Indonesia's **Lion Air** took delivery of its third -343 (SN 1683), **Air China** acquired its fourth 242-ton Maximum Take-Off Weight -343 (SN 1695), and **Hainan Airlines** accepted -343 (SN 1686) after a short storage.

***Airbus A350.*** **Vietnam Airlines** received its fourth -941 (SN 017). The airplane was the second one leased from **CIT Aerospace,** and the other two are leased from **AerCap. Finnair's** second and third -941s (SN 019 & 020) were delivered in December. **GECAS** bought two A350s (SN 018 & 019) from **Finnair** and leased them back. **TAM Linhas Aéreas**' first -941 (SN 024) was delivered on December 17. **Airbus** handed over 14 A350 -941s to four customers on four continents in 2015.

**SMBC** leased its first used A330-203 (SN 535) to **Deutsche Lufthansa's Eurowings** low-cost subsidiary in January. Another four -203s will be handed over to **Eurowings** when their original leases with other airlines expire.

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**Brussels Airlines** will acquire one A330-343 from **Singapore Airlines** in the spring and will use the plane on its five-times weekly flights from Brussels to Toronto in April.

***Airbus A380.*** **Emirates** accepted two more 615-seat, two-class, -861s (SN 202 & 203), and another 519-seat, three-class, -861 (SN 204) in December, for a fleet total of 72. **Airbus** delivered 27 of its flagship airliners this year and it has 139 on backlog.

## Boeing

***Boeing 737 NG.*** **Boeing** delivered 38 737s in December, including three -8H4/Ws (SN 35976, 36937 & 36941) to **Southwest Airlines**. **Dragon Aviation Leasing** leased two -89P/Ws (SN 61314 & 61315) to **China United Airlines** and one -89P/W (SN 61312) to **China Eastern Airlines. Boeing** delivered two -800s each to three Chinese airlines, including two -89L/Ws (SN 44929 & 44930) to **Air China,** two -85C/Ws (SN 40957 & 41393) to **Xiamen Airlines,** and two -89P/Ws (SN 41480 & 41505) to **China Eastern Airlines.** The latter airplane was transferred to **Shanghai Airlines. American Airlines** received its 264th and 265th of 305 -823/Ws (SN 31231 & 33337), and **Lion Air** took delivery of two -8GP/Ws (SN 39873 & 39874). The first was transferred to **Thai Lion Air.** Elsewhere in Asia, **Shenzhen Airlines** obtained -87L/W (SN 39142), and **Donghai Airlines** accepted -83Z/W (SN 61271). **Hainan Airlines** acquired -84P/W (SN 41389) and leased -86N/W (SN 43409) from **GECAS. SMBC**

**Aviation Capital** leased -85N/W (SN 39969) to **Shandong Airlines,** and **AerCap** leased -8U3/W (SN 41815) to **Garuda Indonesia. Lucky Air** leased -84P/W (SN 41591) from **CIT Leasing,** and **Biman Bangladesh Airlines** received its second of two -8E9/Ws (SN 40335). **TimAero Ireland Limited** transferred -84P/W (SN 61324) to **VEB Leasing,** Russia, which leased it to **Urumqi Air,** China. **All Nippon Airways** obtained its 33rd of 36 -881/Ws (SN 62638). **BOC Aviation** delivered the second of three -8H6/Ws (SN 41768) to **Pegasus Airlines**. The third one (SN 41769) will be delivered shortly. The aircraft came from **BOC's** existing order book and all three were originally allocated to **Malaysian Airlines**. **Aeroflot** leased -8LJ/W (SN 41214) from **Avia Capital Leasing (ACS).** In the Americas, The **United States Navy** acquired one more P-8A Poseidon aircraft (-8FV/W, Serial Number unknown). It will enter service once the electronic equipment is installed. One -8CT/W (SN 40337) was handed over to **WestJet Airlines**, and it has six more on order. **GOL Airlines** accepted -8EH/W (SN 40742). **Alaska Airlines** bought its 34th -990ER/W (SN 44110), and it has 31 on order. **Delta Air Lines** acquired its 50th of 100 ordered -932ER/Ws (SN 31961). Elsewhere in the world, **Air Algérie** received -8D6/W (SN 60748), and **Norwegian Air International** acquired -8JP/W (SN 40281).

**Boeing Delivered Two 737-700s in December.** The fourth and final E-7A Peace Eagle Airborne Early Warning & Control (AEW&C) (-7ES/W, SN 33965) was handed over to the **Turkish Air Force** at **Konya Air Base** on December 9. **Boeing** delivered BBJ business jet (-77WER, SN 62468) to **Royal Jet,** United Arab Emirates.

**JTA - Japan Transocean Air** will take delivery of its first of 12 737-8Q3/Ws (SN 61475) in January. It will enter service on February 10 and fly **from Naha,** Okinawa, to Fukuoka and Miyakojima.

***Boeing 747.*** No 747s were delivered in December.

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***Boeing 767.*** No 767s were delivered in December, possibly for the first time since August 1982, when launch-customer **United Airlines** received its first one.

***Boeing 777.*** **Boeing** delivered six 777-300ERs in December. **Emirates Airlines** took delivery of its 79th and 80th of 120 ordered -31HERs (SN 42326 & 42327), and **Qatar Airways** received -3DZER (SN 60333). **China Southern Airlines** obtained -31BER (SN 43225), and **Turkish Airlines** accepted -3F2ER (SN 44125). **Korean Air** acquired its 15th of 23 -3B5ERs (SN 41999).

**National Airlines** wants to lease a pair of 777s for flights between the north eastern United States and the United Kingdom. President and Chief Operating Officer **Ed Davidson** said the recent drop in second-hand 777 prices allowed the U.S. charter specialist to acquire the aircraft during the second or third quarter of 2016. The airline already operates two 757-200s on scheduled passenger

**Crystal Luxury Air,** Aruba, acquired ex-**Air Austral** 777-29MLR (SN 40955) in November. The airline will also obtain one 787-8 and an ACJ319-100, and will use the new aircraft to operate private charters from the United States to the Mediterranean, Indian Ocean and the Pacific for ocean, river or yacht voyages. The airline is a subsidiary of **Crystal Cruise.** The cruise specialist operates two medium-sized, high-end ships, **Crystal Symphony** and **Crystal Serenity,** and one large yacht, the **Crystal Esprit**. Its CEO and President **Edie Rodriguez** said, "With our vast choice of aircraft, we are confident **Crystal Luxury Air** will deliver the fast and hassle-free requirements our guests and discerning travelers have been wanting with global air travel," beginning March 2016. The ACJ319 will carry 30 passengers, including 16 in lay-flat seats.

flights, and its sister company **National Air Cargo** flies two 747-428BCFs on cargo services.

***Boeing 787.*** **Boeing** delivered three 787-8s and six 787-9s in December, including one -8 (SN 37508) to **Avianca,** and the 13th of 20 -8s (SN 40630) to **American Airlines. Scoot**, Singapore, received its fourth -8 (SN 37121). **Virgin Atlantic Airways** accepted two -9s (SN 37973 & 37974). **Air Canada** added its fourth -9 (SN 35268) to its fleet, and **LAN Airlines** acquired -9 (SN 38459). **AerCap** leased -9 (SN 38761) to **Vietnam Airlines,** and -9 (SN 36113) to **KLM Royal Dutch Airlines.** It was the second of 11 Dreamliners to be leased from **AerCap.**

**Norwegian** will operate its 787-9s from **Gatwick Airport** to **JFK International** in New York, starting on March 27, 2016. Services will expand to Boston, Fort Lauderdale and Los Angeles. The aircraft could be operated by the low-cost carrier's **Norwegian UK** subsidiary, which secured its Air Operators Certificate in December. **Norwegian** has 19 787-9s on order from the manufacturer and it will lease another 11 from **AerCap** and **MG Aviation**.

# Regional Jet

***Bombardier*** delivered three CRJ900NGs (SN 15383, 15384 & 15385) to **PSA Airlines** in December, and they will be operated for **American Airlines** under the **American Eagle** brand. **Nordic Aviation Capital (NAC)** leased the 12th and final new CRJ1000 (SN 19044) to **PT Garuda Indonesia,** stemming from a lease deal signed in 2012.

**Nordic Aviation (NAG),** Estonia, will dry-lease two CRJ-700s (SN 10083 & 10085) from **Regional One,** a U.S.-based lessor. The airline is working on its Air Operators Certificate (AOC) and will launch flights under its own name during the first half of this year. The aircraft were operated by **NAG's** now bankrupt predecessor, **Estonian Air,** and are currently stored at **Tallinn Lennart Meri Airport**. They will be used on flights from Tallinn to Amsterdam, Kiev and Munich.

***Embraer.*** **Embraer** delivered three more EMBRAER 170-200 LRs (E175) (SN 17000525, 17000528 & 17000529) to **American Airlines** in December, for a total of 24 of the 60 ordered E175s. **Envoy** is operating the E175s under the **American Eagle** brand. **Republic Airlines** bought three E175s (17000530, 17000531 & 17000532) for operation for **United Express. Alaska Airlines** acquired its fifth of 15 E175s (SN 17000527). The first nine E175s will be operated by **SkyWest Airlines.**

**Colorful Guizhou Airlines** has taken delivery of its first two of seven EMBRAER 190-100s (E190) (SN 19000701 & 19000703) on order from **Embraer** in December. It is a joint-venture between **Guizhou Industrial Investment Group** (95 percent) and **Weining County Construction Investment Group** (5 percent).

***COMAC*** delivered the second ARJ21-700 (SN 105) to its launch customer, **Chengdu Airlines**, in January. **Chengdu Airlines** expects to launch services with the ARJ21 between Beijing, Xian, Wuhan, Shenzhen and Shanghai in February. It has 28 more regional jets on order, and will receive another three ARJ21-700s in 2016.

***Sukhoi.*** **Aeroflot** took delivery of its 33rd and 34th Sukhoi Superjet 100-95Bs (SN 95097 & 95098) in December. The airline still operates 24 SSJs, having retired its 10 oldest SSJ100s. **Red Wings** acquired ex-**Aeroflot** SSJ 100 (SN 95018) from **Sukhoi** in November.

**AZUL Linhas Aereas Brasileiras** accepted its 82nd and 83rd EMBRAER 190-200s (E195) (SN 19000698 & 19000699) in December. The latter was the last of **AZUL's** current generation E-Jets on order, and the plane was painted in a special **SKY TV** livery. **AZUL** is the world's largest operator of the E190 and E195 family, with 88 E-Jets in service. It will receive its first of 30 E195-E2s in 2020.

**Tianjin Airlines** took delivery of its first two E195s (SN 19000700 & 19000702). The airline ordered 20 E195s and 20 E190-E2s in July 2014 and it has the option to order another 18 aircraft. **Tianjin** is the launch customer for the E195 in China. The airline currently operates the largest E190 fleet in China with 45 aircraft serving secondary trunk lines and regional lines.

**Austrian Airlines** became a new operator of **Embraer** E-Jets, when it launched scheduled services with an E195 (SN 19000411) from Vienna to several Central European destinations. The airline received its first of 17 used E195s in August. It will acquire E195 (SN 19000314) from **Lufthansa CityLine** shortly. **Austrian** is replacing its older and less efficient **Fokker** F.70s and F.100s with the E-Jets. **Robert Heusmann** at **Austrian** said, "We are very happy to welcome the **Embraer** jets to our fleet. These 120-seater aircraft will use 18 percent less fuel per seat. Therefore in the future, flying with **Austrian Airlines**, will be even more environmentally friendly." The 120-seat E195s have an average age of 4 years, while the Fokkers were over 20 years old.

# Turboprop Aircraft

***ATR*** delivered a record 17 ATR aircraft in December. **SATENA,** Colombia, took delivery of its fourth ATR 42-600 (SN 1204), and **Travira Air,** Indonesia, accepted its first ATR 42-600 (SN 1017). **AZUL Linhas Aereas Brasileiras** acquired its 28th and 29th ATR 72-600s (SN 1284 & 1294), and it retired its last ATR 42-500s and ATR 72-500s, which it acquired through the merger with **TRIP Linhas Aéreas. AZUL's** -600 (SN 1284) was leased from **Nordic Aviation Capital (NAC). Wings**, Indonesia, received two -600s (SN 1291 & 1298) for a total of 29. **Air Tahiti** acquired its third -600 (SN 1289) and **Bangkok Airways** obtained its fourth -600 (SN 1296). **Stobart Air**, Ireland, received its 10th -600 (SN 1297), which will be operated for **Aer Lingus Regional**. **Avions de Transport Régional** delivered three -600s (SN 1299, 1304 & 1306) to **Air New Zealand Link,** for a total of 10. **Braathens Aviation,** Sweden, took delivery of its second of five -600s (SN 1308). **SAS Scandinavian Airlines** received its 11th -600 (SN 1300), and **Binter Canarias** accepted -600 (SN 1310). **Airlines PNG** bought -600 (SN 1301).

**AirSWIFT**, Philippines will lease its first ATR 42-600 (SN 1205) from **Nordic Aviation Capital** in January, adding it to its fleet of two ATR 42-500s.

**Air Lease Corporation (ALC)** announced the sale of its fleet of 25 **ATR** aircraft to **Nordic Aviation Capital (NAC)**. **ALC** said the "aircraft have served **ALC** well in meeting the demand from airline customers operating shorter sector lengths. As the business has matured, **ALC** has focused more on its mainline jet aircraft operations with these turboprop aircraft now accounting for less than 5 percent of the current fleet. **NAC** is a global leader specializing in meeting the needs of **ATR** turboprop operators and this transaction adds further scale to their business." Most of the ATRs will be transferred to **NAC** during the first half of 2016. **Martin Møller,** Chairman of **Nordic Aviation Capital,** said, "**NAC** is the world's largest turboprop lessor and this fleet of **ATR** aircraft is a fantastic addition to our current portfolio of over 250 aircraft. **ALC** has built up an impressive group of **ATR** customers and we are

delighted to add them to our growing list of customers. We understand **ALC's** desire to maintain focus on mainline jets as **NAC** will also continue to maintain its focus on our core regional aircraft market."

**Novoair,** Bangladesh, bought three ATR 72-500s (SN 636, 805 & 816) from **BQB Líneas Aéreas**, Uruguay, through **Airstream International Group.** The three aircraft will join a fleet of three ERJ-145s which were also purchased through **Airstream**. The first ATR 72 (SN 805) was repainted by **Airbourne Colours** at East Midlands, U.K. and has started domestic services. **Novoair** started operations in 2013.

***Bombardier*** delivered two new Q400 NextGens (SN 4512 & 4513) to **Luxair** in December. **Westjet Encore** received one Q400NG (SN 4511).

**Ryukyu Air Commuter (RAC)**, Okinawa, Japan, took delivery of the very first cargo-combi Dash 8Q-400 (SN 4505) in January**. RAC** is the launch customer for the cargo-passenger combi variant which was unveiled at the **Farnborough Airshow** in July 2014. The regional airline is member of the **Japan Airlines Group** and it ordered five of the type. They will be operated on routes to remote southern islands where there is high cargo demand and medium to low passenger loads. The aircraft offers up to 9,000 lb. (4,082 Kg) of cargo capacity and up to 1,150 cubic feet (32 cubic meters) of cargo volume. In this high-cargo version, the aircraft can comfortably accommodate 50 passengers at 32-inch seat pitch, and 58 at 29-inch seat pitch. The Q400 cargo-combi aircraft's "Class C" cargo com-partments are designed to meet the industry's latest regulations, **Bombardier** said.

***Viking Air.*** **RN-Aircraft,** Russia, took delivery of its first DHC-6-400 (SN 928). It is the first of 10 ordered by the **Rosneft** subsidiary from **Viking Air** earlier this year. **RN-Aircraft** may have third parties, such as **AeroGeo** or **Skol Aviakompania,** operate the -400s until it secures its own Air Operators Certificate (AOC). The Twin Otters will be used to ferry shift workers to oil fields in Krasnoyarsk region, and may enter service during the first half of 2016.

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# Antiques and Other Junque

**EVA Air** is planning to retire its eight A330-200s next year and will replace them with A330-300s. Five -300s will be leased from **BOC Aviation** and **Intrepid Aviation**.

**Malaysia Airlines** will retire its 777-200ER operations by March 26, after a flight from Guangzhou and Kuala Lumpur. The 777 flights to Europe ceased on January 27. The state-owned flag carrier operated seven 777-200ERs with an average age of 14.6 years. **Malaysian** will reorient its network toward domestic and regional operations using a fleet dominated by 737-800s.

**SriLankan Airlines** ended commercial A340-300 operations when the last of seven A340s (SN 374) flew from Chennai to Colombo on January 7. They were replaced by A330-200s and A330-300s.

# Accidents and Safety

*From Aviation Safety Foundation*

**KalStar Aviation Embraer** E190-200LR (PK-KDC, 19000057) suffered a runway excursion on landing at **Kupang-El Tari Airport**, Indonesia, on December 21, 2015. The aircraft touched down

about half way down the runway and did not stop on the remaining tarmac. Its right hand main landing gear broke off and the E195 came to rest in a grassy area. None of the 120 passengers nor five crew were injured.

**Services Air Airbus** A310-304F (9Q-CVH, SN 413) ran off the end of the runway after landing at **Mbuji-Mayi Airport**, Democratic Republic of the Congo, on December 24, 2015. The aircraft impacted several houses at the airport perimeter and killed at least eight persons on the ground, while the four flight crew survived. The accident happened after a heavy rainfall. The runway's surface is severely degraded, but the Congolese aviation authorities, the **Régie des Voies Aériennes**, inspected the runway on December 20 and reported that it was old, but they considered it still "practicable". A **Korongo Airlines Boeing** 737-300 was damaged when loose runway tarmac slabs hit the stabilizers during takeoff from the airport on August 19, 2015.

**Mahan Air Airbus** A310-308 (EP-MNP, SN 620) was damaged when it rolled into a concrete wall and guard rail at **Istanbul-Atatürk International Airport,** Turkey, on December 24, 2015. The airplane taxied to Terminal A and failed to stop until it hit the wall. The nose landing gear collapsed and the A310's nose fell on an airport bus beside the wall. No one was injured.

**GoJet Airlines Bombardier** CRJ-702 (N164GJ, 10256) was struck by an airport vehicle while it was parked at **Chicago-O'Hare International Airport**, Illinois, on January 3, 2016. The vehicle driver and a flight attendant suffered minor injuries. The airplane's right hand wing tip was substantially damaged.

**West Air Sweden Canadair** CRJ-200PF (SE-DUX, SN 7010) crashed while flying from Oslo to Tromsø, Norway, on January 8, 2016. The two pilots were killed. The aircraft was conducting a mail and package flight when the flight crew made a brief mayday call. The plane made a dramatic descent of 22,000 feet in one minute and crashed near Akkajaure, Sweden. The Flight Data Recorder and Cockpit Voice Recorder were both heavily damaged and may not be readable.

**Passaredo Linhas Aéreas** ATR-72-500 (PR-PDD, SN 562) touched down 300 meters short of the runway at **Rondonópolis Airport**, Brazil, on January 9, but the crew was able to perform a go-around and landed the aircraft safely on the runway, on the second try. The nose section was split open on the right hand side and there was further damage to propeller blade tips and main landing gear doors. The 17-year old ATR will probably be repaired. There were no injuries to the passengers or crew.

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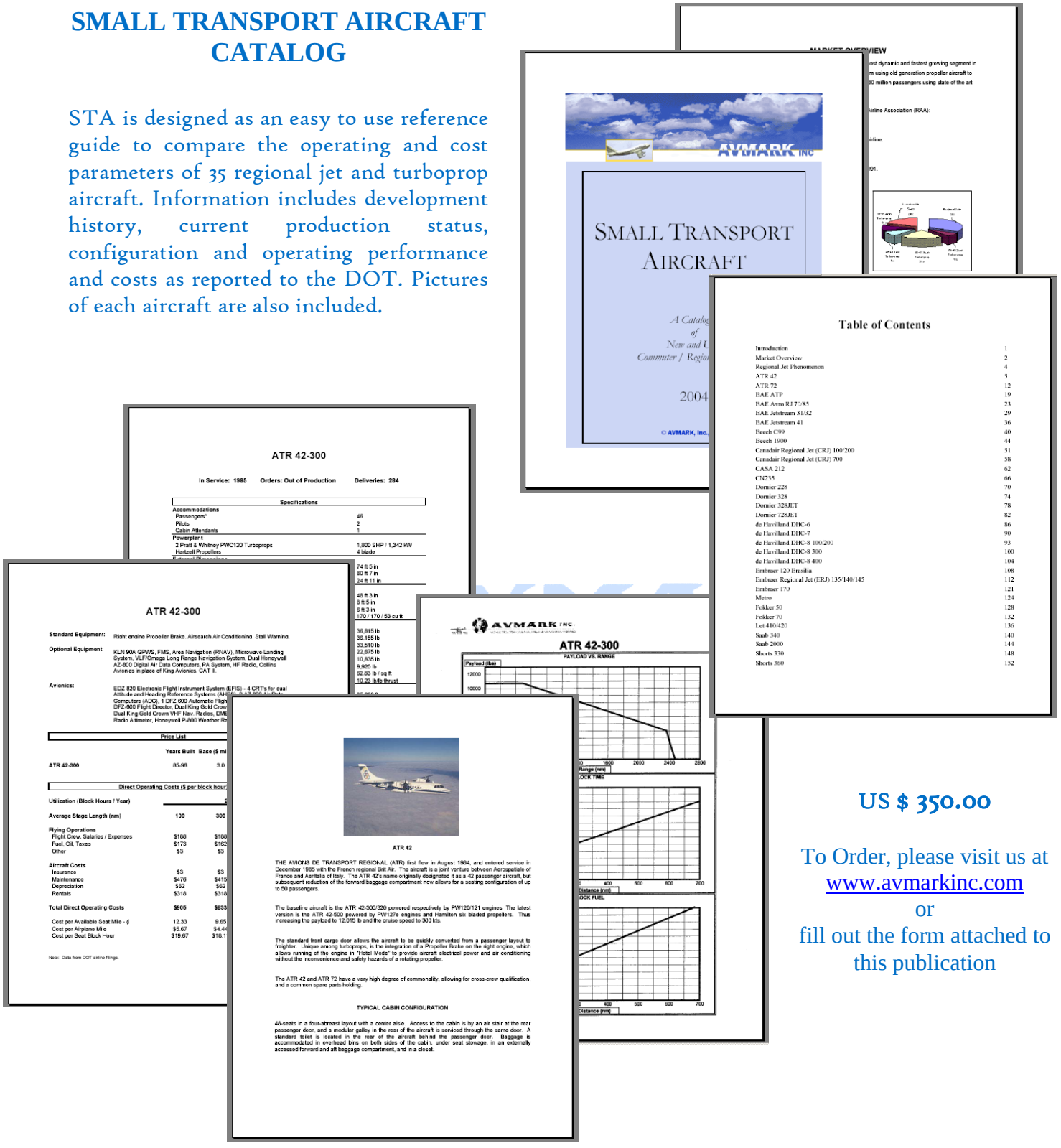


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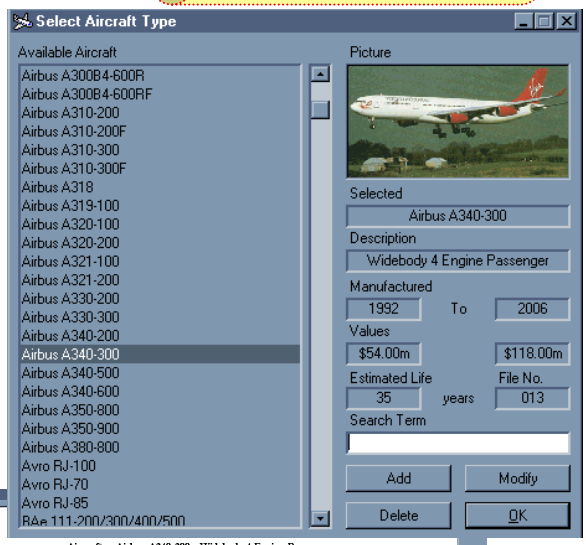


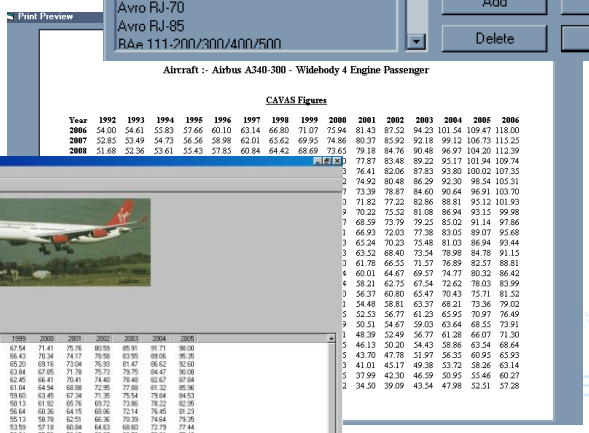


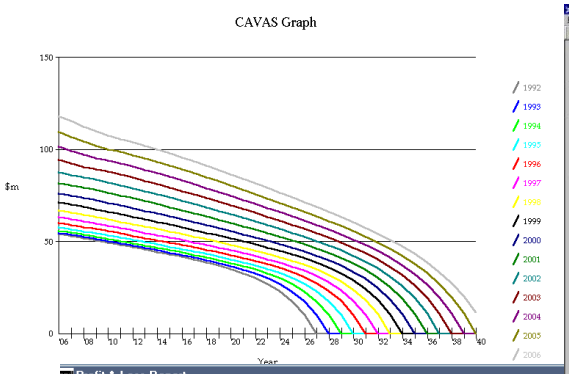


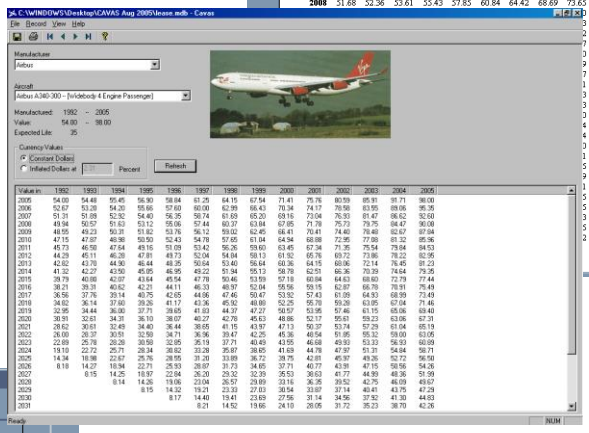

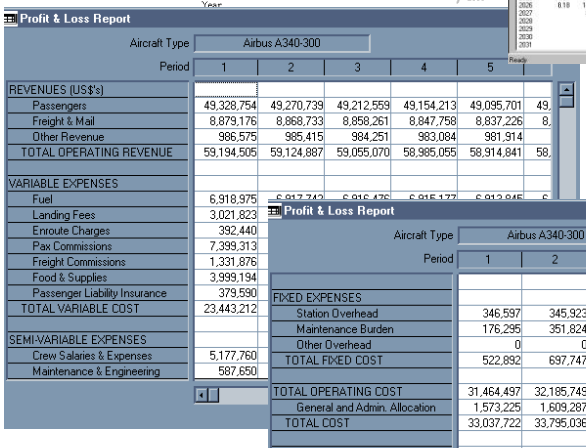


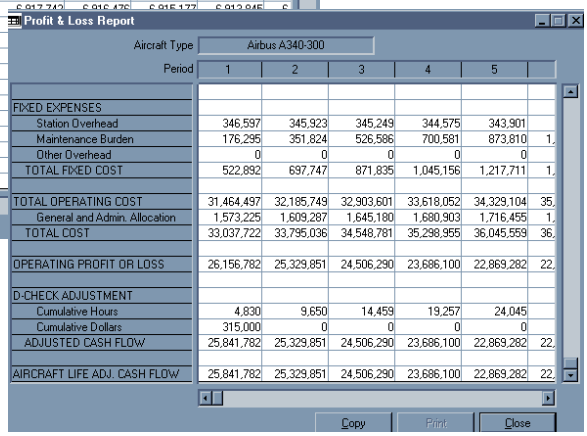


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