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Newsletter

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Market Comment MAKS Air Show Report

United Aircraft Corporation's Sukhoi Superjet has taken a lead role in Russia's civil aircraft ambitions. Before the **2013 MAKS International Aviation and Space Salon** in Moscow, the manufacturer reported 170 orders from Russian and foreign customers. Its last sale was to **Transaero**, when the airline bought up to 16 Superjets in June 2012. **Sukhoi** saw Russian lessor **Ilyushin Finance** firm up its conditional order for 20 that was signed at the **Paris Air Show** in June. The lessor intends to take 15 basic Superjet SSJ100-95s for customers in Southeast Asia and the Middle East, as well as five of the new long-range version. The first planes will be delivered in 2015. The long-range aircraft was certified before the **MAKS** show, and the Russian energy firm **Gazpromavia** will take delivery of the first example by the end of 2013. The Superjet 100LR differs from the basic version in that it can fly 2,470 nm (4,578km) and has a Minimum Take Off Weight (MTOW) of 49.5 tons and strengthened wing. The SSJ100 LR is equipped with a **PowerJet** SaM146 engine that offers a 5 percent increase in thrust compared to the SSJ100 Basic version. The Russian government is providing financing assistance for the deliveries.

Sukhoi delivered the first full-specification Superjet to **Aeroflot** in May. It was configured with the upgraded cabin ordered by the carrier. **Aeroflot** ordered 30 Superjets, but its first 10 were fitted with a lighter weight layout. The airline will trade them in as the updated aircraft arrive. The enhanced Superjet include a more advanced flight-management system and weather radar, as well as video cameras, cabin lighting controls and an extra cabin crew working position. The cabin is fitted with additional passenger ventilation outlets, extra oxygen masks, and the aircraft has three lavatories and four galleys installed.

Sukhoi formerly delivered the first of 20 SSJ100s to **Interjet**, Mexico. It was fitted with a 93-seat cabin interior developed by the Italian design firm **Pininfarina**, and installed by **Sukhoi's** Italian joint venture **Superjet International**, which markets the jet to Western customers. **Interjet** will have all 20 Superjets in its fleet by the end of 2014.

Alenia Parent Finmeccanica said their relationship with **Sukhoi** was difficult and expensive. **Finmeccanica's** new chief executive **Alessandro Pansa** complained, "We signed an agreement [regarding

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the Superjet] which has been implemented in an unsatisfactory way for quite a long period of time.” He wants to review and restructure **Alenia’s** participation in **Superjet International**, but stopped short of threatening to withdraw. **Alenia’s** chief **Giuseppe Giordo** disagreed by saying the program was important and strategic and that it was starting to generate results, now that the **Interjet** airplanes were being delivered to western customers. The SSJ100s operated by Asian customers are delivered directly from the **Sukhoi** factory. The Franco-Russian **PowerJet** engine joint venture also suffered from problems. **Saturn** and **Snecma** build the SaM146 for the Superjet. As of June, **PowerJet** has built 64 engines and delivered 39 of them. It intends to finish 52 engines this year, and will produce them at a rate that is determined by **Sukhoi’s** needs. **PowerJet** claims a despatch reliability of 99.89 percent.

United Aircraft Corporation (UAC) has a backlog of approximately 250 civil aircraft. It built 12 Superjet SSJs in 2012, as well as four **Tupolev** Tu-214s and Tu-204s, four **Antonov** An-148s and a pair of **Ilyushin** Il-96 widebodies. The aviation holding company intends to build 40 of its various civil aircraft this year, including 17 Superjets. The SSJ production rate will reach three per month by the end of this year and will increase to 40 per year in 2014.

At the **MAKS Air Show**, **Russia’s Red Wings** signed deals for 10 **Tupolev** Tu-204SM, 10 **Irkut** MC-21 narrowbodies, and 10 **Bombardier** Q400 turboprops. It signed a firm contract with **Novikombank** to lease the 10 Tu-204SMs which will be delivered in 2014 and 2015. **Red Wings** signed a letter of intent to lease 10 MC-21s from **Ilyushin Finance**, for delivery from 2019 through 2022. It also signed an agreement to lease 10 Dash 8-Q400s from **Ilyushin Finance**. The lease arrangement will be finalized if **Bombardier** establishes an assembly line in Russia. The manufacturer and Russian state-owned industrial conglomerate **Rostekhnologii (Rostec)** signed a Memorandum of Understanding (MoU) to set up a joint-venture production facility in a special economic zone near Ulyanovsk. **Ilyushin Finance Co.** signed a Letter of Intent to order 50 Q400 NextGen airliners. That deal is also contingent on the joint-venture Dash 8 assembly in Russia.

Russian lessor Sberbank signed a Letter of Intent (LoI) for 20 **Irkut** MC-21 and a similar number of **Sukhoi** Superjet 100, regional jets. The lessor inked preliminary agreements with the airframers at the **MAKS** air show. The **Irkut** narrowbodies were

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list-priced at \$1.7 billion and will be delivered from 2019 through 2025. The **Sukhoi** jets were valued at \$700 million. **Sberbank** and **Sukhoi** set up a joint-venture leasing company. **Sberbank** has no firm leasing contracts for the MC-21s or Superjets.

Sukhoi Civil Aircraft Company, UTair Aviation and **VEB-Leasing** signed a three-party contract for six **Sukhoi** Superjet SSJ100 aircraft at the **MAKS International Aviation and Space Salon** in August. The aircraft are scheduled for delivery in 2014. **VEB-Leasing** will purchase the jets from **Sukhoi** for \$217.2 million (\$36.2 million each) for re-delivery to **UTair Aviation** on a financial lease. Aircraft maintenance will be provided by **Sukhoi** with support from **SuperJet International** and **PowerJet**. **UTair** will operate the Superjet 100s in Western Siberia and European Russia, and to Europe.

Ilyushin's Modernized Il-76MD-90A2 military and commercial transport was on display at the **2013 MAKS International Aviation and Space Salon** at Moscow from August 27 to September 1, 2013. The updated and re-engined Il-76 is also known as the Il-476, and the first one will be delivered to the Russian military in 2014. The Russian defense ministry signed a contract for 39 new build Il-76 with a glass cockpit and improved landing gear and brakes. The government is expected to order the in-flight re-fuelling tanker version of the aircraft as well. Production will be moved from Tashkent, Uzbekistan, to a new **Aviastar** factory in Ulyanovsk, Russia. **United Aircraft** believes it can sell 150-200 Il-76MD-90A2s to domestic and export customers over the next 17 years. **Ilyushin** intends to certify the commercial freighter version of the Il-476 because 30 Il-76s were operated in Europe (carrying bulky cargo) before they were banned due to engine noise regulations.

Lithuania's AviaAM Leasing tentatively agreed to buy five **Sukhoi** Superjets. They signed a Letter of Intent for the five regional jets at the **MAKS** air show. The financing house is part of **Avia Solutions Group**, which also includes MRO providers **FL Technics** and **Baltic Aviation Academy**. **AviaAM Leasing** will offer the aircraft to customers in the emerging markets.

Rostekhnologii (Rostec), a Russian Industrial Conglomerate announced the pricing for its new commuter and utility aircraft that it was developing with **Diamond Aircraft**, Austria. The companies intend to design and build a majority-composite 19-seater. The replacement for Russia's fleet of **Antonov An-2s** and **Let L-410s** will be list priced at Rb120 million (\$3.62 million). **Rostec** said at the **MAKS** air show that it will develop a nine-seater aircraft type with **Diamond** and price it at approximately \$2.41 million at current exchange rates. **Diamond** will build the prototype 19-seater in Austria. Some components will be manufactured at the Yekaterinburg-based **Ural Works of Civil Aviation**. Eventually both the aircraft and diesel turboprop engines will be manufactured and assembled in Russia. The 19-seater will be certified in 2016, and will be optimized for operations in arctic conditions, with the ability to land on snow or water.

Bombardier and Rostekhnologii (Rostec) signed a series of provisional agreements that include a Memorandum of Understanding (MoU) to set up a Dash 8Q 400 NextGen final assembly line in Russia. The deal also includes a Letter of Intent (LoI) to sell 50 Q400 NextGen aircraft to **Rostec's** aircraft leasing subsidiary, **Avia Capital Services**. The agreements will be formalized in 2014 and will set out where the airplanes will be built and at what production rate. **Bombardier and Ilyushin Finance** signed a LoI for 50 Q400 NextGen airliners that will also be built in Russia. If definitive agreements can be reached, the firm-order contracts for 100 Q400 NextGen aircraft would be valued at approximately \$3.39 billion (\$39.9 million each) at current list prices. The joint-venture assembly line would produce

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aircraft for Russian customers and would not replace **Bombardier's** production line near Toronto, Canada. Canadian-built Q400s will be delivered to the company's traditional customers. That assembly line can be sustained for several years, and has a backlog of 36 aircraft as of June 2013. The deals are subject to obtaining the required internal, governmental and third-party approvals, as well as other usual conditions. **Bombardier's** President **Mike Arcamone** said, "We recognize this as a landmark opportunity for the Q400 NextGen aircraft program. We are forecasting a 144 percent growth in demand for 60- to 99-seat turboprops over the next five years. Developing local roots in strategic markets is at the core of **Bombardier's** strategic framework, and we have identified Russia as being key to our growth and sustainability." The Russian assembly line is likely to supply customers in emerging economies, such as China and India. The manufacturer believes the Q400 is a young aircraft that offers opportunity for further development, such as flexible cabin/cargo cabin configurations and a possible stretched version.

Bombardier signed a tentative partnership agreement with **Irkut** to provide aftermarket support for the MC-21 narrowbody. The Canadians will support MC-21 operators in Russia and will also support the entry into service of both the MC-21 and **Bombardier** CSeries in Russia and other regions. The MC-21 and CSeries share similar variants of the **Pratt & Whitney** PW1000G geared turbofan engines.



Airbus Sold 10 New Aircraft in August. This month's orders were led by the **CIT leasing**, which booked five current engine option (ceo) A321s, underscoring the airlines' needs for higher capacity single-aisle aircraft. The lessor has now ordered 37 A319s, 129 A320s, 27 A321s, 35 A330-200s, 18 A330-300s and 15 A350s. The previously-unknown **Texas Aviation Group** and its affiliate, the **OHA Centre Street Aircraft Holdco**, contracted for four A319ceo jetliners in August. Completing the month's new business was **China Eastern Airlines'** order for one A330-200, for a total of 22 orders. To date, **Airbus** has sold 942 new aircraft, but its backlog was diminished by

Airbus Orders, Deliveries and Backlog

August 2013

AUG ORD	AUG DEL	AUG CANX	TOTAL ORD	TOTAL DEL	BACK LOG
A318					
-0-	-0-	-0-	79	79	-0-
A319					
4	4	-0-	1,528	1,378	150
A320					
-0-	25	-0-	6,433	3,420	3,013
A321					
5	9	-0-	1,781	838	943
A330					
1	7	-0-	1,256	1,008	248
A350					
-0-	-0-	-0-	682	-0-	682
A380					
-0-	2	-0-	262	108	154
This Month			This Year		BL
10	47	-0-	902	394	5,190

Airbus sold 13,214 aircraft and delivered 8,024 as of August 31, 2013. Forty orders have been cancelled. Total orders, deliveries and backlog include cancellations and order changes. Airbus expects to deliver from 600 to 610 aircraft in 2013.

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40 cancellations. The manufacturer is closer to its full-year target of more than 1,000 passenger jet sales. **Airbus**' backlog stood at 5,190 aircraft at the end of August, representing more than seven years of production.

Airbus Delivered 47 Jetliners during August, comprising of 29 A320 Family aircraft, seven A330s, and two A380s, which brought total deliveries to 394 aircraft to 83 customers in 2013. The manufacturer delivered its 8,000th aircraft in August, an A320 to **AirAsia**'s Indonesian operator. **AirAsia** is the A320 Family's largest customer having ordered 475 A320s (both the ceo and neo versions). **Philippine Airlines** received its first A321.

Texas Aviation Group was formed in 2012 to serve as a niche business for the commercial aerospace industry. It provides a range of services in the aerospace market, including leasing aircraft and engines on four different continents, its web page states. **Texas Aviation Group** ordered three A319 ceos in August. One aircraft was delivered and leased to **American Airlines**. **Airbus** stated that **OHA Centre Street Aircraft Holdco** was an affiliate of **Texas Aviation**. It ordered one A319 and took immediate delivery. That aircraft was leased to **American** as well.

Delta Air Lines announced its order for 30 A321 ceos for use on domestic routes and 10 A330-300s for international routes in September. The 40 **Airbus** jets are worth almost \$5.6 billion at list prices. The airline has selected CFM56-5B engines from **CFM International** to power its A321s and CF6-80E1 engines from **GE** for its new A330s. Deliveries of **Delta**'s new A330s will start in 2015, and its first A321 is scheduled for 2016 delivery. All of the A321s will feature Sharklets and will be built in **Airbus**' new assembly plant in Mobile, Alabama. The orders lessen **Delta**'s reliance on **Boeing**, and is the airline's first purchase of **Airbus** aircraft in 21 years. It was also the airline's largest order since **Delta** bought 100 737-900ERs in August 2011. The carrier currently has 158 **Airbus** aircraft that it inherited from **Northwest Airlines** in its fleet of more than 700 airplanes. **Delta** will be the first carrier to operate the 242-metric ton A330-300 variant, which is capable of flying 500 nautical miles farther than the standard A330-300, or it can carry five metric tons more payload for a shorter distance. Analysts say that the airline won substantial discounts off the \$5.6 billion list prices, for two reasons. **Delta** was the last big American holdout to buy **Airbus**, which encouraged the manufacturer to offer generous discounts. It also bought current engine option A321s for early delivery instead of the more expensive new engine option versions which will not be ready

ANA Holdings, the parent of **All Nippon Airways (ANA)**, intends to order 25 widebody jets from either **Airbus** or **Boeing**. To date, the Japanese carrier's widebody fleet was dominated by **Boeing** jets for three decades. President **Shinichiro Ito** told the press that, "It's getting close to the time we need to make a decision. The key will be what plane matches our needs best." **ANA**'s new planes will replace aging 777-200s that are used for international flights. **ANA** already operates 17 A320s, which is Japan's largest fleet of **Airbus** equipment. The airline will chose between the A350 and the newly-launched 777X. The first A350-1000s will enter service in late 2017 and the 777X will not be ready until end of the decade. If **ANA** picks the A350, it would break **Boeing**'s lock on the Japanese market. Japanese manufacturers build large portions of **Boeing**'s twin-jet widebodies, the 767, 777 and 787 and will presumably build wings for the 777X. **Airbus** has a much smaller manufacturing presence in Japan, and so far, only **Skymark Airlines** has purchased the latest generation of **Airbus** widebodies - six A380s. Currently, Japanese airlines operate 43 **Airbus** narrowbodies and 409 **Boeing** airplanes, from the 130-seat 737-700 to the 550-seat 747-400. This has not deterred **Airbus** from actively marketing the A350, but it is an uphill battle.

until 2017. It chose the improved A330 instead of the all new A350. In both cases, **Delta's** orders filled gaps in **Airbus'** production lines. **Airbus** sales chief **John Leahy** said, "This was a competitive price, but I don't believe it was any different from normal. We don't talk about detailed pricing." **Delta** also declined to comment on the prices it will pay. It did say that **Boeing** aggressively pushed its 777-300 and more 737-900ERs, while **Boeing** said it had tried to secure a deal that made sense for **Delta** and itself. The airline has chosen to acquire low-cost aircraft rather than invest in the newest generation of narrowbody jets. **Delta** CEO **Richard Anderson** recently said the airline would wait for the next generation of jets to prove themselves before ordering any. **Delta** chose to buy used MD-90s and 717s to replace its oldest MD-80s and the DC-9 fleet. **Delta** also deferred delivery of its 18 787-8s until 2020-2022, some 15 years after the jets were ordered. The airline operates the most diverse fleet of aircraft in the industry. It chose to go after low-priced aircraft rather than focus on the efficiency of maintenance, spare parts, crew training and operational costs from operating a limited number of types.

Qatar Airways' first A380 performed its maiden flight from Toulouse to Hamburg in September. The aircraft will be fitted with its cabin before being painted and delivered in 2014. The Doha-based carrier has firm orders for ten A380s and will become the 11th airline to operate the A380. **Airbus** said, "Since first entering service in 2007, 108 A380s are in operation with 10 world class carriers and have accumulated over one million flight hours in more than 120,000 commercial flights. To date, 44 million passengers have already enjoyed the unique experience of flying on board an A380."

Lufthansa Split its Order for 59 widebodies, valued at \$18.9 billion, between the **Airbus** A350-900 and **Boeing's** new 777-9X. The 777X purchase was seen as a victory for **Boeing**, because **Lufthansa** had not ordered the passenger 777 for its fleet, although it bought the 777F for its cargo operation and the 777-300ER for **SWISS**. It is also the airline's first purchase of the A350. **Lufthansa** currently operates 18 A330-300s, 48 A340s and 10 A380s on long-haul routes. The flag carrier purchased 100 A320 family airplanes, catalog valued at about \$10 billion, in May. The airline's supervisory board approved the commitment for 34 777-9Xs and 25 A350-900s. The first A350s are due for delivery in 2016, and the first 777X is scheduled to arrive in 2020. **Airbus** said the airline optioned another 30 A350s and has the option of switching to the -1000 model. **Lufthansa** plans to replace its 13 747-400s and 17 A340-300s. If the airline needs to cut capacity further, it could start retiring its fleet of 24 A340-600s. The airline's long-haul fleet will consist of A380s, A330-300s, A350-900s, 747-8Is, and 777-9Xs by 2025. **Lufthansa** made deals with the engine manufacturers to maintain the new **General Electric** GE9X and **Rolls-Royce** Trent XWB engines that will be fitted to the A350s and 777Xs. **Lufthansa** was the first airline to buy the 777X, which should be officially launched at the **Dubai Air Show** in November. The airline said it now has a firm order backlog of 295 aircraft, worth €36 billion (\$48.8 billion) at list prices.

Boeing Orders

Boeing Sold 16 New Aircraft in August. **Travel Service**, Czech Republic, ordered three 737-MAX-8s. An **Unidentified Customer** purchased seven 777-300ERs and **Xiamen Airlines** finalized is provisional order for six 787-8s dating from May 2011.

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Boeing delivered 56 aircraft in August, including 10 787s. It also handed over 38 737NGs, two 747s, and six 777s. In early August, one unnamed customer canceled one 787 and another cancelled one 737.

Travel Service finalized an order for three 737-MAX-8s, valued at \$301.5 million (\$100.5 million) at list prices. The Czech Republic-based carrier originally announced a commitment to purchase the 737-MAX during the **2013 Paris Air Show**. The order brings the total number of 737-MAX orders to 1,498 airplanes. The first 737-MAX-8 is scheduled to enter service beginning in 2017. **Travel Service** did not give delivery details for its new aircraft. The airline currently operates 28 737NGs.

Xiamen Airlines finalized its order for six 787-8s that dated from May 2011. The order was valued at \$1.27 billion at list prices. The deal was delayed by **Chinese Government**, which finally granted approval in late August. **Xiamen Airlines** is China's only all-**Boeing** carrier and it has been consistently profitable for 27 consecutive years. **Xiamen** is a member of the **SkyTeam alliance**, and flies **Boeing** 737NGs and 757-200s on domestic routes and regional services to Northeast and Southeast Asia. Its first 787

Dreamliner will be delivered in July 2014, allowing the airline to launch new long-haul routes from its base in Fujian to Europe, North America and Australia. Most traffic from China to Europe and the Americas goes through the three main hubs of Beijing, Guangzhou and Shanghai, and passengers normally catch connecting flights to their final destinations. Airport congestion and demand for point-to-point connections mean that airlines are looking at other cities to serve as ports of entry into China such as Fujian. **Xiamen** will take delivery of its 100th **Boeing** aircraft in November.

In Mid-September, Boeing announced 48 new orders: **Air Lease Corporation (ALC)** purchased 33 787s and four 737s, **GECAS** bought 10 787s, and a **Business Jet / VIP Customer** contracted for one 737 BBJ. Customers cancelled four 737s, raising the number of 737 cancellations to 100. **Boeing** sold 944 new aircraft this year and lost 114 existing orders, for a net total of 830 orders as of September 17.

Boeing August 2013 Orders, Deliveries

AUG ORD	AUG DEL	AUG CANX	TOTAL ORD	TOTAL DEL	BACK LOG
737					
3	38	-1	11,161	7,716	3,445
747					
-0-	2	-0-	1,525	1,472	53
767					
-0-	-0-	-0-	1,108	1,054	54
777					
7	6	-0-	1,467	1,127	340
787					
6	10	-1	936	83	853
This Month			This Year		BL
16	56	-2	786	414	4,745

Boeing sold 23,727 aircraft and delivered 18,982 as of August 31, 2013.

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

Sales totals are net, minus 110 cancellations. Boeing expects to deliver from 635 to 645 aircraft in 2013,

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GE Capital Aviation Services (GECAS) completed an order for 10 787-10 Dreamliners that was announced at the **2013 Paris Air Show**. The order was valued at \$2.9 billion (\$290 million each) at list prices. The new 787-10 was launched in June 2013, and will carry 300 to 330 passengers up to 7,000 nautical miles (12,964 km) and will be able to fly more than 90 percent of the world's twin-aisle routes. To date, the 787-10 has accumulated 102 orders and commitments from five customers worldwide. With the Dreamliner purchase, **GECAS** has ordered 598 aircraft from **Boeing** since 1995, including 737s, 747s, 757s, 767s, 777s and 787s. It has taken delivery of 451 **Boeing** airplanes.

Air Lease Corporation (ALC) completed an order for 30 787-10 and three 787-9 Dreamliners, valued at \$9.4 billion (\$284.8 million each) at list prices. The commitment was originally announced during the **2013 Paris Air Show** in June. The 787-9 completed its first flight in September and the first one is scheduled for delivery in mid- 2014. The lessor also ordered four 737s. **ALC** had previously ordered a dozen 787-9s, 15 777-300ERs, 78 737-800s and 80 737-MAX-8/-9s. The first 787-10 will be delivered in 2018.

Boeing Predicts that China Will Need 5,580 New Airplanes Over the Next 20 Years. The company's annual **China Current Market Outlook** forecast that China's airliner fleet will triple over the next two decades. The aircraft will be worth \$780 billion. VP of Marketing, **Randy Tinseth**, said China's traffic will grow at nearly 7 percent each year. Chinese tourism and intra-Asia travel will help spur strong demand for single-aisle airplanes, with deliveries expected to total 3,900, valued at \$370 billion, through 2032. Long-haul international traffic was forecast to grow at an annual rate of 7.2 percent. This growth in the long-haul segment was expected to result in demand for an additional 1,440 new widebodies. **Boeing** forecast that 240 regional jets (fewer than 90 seats), worth \$10 billion, will be delivered. The 200-300 seat widebody market will require 730 units, worth \$170 billion. The 300-400 seat medium widebody requirement was for 640 aircraft, valued at \$200 billion, and only 100 airplanes in the 400+ seat large widebody market will be delivered. They will be worth \$30 billion. China will account for 16 percent of the total world aircraft market. **Boeing** projects investments of \$4.8 trillion worldwide for more than 35,000 new commercial airplanes to be delivered during the next 20 years.

WestJet signed a Letter of Intent (LoI) to purchase 40 737-MAX-8s and 25 737-MAX-7s for delivery starting in September 2017. The pending order was valued at \$6.3 billion at current list prices. The new airplanes will be used to replace older 737NGs in **WestJet's** fleet. The 737-MAX aircraft will be powered by **CFM International** LEAP-1B engines. The 737-MAX design includes **Boeing's** advanced technology winglets and the **Boeing Sky Interior**. Five other North American airlines have ordered the 737-MAX aircraft.

The First 787-9 Dreamliner took off from **Paine Field** near Everett, Washington, on September 17. The plane (SN 41988) flew for 5-hours and 16-minutes, and reached an altitude of 20,400 feet (6,218 meters) and an air speed of 250 knots, or about 288 miles (463 kilometers) per hour. The aircraft holds 40 additional passengers and can fly 300 nautical miles further than the standard 787-8. It was rolled out of the factory on August 24. **Boeing** said the 787-9 was on schedule and it has the second and third -9 airplanes in final assembly. The first test plane is powered by two **Rolls-Royce** Trent 1000 engines. One of the other two aircraft will be fitted with **General Electric** GENx engines. Over the coming months, the fleet will be subjected to a variety of tests and conditions to demonstrate the safety and reliability of

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the airplane's design. First production 787-9 will be delivered to launch customer **Air New Zealand** in mid-2014. Twenty-five customers have ordered 388 787-9s, accounting for 40 percent of all 787 orders.

Regional Report

Bombardier Aerospace CSeries First Flight. The CSeries prototype flew from **Mirabel Airport** on September 16, ending more than eight months of delays for the \$3.4 billion aircraft program. The Flight Test Vehicle 1 touched down in front of a crowd of about 3,000 employees, guests and reporters after about 2 1/2 hours aloft. **Bombardier** has built five test aircraft and will use them to finish certification and get the plane into service. The airplane is built with composite materials and is powered by **Pratt & Whitney's** new PW1500G-g geared turbofan engine. The CSeries will cost about 15 percent less to operate, will burn about 20 percent less fuel and be about four times quieter than existing A319s and 737-700s, according to **Bombardier**. It will compete with the newest **Airbus** and **Boeing** narrowbody jets and will carry from 110 to 160 people. The CSeries will enter service several years ahead of the A320neo and 737-MAX, which will also be powered by more fuel-efficient **P&W PW1500G** and **CFM LEAP-1** engines. **Bombardier** said the CSeries revealed at least one technical problem. An alert warned the pilots of a fault in one of the subsystems, but the advisory message did not affect the plane's performance and would not have required the pilot to land even if the aircraft had commercial passengers aboard, chief test pilot **Chuck Ellis** said. At the post-flight press conference, **Bombardier Commercial Aircraft** President **Michele Arcamone** said the CSeries program cost about \$3.9 billion, of which \$500 million were interest expenses. The official estimate to develop the CSeries was \$3.4 billion, but the estimate fluctuated due to suppliers, materials and other factors. The new jet will be certified after a rigorous 12-month flight test program. So far, **Bombardier** has sold 177 CSeries jets, short of its goal of 300 sales. **Airbus** and **Boeing** have sold more than 3,800 of their A320neo Family and 737-MAX airplanes. Very few of those orders are for

Mitsubishi Regional Jet's First Flight is now delayed until the second quarter of 2015. **Mitsubishi Aircraft Corporation (MITAC)** announced it revised the schedule of the Mitsubishi Regional Jet (MRJ) program. The first flight was slated for the second quarter of 2015, and the first MRJ will be delivered to **ANA All Nippon Airways** two years later. The prior schedule called for the airplane to fly this autumn and for it to be delivered between the summer of 2015 and winter of 2016. **Mitsubishi** said, "In the course of developing the MRJ with a focus on safety, unprecedented fuel efficiency, and passenger comfort, **MITAC** has simultaneously addressed processes in which design and development of aircraft system and component specifications are aligned with safety certification. Design and respective certification, however, have taken greater resources than anticipated which, in turn, impacted component deliveries and aircraft fabrication. In step with program partners, **MITAC** has established this new schedule to take into account the fulfillment of respective safety certification standards. Assembly of the first test airframes is under way in preparation for respective ground and flight tests." **Mitsubishi Aircraft** was still confident that its sales prospects will not be diminished. "We don't believe there will be an impact on MRJ sales, particularly from the angle that our aircraft is further along development, manufacturing and entry into service stages, as well as our stance that the MRJ is an overall superior, more fuel efficient aircraft compared to **Embraer's E-Jet E2**" a spokesman said. Two U.S.-based MRJ customers, **Trans States Holdings** and **SkyWest Airlines** have expressed "continued strong confidence" in the MRJ and still support the program. **Mitsubishi** has a backlog of 165 firm orders and 160 options.

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the A319neo and 737-MAX-7 models that compete directly with the CSeries, which suggests that the CSeries is too small. **Bombardier** expects it will win half the 100- to 149-seat niche market over the next 20 years. It was expected that airlines will look more closely at the CSeries now that it was flying and its performance was proven.

Air Canada is looking at the **Bombardier** CSeries jetliner as part of its narrowbody purchase decision. It will order more than 100 airplanes by the end of the year. A big purchase by **Air Canada** would bolster the CSeries' order book. The manufacturer failed to announce new orders at the **Paris Air Show** in June, after some speculation that a large Gulf carrier was ready to commit.

Embraer Delivered the 1,000th E-Jet on September 13. The E175 was handed over to **Republic Airlines** during a ceremony at São José dos Campos, Brazil. The subsidiary of **Republic Airways Holdings, Inc.** will operate the aircraft on behalf of **American Eagle**. **Republic** ordered 47 E175s in January 2013 and optioned to buy another 47 aircraft. **Embraer** President & CEO **Frederico Curado** said, "This is truly a remarkable milestone given that we delivered 1,000 airplanes in less than ten years. This makes **Embraer** E-Jets among the most successful aircraft programs in the history of commercial aviation." **Republic Airways Holdings** took delivery of its first ERJ145 in 1999, and it received the 400th production E-Jet in 2008. The airline operates the largest fleet of E-Jets in the world. The E-Jets family entered revenue service in 2004 when the first aircraft was delivered to **LOT Polish Airlines**. **Embraer** E-Jets currently hold a 50 percent market share and account for 62 percent of deliveries in the 70-130 seat segment. Since January 2013, **Embraer** has sold more than 330 E-Jets and the improved E-Jet E2s.

Harbin Embraer Aircraft Industry Co. Ltd. (HEAI), **Embraer's** joint venture with **Aviation Industry Corporation of China (AVIC)**, flew the first Legacy 650 large executive jet assembled in China in August. It will be delivered by the end of 2013. The Legacy 650 was based on the ERJ135 regional jet. **Embraer** built an executive jets assembly line in China, where it previously assembled the **HEAI** ERJ145 regional jet. In June 2012, **Embraer** signed an agreement with **AVIC** to cooperate on the Legacy 600 and Legacy 650 programs, using the existing infrastructure of their joint venture. The Legacy 650 entered service in late 2010. It has a range of 3,900 nautical miles (7,223 kilometers), and is capable of nonstop flights from Beijing to Dubai and Hong Kong to Adelaide (Australia), while carrying four passengers under NBAA IFR conditions. It has the largest cabin in its class, offering three distinctive cabin zones. The Legacy 650 can carry 14 passengers who can enjoy the latest-generation entertainment system and high-speed internet, **Embraer** said. The manufacturer delivered the first Legacy 650 to the Chinese market in 2004, and it booked firm orders for 21 Legacy 650s and five options since then. **Embraer Executive Jets** forecast that a total of 805 executive jets will be sold in the Chinese market over the next decade. The large-cabin business jet class will represent 51 percent of this market, accounting for 78 percent of the total value of deliveries. The Chinese executive aviation market grew at an average of 27 percent per year, fueled by a 26 percent growth of the wealthiest population from 2008 to 2012.

Air Canada transferred its 15 EMBRAER 175 regional jets to **Sky Regional**, which will operate the aircraft on behalf of the flag carrier under a capacity purchase agreement. **Sky Regional** now operates 20 aircraft on behalf of **Air Canada** under this contract. **Sky Regional** became an **Air Canada Express** partner in May 2011, when it started Dash 8 Q400 services between **Billy Bishop Toronto City Airport** and **Montreal Trudeau Airport**.

Engine News

Transaero Airlines selected **Engine Alliance** GP7200 engines to propel the four **Airbus** A380s that it ordered in June 2012. **Transaero** contracted for a 12-year **Fleet Management Agreement** to cover the maintenance, repair and overhaul of the engines. The engines and **Fleet Management Agreement** were valued at more than \$500 million over the life of the contract. The first A380 will be delivered in 2015. **Transaero** is the largest operator of widebody aircraft in Russia, the CIS and Eastern Europe. The A380s will serve high-density routes, in 640-650-seat configuration, including 12 first-class and 24 business class seats.

Delta Air Lines selected **CFM International's** CFM56-5B engines to power the 30 A321ceo (current engine option) aircraft that it ordered in September. The agreement was valued at more than \$850 million at list price, and it included spare engines and a suite of material support agreements for the new fleet. **CFM International** will provide comprehensive repair and replacement of life-limited and non-life limited parts for the CFM56-5B engines. The agreements also provide **Delta** with technical data for component repairs and engine overhaul to assist their operations. **Delta** was **CFM International's** first customer. It launched the CFM56 into commercial service on April 24, 1982 when it flew the very first **McDonnell Douglas** DC-8-71 powered by CFM56-2 engines. **Delta** currently operates approximately 210 A320 and 737 family aircraft powered by CFM56 engines, and has 100 CFM56-powered 737-900ERs on order.

CFM International started testing the first full LEAP engine, which launched a three-year ground and flight test certification program that will use 60 engines. The LEAP engine will be certified in 2015 and the first will enter commercial service on the **Airbus** A320neo in 2016. The first LEAP-1A engine was fired on September 4, and reached full take-off thrust after a series of break-in runs. The LEAP-1A will be installed on the A320neo Family. The engine shares common turbo-machinery with the LEAP-1C, which will start its test program in late September or early October. The certification program will encompass all three LEAP engine variants, and will include 28 ground test engines and 32 flight test engines for **Airbus**, **Boeing**, and **COMAC**. These engines will accumulate approximately 40,000 hours and 18,000 engine cycles over the next three years. **CFM** officially launched the LEAP engine in 2008. The engine was designed to bring double-digit improvements in fuel efficiency, emissions and noise, while maintaining reliability and low cost of ownership of its predecessor CFM56 engine family. In 2009 **COMAC** chose the LEAP-1C engine for its C919. **Airbus** followed in 2010 when it selected the LEAP-1A engine as an option on the A320neo family. In 2011, **Boeing** selected the LEAP-1B as the sole powerplant for its new 737-MAX.

Order Changes and Cancellations

Airbus Order Shuffle. Remarkably, there were no order changes or cancellations in August.

Boeing's Order Cancellations and Changes. In August, **Boeing** lost one 787 order, the first of that type to be cancelled this year. A customer dropped one 737 order, and a 737-800BBJ customer switched its order to the smaller 737-700BBJ model.

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In July, **Royal Air Maroc** cancelled its last five 737-800 orders, and four 737-800s were dropped by **Air Europa**, leaving six to be delivered. **Aerosvit Airlines** transferred its backlog of five 737-800s to **Golania**, a previously unknown Ukrainian company. **Okay Airways** and **UTair** each converted three of their outstanding 737-800 orders to the -900ER type. **Lion Air** switched four 737-900ER orders to the -800 model. **Aviation Capital Group** dropped five 787-8 orders and bought five 787-9s. **Air Canada** exchanged 22 787-8s for the same number of -9s. The airline now has ordered 15 787-8s and 22 of the larger 787-9s.

Leasing Companies

International Lease Finance Corp. (ILFC) ordered 15 A321neos in July and it will lease all of them to **American Airlines**. **American** ordered 130 A320-family aircraft in 2011, split evenly between the A319 and A321. The 65 A319s will be equipped with **CFM International** CFM56-5B engines, and the 65 A321s with **International Aero Engines** V2500-A5s. All 130 will be delivered by the end of 2017. **Airbus** has apparently sold 30 delivery positions to lessors, but its orders and deliveries web page does not reflect that yet. **Airbus** is negotiating with other lessors and funds regarding additional aircraft. **American** has conditional orders for 130 A320neo-family aircraft, to be delivered after 2017.

Air Lease Corporation (ALC) announced the long term lease of one **Boeing** 737-700 (SN 33015) to **Georgian Airways**, based in Tbilisi, Georgia. The aircraft is scheduled for delivery in October, 2013. The flag carrier operates scheduled services to many destinations in Europe, the Mediterranean, the Middle East and Russia, with **Boeing** 737s and CRJ regional jets.

AWAS will long-term lease two new A320-200 aircraft to **Volaris**, Mexico. Earlier this year, **AWAS** acquired one **Volaris** A320 from another lessor for continued lease by the airline.

FLY Leasing purchased another new **Boeing** 737-800 and placed it on a long-term lease to a leading Asian airline.

Alexander Lebedev, the Russian tycoon owner of now-defunct German airline **Blue Wings**, won a law suit against **GECAS** over its repossession of seven **Airbus** A320s. The case centered on how **GECAS** behaved when it repossessed the planes, which had been bought with a loan from a **General Electric** subsidiary in 2007 and 2008. Mr. **Lebedev** owned a stake in **Blue Wings** through his investment firm **Alpstream**. The airline shut in 2010 due to financial problems. He said **GECAS** was supposed to get the best price for the fleet, to recoup its loan and return the remainder to **Alpstream**. He claimed it did not perform its duty as a mortgagee when it sold the planes by auction. **GECAS** bought the airplanes for \$146.8 million at the auction. Mr. **Lebedev** complained that the auction was not conducted fairly, because **GECAS** bought the planes for lower than their market value of \$157.3 million, with the intention to lease the A320s to **JetBlue**. **GECAS** countered that the auction was transparent, well-publicized and had attracted 38 potential bidders. The British **High Court** ruled the auction was a "charade" and that **GECAS** should have paid the market price for the aircraft, due to its prior intentions to lease the A320s. The judge ruled that **Alpstream** suffered a loss of \$10.17 million, plus interest, which could be demanded from **GECAS**. The judge disallowed Mr. **Lebedev's** claim that **GECAS** had spent too much money refurbishing the planes after they were repossessed. A **GECAS** spokesman said the company was disappointed and would appeal the decision. "We did everything in our power to manage the claimants' defaults appropriately and in accordance with standard industry practices," he said.

BOC Aviation reported a net profit of \$163 million after tax for the first six months of 2013. This was, 57 percent higher than the same period last year. The company had been consistently profitable since it was founded as **Singapore Air Lease Enterprise (SALE)** in November 1993. It earned more than \$1 billion in cumulative net profit after tax since the **Bank of China** acquired the company in December 2006. **BOC Aviation's** total assets had increased to \$9.9 billion after paying its first dividend of \$113 million to the **Bank of China Group**. Their cash stood at \$680 million, and its debt-to-equity was 4:1. At the end of the half, the lessor's fleet of 223 modern aircraft was flying with more than 50 airlines worldwide. **BOC** owned 198 and managed 25 aircraft, and has contracts to purchase and leaseback 16 aircraft with airlines. The lessor took delivery of 20 new aircraft during the first half, and purchased 10 for leaseback. **BOC** leased four new A320-200s to **Vueling Airlines**, three 777-300ER aircraft to **Thai Airways**, and its first two new **Embraer E190s** to **Jetairfly**. **BOC Aviation** has one of the youngest portfolios in the leasing business, with an average aircraft age of less than four years.

Airline News

American Airlines, US Airways and the U.S. Justice Department said they were open to settling a court fight over whether the two companies should be allowed to merge. In mid-August, the **Justice Department (DOJ)** sued in federal court to block the merger which would form the world's largest air carrier. The government fears the merger would lead to higher fares for customers, but the airlines claimed the merger would make them more competitive. Apparently both sides are correct—higher fares will lead to a profitable and stable airline market. The **DOJ** complaint focused on **National Airport**, near Washington, D.C., where the two companies own a combined 69 percent of takeoff and landing slots. It also claimed the airlines dominate the market in more than 1,000 city pairs. The airlines and **DOJ** are trying to settle the suit through concessions to the government, before the trial on November 25. Because of the **DOJ** suit, both airlines agreed to delay the merger due date, but the deferral puts a strain on the parties, because they are unable to merge, nor can they make independent long-range plans. The airlines' labor unions strongly voiced their opposition to the **DOJ** anti-trust suit. **American's** pilots, both airlines flight attendant unions, and the **AFL-CIO's Transportation Trade Department** strongly oppose the **Obama Administration's** case. The **Allied Pilots Association (APA)** represents 10,000 **American** pilots, and argued that the merger would make the two airlines competitive with the larger **Delta** and **United**. Those airlines help bankrupt **American** after they grew through mergers with **Northwest** and **Continental**, respectively. The **APA** said the merger would "significantly expand the choices of travel destinations," and it asked why the federal government was attempting to block this merger after approving four prior ones. The **Association of Flight Attendants** represents **US Airway** cabin crews, and said the suit was a "war on workers." Assistant Attorney General **Bill Baer** replied, "We determined that the merger – which would create the world's largest airline and leave just three

Delta Air Lines and Virgin Atlantic Airways won **U.S. Department of Transportation** approval of antitrust immunity to let them coordinate fares and schedules. The airlines will combine their networks and complete a commercial relationship started by **Delta's** recent purchase of a 49 percent stake in **Virgin**. The airlines already code-share on select routes. The antitrust immunity would allow the two companies to share costs as though they were a single entity. **Delta** bought shares in **Virgin** from **Singapore Airlines** for \$360 million in order to grab a larger share of trans-Atlantic flights which is the world's richest market for premium passengers. **British Airways** and **American Airlines** currently control more than half of that service, and were the only airlines to oppose the tie-up.

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legacy carriers remaining in the U.S. – would substantially lessen competition for commercial air travel throughout the United States. Importantly, neither airline needs this merger to succeed. We simply cannot approve a merger that would result in U.S. consumers paying higher fares, higher fees and receiving less service.” The U.S. Bankruptcy Judge **Sean Lane** approved **American Airlines’** plan to exit bankruptcy protection and its merger with **US Airways**. The judge also said the anti-trust lawsuit blocking the deal was no reason to delay. The Chapter 11 reorganization plan will not take effect until the merger is cleared by the **DOJ**. If the government succeeds in blocking the merger, **American’s** restructuring will go back to square one, requiring it to come up with a new strategy for paying back the creditors. **American’s** shareholders, unions and most creditors want the plan to succeed. Some plaintiffs in another antitrust lawsuit against **US Airways** complained that there was no “Plan B” if the **DOJ** prevailed and the merger was blocked. Judge **Lane** said, “There can be no dispute that the plan is feasible if the merger succeeds.” The government argued that **American** can emerge from bankruptcy and compete on its own without the merger. In that case, it will have to develop a new plan to exit court protection.

IATA Posts September Jet Fuel Prices. The association updates the world’s average jet fuel price each week. On September 13, the average price of fuel was \$3.024 per gallon. The fuel price was \$3.0198 per gallon on August 16. The August price was 1.1 percent higher than in August, and was 7.8 percent less than in September 2012. The price of fuel is affected by location. It was only \$2.95 in the Middle East region and was as high as \$3.14 per gallon in Latin America. **IATA** forecast that the global airline industry’s fuel bill will total \$124.5 billion in 2013. This was a decrease of \$3 billion over 2012.

US Airways and American Airlines have gone on the offensive and demanded the **Justice Department (DOJ)** turn over documents relating to its approval of four previous airline mergers. In their motion, the airlines asked for the **DOJ’s** analyses, studies, forecasts and other documents stemming from its approval of the mergers of **Delta Air Lines** and **Northwest Airlines** in 2008, **United’s** acquisition of **Continental** in 2010, the combination of **Southwest Airlines** and its discount rival **AirTran** in 2011, and **US Airways** purchase of **America West** in 2005. The government said the request was too broad, and that data on previous mergers was not relevant to this case, but it is expected that the court will grant the request. It is also assumed that the merger will eventually be approved if the companies sell certain assets, such as slots and gates at **National Airport** which will open the airport to more competition.

Polet, a privately-owned Russian carrier, intends to acquire Western-built narrowbody jets to increase its capacity to fully meet growing demand for charter flights. The airline is based at Voronezh, and it is looking at obtaining five **Airbus A320 Family** or **Boeing 737** aircraft with up to 150 seats. The airplanes will be used on routes to Greece, Spain and Turkey, which are now served by smaller aircraft. **Polet** operates two **Antonov An-148** regional jets, five leased Saab 2000s and five owned Saab 340s. The larger A320s or 737s will be acquired on operating lease terms and should initially cost \$1.5 million per aircraft.

Spring Airlines, China, intends to offer domestic services in Japan from Tokyo’s **Narita Airport** to meet growing demand for low-cost flights in Asia’s second-biggest economy. China’s biggest non-government controlled carrier and Japanese investors will found **Spring Airlines Japan Co**. The airline will fly **Boeing 737s** to three cities in Japan, starting in May 2014. The new company will be 33 percent

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owned by the Shanghai-based **Spring Air**. The Chinese carrier already operates flights from China to Japan's Ibaraki prefecture. It will compete with three budget carriers that were founded within the last year. **ANA Holdings** created **Vanilla Air**, out of the ashes of its failed joint venture with **AirAsia**. **ANA** also owns 39 percent of budget airline **Peach Aviation**. **Jetstar Japan** was also formed last year.

ANA-All Nippon Airways will buy a 49 percent stake in **Asian Wings Airways**, Myanmar. The Southeast Asian nation is opening its economy to overseas investments, now that the **U.S. Government** has removed its sanctions. The Japanese carrier will pay \$25 million for the shares. **Asian Wings** started flying in 2011 and operates an **Airbus A321** and three **Avions de Transport Regional ATR72s**. It operates routes to all major tourist destinations in Myanmar from its base in Yangon. The airline will add 10 **A320s** and one **ATR 72** to its fleet over the next five years, more than tripling its fleet to 15 aircraft. **ANA** is considering leasing some of its **A320s** to **Asian Wings** and may invest in new technology for its ticketing system. The Japanese carrier restarted flights to Myanmar in 2012, after the sanctions against the country were lifted. **Toshiaki Nonaka**, a director of strategic planning at **ANA**, told the press, "There's still a lot more room for growth in travel in Asia. We want to actively go and seize that growth. With this tie-up we're expanding our base for flights to other Asian countries." **All Nippon Airways** said it was looking for acquisitions and partnerships in countries including India, Thailand and Myanmar after it raised 174 billion yen (\$1.8 billion) in a share sale for acquisitions and aircraft purchases in 2012. **Asian Wings** is the first airline to be acquired. Japan's largest airline is discussing buying a stake in **Philippine Airlines** from **San Miguel Corp.**, which owns 49 percent stake of the flag carrier. **ANA** will also buy pilot training company **Pan Am Holdings** for \$139.5 million.

Jetstar Hong Kong, a joint venture equally owned by **Qantas**, **China Eastern Airlines**, and **Shun Tak Holdings**, a company founded by gambling tycoon **Stanly Ho**, applied for an operating license. The new low-cost-carrier was opposed by **Cathay Pacific Airways**, which said that approval of the application would violate Article 134 of Hong Kong's **Basic Law** because **Jetstar Hong Kong** does not have its principal place of business in the city. Hong Kong's flag carrier controls about half the city's traffic and it wants to defend its dominance. That portion of the **Basic Law** has not been litigated. The law was intended to prevent Chinese carriers from taking control of Hong Kong's air traffic rights after China annexed the former British colony in 1997. The law gives the local government the authority to issue airline licenses to companies incorporated in the city and which use it as its principal place of business. **Jetstar Hong Kong's** Chief Executive Officer, **Edward Lau**, stated that the company was not controlled by a foreign airline and that it was managed locally. **Cathay** replied, "The application would set a dangerous precedent by granting control of Hong Kong's hard-negotiated sovereign air traffic rights to a carrier that is nothing more than a franchise operation controlled by a foreign airline." The **Air Transport Licensing Authority** received **Cathay's** objections, but no other airlines have objected. The authority is reviewing laws and expects to complete the process in the next few months.

The Democratic Republic of Congo will start a new national airline in partnership with **Air France-KLM**. By January 2014, the new company will replace the defunct **Lignes Aeriennes Congolaises**. The Congo's current airlines were banned from operating to the European Union because of their poor safety record. **Air France-KLM** owns stakes in several African airlines including 27 percent of **Kenya Airways** and 20 percent of **Air Cote d'Ivoire**.

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Kingfisher Airlines' parent company, **United Breweries**, sued **International Aero Engines** for \$236 million in damages after charging that **IAE's** engines were "inherently defective, both in design and manufacture." The suit was filed in Bangalore, India, and announced in **Kingfisher's** annual report. **IAE** is part-owned by **Pratt & Whitney**, and stated, "**IAE** cannot comment on pending litigation." **Kingfisher** has been grounded since October 2012, due to lack of operating capital. Its flying licenses expired at the end of last year, and it has not been able to restart operations. The carrier said it grounded 14 V2500-powered A320 family aircraft in March 2011 due to technical problems relating to the engines. The airline lost most of its fleet when lessors repossessed their A319s, A320s and A321s. It currently has 11 A320 Family aircraft and three A330s in storage. The airline is talking with foreign investors about restarting operations.

Technical

Airbus' Sharklets were certified for all six A320 Family aircraft. The company has flight tested the A319, A320 and A321 variants with both the **CFM International** CFM56 and **IAE** V2500 engine types and received **EASA** certification of the Sharklet wingtip devices. **Airbus** flew several new-build test aircraft for approximately 600 flight hours. **Airbus** delivered its first Sharklet-equipped A320 with CFM56 engines to **AirAsia** in December 2012. Since then, **Airbus** handed over its initial Sharklet-equipped A319 (also with CFM56s) to **American Airlines** in July and the first A321 to **Finnair** in September. **Airbus** had delivered more than 125 Sharklet fitted aircraft to more than 35 customers by early September, 10 months after their debut. The 2.4-meter-tall Sharklets are an option on **Airbus'** new-build current engine option single-aisle jetliners and will come standard on A320neo (new engine option) Family aircraft. They can also be retrofitted on late-model A320 Family aircraft. The Sharklets cut fuel burn by up to 4 percent.

Boeing Projects the commercial aviation industry will need more than one million new pilots and technicians to support the growing number of new airplanes to be delivered over the next two decades. The company released the **2013 Pilot and Technician Outlook** at the launch of 787 flight training at **Boeing Flight Services** in Miami. The **Boeing** outlook forecast the world will require: 498,000 new commercial airline pilots and 556,000 new commercial airline maintenance technicians by 2032. The demand is driven by steadily increasing airplane deliveries, particularly single-aisle airplanes, and represents a global requirement for about 25,000 new pilots annually. Approximately 28,000 new technicians will be required annually. However, new airplane technologies which feature more advanced components are likely to lead to lower maintenance requirements and corresponding lower technician demand after they replace aging aircraft, which typically require more maintenance, are retired from service.

Cargo Pallet

Boeing Widebody Freighter Demand Wanes. The company expects to sell the fewest new air freighters since the 2009 recession. **Boeing** booked only 13 new orders through July, one-fifth its total sales in 2007. **Airbus** has not sold any freighters this year, and, like **Boeing**, it has seen the cancellation of some of its existing orders. The market for converted passenger aircraft has shrunk to nearly zero as well. According to **International Air Transport Association**, worldwide shipment volumes have not changed this year, so airfreight operators have quit buying new planes and are parking their older freighters. The global air-cargo fleet shrank by 6 percent in the last 12 months and is almost 14 percent

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less than in 2007. **Boeing** sees the slump as temporary, because it projects an increase of 5 percent annually through 2032 as the world's economy recovers and the cargo airlines retire older jets in favor of fuel-efficient new models. The company still forecasts sales of 850 new freighters over the next two decades while 1,450 passenger airplanes will be converted to cargo carriage. **Boeing** delivered 21 freighters through the end of August, and it is building down its backlog of 30 747-8Fs, 47 767-300Fs, and 50 777Fs. **Airbus** has only 44 A330-200Fs in backlog, but **Intrepid's** four A330Fs will probably be exchanged for A330-300s. The market for 747-400BCF (Boeing Converted Freighters) has dried up. So far this year, no airline has converted a 747-400 passenger plane into a freighter. This compares poorly with seven conversions last year and 17 jumbos converted in 2008. A number of unwanted factory built 747-400Fs have glutted the market, as airlines replace their 747-400Fs with 747-8Fs. This reduced the demand for conversions to zero in 2013. **Boeing's Randy Tinseth** said air-cargo companies favor buying new freighters over retrofitting old passenger jumbos for cargo, because the 747-8 freighter's range is greater and operating and fuel costs are much lower than older 747s' capabilities. **Boeing** has delivered one 767-300ER conversion this year for **Guggenheim Aviation Partners**. The lessor's second 767F will be completed by the end of 2013, and the final conversion was scheduled for 2014. **Airbus' EADS EFW** delivered six A300-600F conversions during the first half of the year, completing an 18-aircraft program for **DHL**. There are no more conversions scheduled in 2013, so **EADS EFW** will keep busy doing aircraft maintenance.

PEMCO World Air Services (PEMCO) will convert five 737-300s into freighters for China's postal service. This deal follows the recent redelivery of the tenth 11-position High-Yield 737-400F freighter to the Beijing-based **China Postal Airlines (CPA)**. By this time next year, **China Postal** will operate 15 PEMCO-modified 737-300F & 737-400F aircraft. The first two 737-300 aircraft entered the conversion line this month, with the remaining three being converted in 2014. The conversions will be performed at **STAECO's** Jinan Shandong facility. **STAECO** was **PEMCO's** partner on over 40 **Boeing** 737-300 and -400 freighter modification projects.

Narrowbody Conversions Are Still Popular since no manufacturer builds new freighter aircraft in that class. Air-cargo carriers in emerging markets prefer narrowbodies, because they are cheap and plentiful. **PEMCO World Air Services** and other American conversion centers are cranking out 737-400 freighters for operators in China, Africa and South America at a rate of 18 to 24 planes per year. The 20-year-old 737s are being retired by U.S. major airlines, such as **US Airways**, and are parked in the desert or are being picked up for conversion. There is no similar market for **Airbus** A320 Family aircraft, because the European manufacturer was unable to make a deal with **United Aircraft Corporation (UAC)** and **Irkut** to convert A320s into freighters in Russia. **FedEx** is pressing ahead with its 757P2F passenger to freighter program and it agreed to buy 27 757 passenger jets from **United Continental Holdings Inc.**, this year and will convert them into freighters. **Precision Aero** and **ST Aerospace** converted many of the 90 757s for **FedEx**, which used the 757P2Fs to replace the 25+-year-old three-engined **Boeing** 727-200Fs. The last of **FedEx's** 727s were retired in June after 35 years of service. Some operators are opting for MD-80P2F conversions but sales of those have been sluggish so far.

Military Market

Boeing Delivered Last C-17A to the Air Force. The U.S. Air Force's 223rd and last C-17 Globemaster III airlifter was delivered in September, ending a program that started in 1981. The first C-

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17A flew in September 1991 and the first airplane was delivered to the **Air Force** in July 1993. **Boeing** continues to produce C-17s for other customers around the world, and maintains and sustains the aircraft through the **C-17 Globemaster III Integrated Sustainment Program**. In addition to the 223 **U.S.A.F.** C-17s, 34 are operated by Australia, Canada, India, Qatar, the United Arab Emirates, the United Kingdom; also the 12-member Strategic Airlift Capability initiative of NATO and Partnership for Peace nations.

Shortly After the Last U.S.A.F. C-17 Delivery, Boeing Announced the Close of the C-17 Production Line. The 279th and last C-17 Globemaster III will roll off the line in 2015. As of September 2013, **Boeing** had 22 more C-17s to build. The manufacturer will continue after-delivery support of the worldwide C-17 fleet as part of the **C-17 Globemaster III Integrated Sustainment Program (GISP) Performance-Based Logistics** agreement. The **GISP** “virtual fleet” arrangement provides the highest airlift mission-capable rate at one of the lowest costs per flying hour, **Boeing** said. Management blamed the “tough budget environments” worldwide and the “sequestration situation” in the U.S. as having “created significant planning difficulties for our customers.” This uncertainty forced difficult decisions like this C-17 line closure. **Boeing** expects that a charge of less than \$100 million will be recorded this quarter. Nearly 3,000 employees currently support C-17 production in four states. Workforce reductions will begin in early 2014 and continue through the closure. The C-17 industrial team includes more than 650 suppliers in 44 states, which employ 20,000 people. **Boeing** has approximately 20,000 employees in California and remains committed to defense and commercial business in the state. The manufacturer sold the old **Douglas** commercial aircraft factory site at Long Beach to the **Sares-Regis Group**, which leased the million square foot building to **Mercedes-Benz**. The C-17 is assembled in a building near the **Long Beach Airport**, and **Boeing** has not announced plans for the facility. The closure of the C-17 program ends more than 90 years of aircraft production in the Los Angeles area.

KC-46A Tanker Design Validated. Following months of component and subsystem reviews, the **U.S. Air Force** and **Boeing** validated the final design elements of the KC-46A Tanker assuring that it meets **Air Force** requirements. **Boeing** can now start production and testing of the next-generation aerial refueling tanker. The KC-46A is based on the commercial 767-200ER, a proven airframe in service worldwide as an airliner, freighter and tanker. The company has delivered more than 1,050 767s. **Boeing** began assembling the wings for the first two tanker aircraft on June 26. If all options under the current contract are exercised, **Boeing** expects to deliver 179 tankers as part of the military's \$52 billion project to replace its current fleet of KC-135 refueling tankers. **Boeing** is to build four test aircraft and deliver 18 combat-ready tankers by 2017. The KC-46A can carry twice as many passengers as the KC-135 and it is equipped with **Boeing** 787 cockpit avionics.

The Israeli Defense Forces wants to buy surplus **U.S. Air Force Boeing** KC-135R tankers, not the KC-135E. The R model is powered by fuel-efficient CFM56 engines, while the KC-135Es are fitted with older **Pratt & Whitney** TF-33-PW-102 (JT3D). Washington proposed the sale of three KC-135Es worth around \$200 million. The **Air Force** retired its approximately 160 E-model aircraft in 2009 and stored them at **Davis-Monthan AFB**. It still operates approximately 360 KC-135Rs. **Israel** prefers the more capable R-model aircraft, which are included in the Pentagon's excess defense articles program, which allows Washington to give its allies military hardware for free, or at a greatly reduced price. The Israeli air force wants to buy up to a dozen KC-135Rs which would be delivered after undergoing depot maintenance in the U.S. Two of the aircraft would be used as VIP transports. The Israeli air force

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currently flies a fleet of Boeing 707 refuelling tankers, which were modified and upgraded by **Israel Aerospace Industries**. They were recently fitted with new glass cockpits, modern communications equipment, a global air traffic management system and the same type of refuelling boom used by the **U.S. Air Force's** KC-135s. Unfortunately, there are very few decent 707-320B/Cs available to convert to KC-707s. One wonders why the **Israeli Defense Forces** does not buy the domestic **Israel Aerospace Industries** KC-767 Multi Mission Tanker Transport. There are a fair number of modern 767-200s and -300s being retired by the world's airlines. These planes were built in the 1990s, while the newest KC-135 was completed in 1965.

The Indian Air Force's (IAF) third Boeing C-17 Globemaster III airlifter departed for India on August 20 from the company's Long Beach facility. It joined the first and second Indian C-17 airlifters, which arrived in June and July, respectively. **Boeing** is on track to deliver two more C-17s to the **IAF** this year and five in 2014.

AIRCRAFT DELIVERIES & SALES

Airbus

Airbus A319. Avolon leased its fourth A319-112/Ws (SN 5745) to **American Airlines** in August. **American** leased one -112/W (SN 5753) from **OHA Centre Street Aircraft Holdco**, and (SN 5761) from **Texas Aviation Group**. **China Eastern Airlines** took delivery of one -133 (SN 5623). **Airbus** delivered only 21 A319s from January through August.

Airbus A320. **Airbus** delivered 25 A320s in August. In East Asia, **China Eastern Airlines** bought **Tianjin FAL**-built -232 (SN 5628). It leased one -214/W (SN 5735) from **SMBC Aviation Capital**, and leased another -214 (SN 5726) from **ICBC Financial Leasing**. **China Southern Airlines** acquired one **Tianjin FAL**-built -232 (SN 5611) and leased one -214 (SN 5730) from **Aircraft Purchase Fleet**. **Shenzhen Airlines** received **Tianjin-FAL**-built -214 (SN 5639), and **Air China** also accepted one **Tianjin FAL**-built -214 (SN 5600). **Juneyao Airlines** leased -214 (SN 5737) from **GECAS**, which also leased one -214 (SN 5724) to **Peach Aviation**, Japan. **Qantas** leased one -232/W (SN 5695) to **Jetstar Japan** and -232/W (SN 5708) to **Jetstar Asia**. **Tigerair** took delivery of -232 (SN 5721). **AirAsia** took delivery of one -216/W (SN 5706) and leased it to **Indonesia AirAsia**. It was the 8,000th airplane that **Airbus** had delivered. **Airbus** delivered two -232/Ws (SN 5712 & 5727) to **IndiGo**, India, and two -214s (SN 5739 & 5757) to **easyJet**. **Lufthansa** accepted its 61st -214/W (SN 5741), and **Aerventure** leased one -214/W (SN 5719) to **Air France**. **Iberia Express** received -216 (5729). In the Middle East, **Air Arabia** took delivery of -214/W (SN 5718) and **Etihad Airways** accepted -232/W (SN 5714). In the Americas, **LATAM Airlines Group**, the holding company for **LAN** and **TAM** airlines, took delivery of one -214/W (SN 5764) for **LAN** and one -214/W (SN 5749) for **TAM**. **Airbus** delivered one -232/W (SN 5723) to **JetBlue**.

Airbus A321. **Airbus** delivered nine A321s in August, including the first two -231s (SN 5715 & 5747) to **Philippine Airlines (PAL)**. The aircraft are the first of 44 A321s and 20 A330s ordered by the airline in 2012. **Vietnam Airways** received two more -231s (SN 5699 & 5709). **Air China** accepted -231 (SN 5743), and **China Southern Airlines** received -231 (SN 5736). **UTair** took delivery of its

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second new -211 (SN 5733) and **Aeroflot** acquired -211 (SN 5720). **US Airways** received its 86th -231 (SN 5728).

Airbus A330. **Airbus** delivered four -200s, one -200F and two -300s in August. **China Eastern Airlines** acquired its 18th of 21 -243s (SN 1440), and **Air China** received -243E (SN 1444). One -243 (SN 1441) was delivered to **US Airways**, and one -243MRTT (SN 1439) to the **Airbus Military** for the **Royal Air Force**. **Turkish Airlines** accepted its fifth and final -243F (SN 1442). **Hainan Airways** received -343X (SN 1438), and **Cathay Pacific** accepted its 40th -343E (SN 1443).

Finnair took delivery of its first A321-231 (SN 5758) equipped with Sharklet wing tip devices in September. The five A321s with Sharklets will replace **Finnair's** four **Boeing** 757s that have been used mainly for leisure and charter flights. The new aircraft will also complete **Finnair's** shift to an all-**Airbus** fleet, bringing further cost efficiencies in maintenance and pilot training to flight operations. The flag carrier entered into an agreement with a Japanese aircraft leasing company, **NBB**, to sell and leaseback two of the new A321s.

International Lease Finance Corporation (ILFC) registered A330-223 (SN 290) on the **Aruban Civil Aircraft Registry** with P4-TWM. The aircraft was registered under the "Storage-Between Leases Program" while in transition from **Malaysia Airline System** to **Aerolineas Argentinas**. The aircraft is currently located at **MAS MRO** in **Subang Airport**, Malaysia. A second A330-223 is expected to register with Aruba under the same program.

Airbus A380. **Korean Air** took delivery of its seventh of 10 -861 (SN 126) in August. **Emirates** received its 36th -841s (SN 132). It was sold and leased back with **DNA Alpha Limited**, a wholly owned subsidiary of **Doric Nimrod Air Three Limited (DNA3)**. The A380 was leased for 12 years. The A380 is the first of four aircraft financed by **DNA3**. The remaining three superjumbos are scheduled for delivery by the end of 2013. **Doric's** aviation portfolio now comprises 36 aircraft valued at \$6.1 billion.

Boeing

Boeing 737 NG. **Boeing** delivered 38 737s in August, including 12 -800s and one -700 to Chinese airlines. Lessors leased five -800s to airlines in China. **China Southern Airlines** accepted three -81B/Ws (SN 38951, 38959 & 38960), and **Shandong Airlines** received two -85N/W (SN 39113 & 39127). **Air China** received -89L/W (SN 40044), and sold it to **Shandong Airlines**. **Shanghai Airlines** acquired two -86D/W (SN 37908 & 39304), **Shenzhen Airlines** took delivery of three -87L/Ws (SN 39134, 39135 & 39156), and **Hainan Airlines** accepted -84P/W (SN 39202). **China Eastern Airlines** received -79P/W (SN 39727), and leased -89P/W (SN 41305) from **Air Lease Corporation**. **Avolon** leased the fourth -89P/W (SN 40953) to **China Eastern**; it is being operated by **China United Airlines**. **Xiamen Airlines** leased -85C/W (SN 39930) from **SMBC Aviation Capital**, and -85C/W (SN 41790) from **ILFC**. **GECAS** leased one -86N/W (SN 38042) to **Okay Airways** and one -86N/W (SN 41261) to **Spicejet**, India. **BOC Aviation** leased -8AL/W (SN 39061) to **Jet Airways**. In the Americas, **American Airlines** received three -823/Ws (SN 31176, 33231 & 33489), and sold the second to **SMBC Aviation Capital**, and the third to **Aercap** for lease back. The **SMBC** -800 was the first of an eight-aircraft sale and leaseback contract. **United Airlines** bought one more -924ER/W (SN 42740). **GOL Airlines** accepted two -8EH/Ws (SN 39622 & 39623) for a total of 82. **COPA Airlines** took delivery of -8V3/W (SN 40789), and leased -8V3/W (SN 39884) from **Aviation Capital Group**. **Aeromexico** purchased its

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12th -852/W (SN 36708); it has four more on order. Two European airlines received -800s in August. **Norwegian Air Shuttle** obtained its 68th -8JP/W (SN 39023), and **Air Berlin** received its 73rd -86J/W (SN 37782). In the Pacific Rim, **Virgin Australia Airlines** bought two -8FE/Ws (SN 40698 & 40699), and sold the latter aircraft to **SMBC** for lease-back. **Lion Air** received its 19th and 20th -8GP/Ws (SN 38734 & 38735). **Avolon** bought one of the 737s from **Lion Air**. It was the third of a six -800s that **Avolon** purchased and leased back to the airline. **Garuda Indonesia Airways** took delivery of -8U3/W (SN 38072), and **Malaysia Airlines** acquired its 22nd -8H6/W (SN 40149). It has 23 more on order. **All Nippon Airways** received its 23rd -881/W (SN 33904).

AWAS leased a fourth new 737-81D/W to **Solaseed Air** in September. **AWAS** was the first lessor to work with **Solaseed** and helped to move the airline into new generation 737-800s. **AWAS** is one of the largest and most established lessors in Japan, having supported Japanese airlines growth for over 15 years. The lessor leased one 737-500 from its portfolio to well-established charter and scheduled service airline **Air Méditerranée**. The airline was founded in 1997 and it serves the largest tour operators and travel agencies across France and Europe with regional, as well as North African leisure destinations.

Boeing 747. **Boeing** delivered two 747s in August. **Cathay Pacific Airways** accepted its 10th -867F (SN 39240) and **Lufthansa German Airlines** received its ninth -830I (SN 37835). **Cathay** has three more -8Fs on order and **Lufthansa** has 10 -8Is on backlog.

Boeing 767. No 767s were delivered in August. **FedEx Express** celebrated the delivery of the express shipping company's first of 46 767-3S2F freighters (SN 42706) in September. The 767s will be used to modernize **FedEx's** fleet with more efficient freighters. **Boeing** claimed the 767 freighter was an ideal upgrade for the fleet serving the **FedEx Express** domestic network, "providing improved fuel, maintenance and cost savings over the MD-10 freighters it will replace. **FedEx Express** gains additional efficiency through the ability to share parts, tooling and flight simulators between the 767 and the more than 70 757 Freighters already in its fleet."

Boeing 777. **Boeing** delivered six 777-300ERs in August, including the 12th -333ER (SN 42219) to **Air Canada**. **BOC Aviation** leased its seventh -3ALER (SN 41526) to **Thai International Airways**. **Cathay Pacific Airways** accepted its 29th -367ER (SN 42142), and **Emirates** acquired its 59th of 120 -31HERs (SN 41370). **Saudi Arabian Airlines** purchased its eighth -368ER (SN 41055). **TAM Linhas Aereas** received its 10th of 12 -32WERs (SN 40588). It was sold to **Avolon** and leased back.

Boeing 787. **Boeing** delivered 10 787-8s in August. **International Lease Finance Corporation** leased the first -8 (SN 35306) to **Aeromexico**. The airplane is the first of nine 787-8s that **Aeromexico** will operate, including five on lease from **ILFC**. **ILFC** took delivery of its second -8 (SN 35305) last month, and leased it to **Norwegian Long Haul (Norwegian Air Shuttle)**. **All Nippon Airways** took delivery of two -8s (SN 34512 & 42246) for a total of 22 in its fleet. **Hainan Airlines** received its second of nine -8s (SN 34938), and **China Southern Airlines** took delivery of its third of 10 -8s (SN 34926). **Japan Airlines** accepted its 11th -8 (SN 34833). It has 14 more on order. **Boeing** delivered one -8 (SN 38325) to **Qatar Airways**, and the eighth -8 (SN 36285) to **Air India**. **TUI Travel PLC** leased its fourth -8 (SN 36424) to **Thomson Airways**.

Regional Jet

Bombardier delivered one CRJ1000 NextGen (SN 19036) to **Garuda Indonesia** in August. **Lufthansa Cityline** retired two CRJ701ERs (SN 10012 & 10015).

Embraer. **Republic Airlines** took delivery of three EMBRAER 170-200 LRs (E175) (SN 17000367, 17000368 & 17000369) in August. The airplanes will be operated for **American Eagle**. **Azerbaijan Airlines (AZAL)**, the national airline of Azerbaijan, received the second of four EMBRAER 190-100 IGWs (E190) (SN 19000627) in July. The other two aircraft will be delivered by the end of the year. **GECAS** will lease E190 (SN 19000608) to **Air Costa** in September. **Conviasa** will acquire E190 (SN 19000485) soon.

Sukhoi delivered the second **Sukhoi Superjet 100** (SN 95027) to **Sky Aviation**, Indonesia, on August 21. **Sky's** first SSJ100 was delivered late 2012 and it has flown more than 500 hours on domestic routes. **Sky Aviation** was established in 2010, and is based in **Halim Perdanakusuma International Airport**, Jakarta, Indonesia. The airline operates scheduled and charter flights in Indonesia. **Interjet**, Mexico, performed the first revenue flights on September 18, with its two Superjet 100s, (SN 95023 & 95024). The planes flew eight commercial flights each from Mexico City to Campeche, Minatitlan, Zatecas and Mazatlan.

American Airlines debuted its new EMBREAR 175 at Chicago **O'Hare Airport** and placed it into service on August 1. The 76-seat aircraft increases the number of large regional jets in its fleet and provides it with an airplane sized between its 65-seat **Bombardier** CRJ700s and 128-seat A319s. The airline contracted **Republic Airlines** to fly 47 newly-ordered E175s under a 12-year capacity purchase agreement. The regional carrier ordered the airplanes in January and was able to place it into service only seven months later. This was much faster than the mainline carrier's **American Eagle** subsidiary could have done (because the **Federal Aviation Administration (FAA)** required certification and training). All the E175s will be based at **O'Hare** for the foreseeable future where they will replace CRJ700s and ERJ140/145s. **American** will take delivery of two or three E175s per month and have will have 15 in its fleet by the end of the year. The last of their regional jets will enter service in the first quarter of 2015.

Turboprop Aircraft

ATR. **Azul Linhas Aereas** received -600 (SN 1102) in July. **Malindo Air**, Malaysia, took delivery of its second ATR 72-600 (SN 1095) in August. **LIAT** leased -600 (SN 1103) from **Air Lease Corp.** The plane is **LIAT's** second ATR 72-600. **MAS Wings** also received one -600 (SN 1099). **Alenia** converted ATR 72-500 (SN 768) into an ATR 72-600 MUA-Maritime Utility Aircraft for the **Turkish Navy**. It was delivered in August. **Aer Arran** will accept -600 (SN 1105) in September.

Bombardier. **WestJet Encore** took delivery of their third Dash 8Q-402 NextGen (SN 4447) in August. **Nordic Aviation Capital** leased 8Q-402 NextGen (SN 4448) to **Air Baltic**. **Airstream International Group** arranged the sale of five DHC-8-Q300 aircraft from **Caribbean Airlines** to a U.S. based investor.

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Viking delivered one DHC-6-400 (SN 876) to the **Ground Zero Solutions** for modification and re-delivery to a customer in the UAE. Also in August, the **Peruvian Air Force** took delivery of -400 (SN 879). **MAS Wings**, Malaysia, accepted -400 (SN 880).

Antiques and Other Junque

Wizz Air Hungary's A320-232 (SN 5021) was damaged upon landing at **Rome FCO Airport** on June 8. It will probably be written off.

Accidents and Safety

From Aviation Safety Foundation

Thai Airways International's Airbus A330-321 (HS-TEF, SN 066) suffered a runway excursion accident upon landing at **Bangkok-Suvarnabhumi International Airport**, Thailand, on September 8. At least twelve of the 287 passengers and 14 crew members were injured. The A330 went off the right side of the runway, causing the nose gear to fail. A fire erupted from the right hand engine, but it was extinguished by the airport fire services.

Europe Jet's Canadair CRJ200ER (TC-EJA, 7763) was damaged at Moscow's **Vnukovo Airport** on September 7, when it landed with the main landing gear retracted. The four crew members and seven passengers were not injured, but the airplane was substantially damaged. The main gear failed to deploy after several approaches and attempts to get the gear down.

Great Lakes Aviation's Beechcraft 1900D (N169G, SN UE-169) landed at **Telluride Airport**, Colorado, with its left hand main gear down, but not locked, on September 1. The left hand undercarriage collapsed upon touchdown and the airplane came to rest with its left wing on the runway. Neither the two crew nor the 10 passengers were injured.

Transom Airways' Antonov An-26B-100 (EK-26818, SN 57314101) landed half way down the unpaved runway at **Guri'el Airstrip**, Somalia, and ran into a large rock, on August 25. The nose gear was severed and penetrated the fuselage, injuring one of the five crew members. The 45 passengers were not injured, while the airplane was substantially damaged.

Aerocon's Swearingen SA227-DC Metro 23 (CP-2655, SN DC-819B) sustained substantial damage in a runway excursion at **Sucre Airport**, Bolivia, on August 20. The eight passengers and two pilots escaped unharmed. The nose wheel steering failed following the landing roll and the Metro swerved off the runway and ran down a rocky embankment.

Transportes Aereos Corporativos—CorpFlite's Dornier 228-202K (CC-CNW, SN 8063) crashed near **Viña del Mar Airport**, Chile, on September 9, killing both pilots. The airplane struck power lines and trees and crashed in a field during an approach in poor visibility conditions.

AVMARK CAPABILITIES

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

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

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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.

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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.

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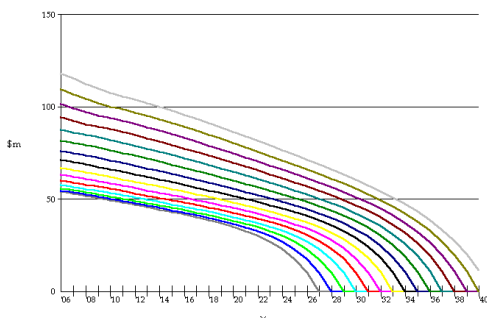
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CAVAS Graph



Profit & Loss Report						2007	2008	2009	2010	2011
Aircraft Type		Airbus A340-300								
Period	1	2	3	4	5	Ready				
REVENUES (US\$'s)										
Passengers	49,328,754	49,270,739	49,212,559	49,154,213	49,095,701	49				
Freight & Mail	8,879,176	8,868,733	8,858,261	8,847,758	8,837,226	8				
Other Revenue	986,575	985,415	984,251	983,084	981,914					
TOTAL OPERATING REVENUE	59,194,505	59,124,887	59,055,070	58,985,055	58,914,841	58				
VARIABLE EXPENSES										
Fuel	6,918,975	6,917,340	6,915,470	6,913,177	6,910,456	6				
Landing Fees	3,021,823									
Enroute Charges	392,440									
Pax Commissions	7,399,313									
Freight Commissions	1,331,876									
Food & Supplies	3,993,194									
Passenger Liability Insurance	379,590									
TOTAL VARIABLE COST	23,443,212									
SEMI-VARIABLE EXPENSES										
Crew Salaries & Expenses	5,177,760									
Maintenance & Engineering	587,650									

Profit & Loss Report						
Aircraft Type	Airbus A340-300					
Period	1	2	3	4	5	
FIXED EXPENSES						
Station Overhead	346,597	345,923	345,249	344,575	343,901	
Maintenance Burden	176,295	351,824	526,586	700,581	873,810	1.
Other Overhead	0	0	0	0	0	
TOTAL FIXED COST	522,892	697,747	871,835	1,045,156	1,217,711	1.
TOTAL OPERATING COST						
General and Admin. Allocation	1,573,225	1,609,287	1,645,180	1,680,303	1,716,455	1.
TOTAL COST	33,037,722	33,795,036	34,548,781	35,298,955	36,045,559	36.
OPERATING PROFIT OR LOSS						
	26,156,782	25,329,851	24,506,290	23,686,100	22,869,282	22.
D-CHECK ADJUSTMENT						
Cumulative Hours	4,830	9,650	14,459	19,257	24,045	
Cumulative Dollars	315,000	0	0	0	0	
ADJUSTED CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22.
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22.

Select Aircraft Type

Available Aircraft

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

Picture

Selected

Airbus A340-300

Description

Widebody 4 Engine Passenger

Manufactured

1992 To 2006

Values

\$54.00m \$118.00m

Estimated Life

35 years File No.

013

Search Term

Add Modify Delete OK

Aircraft : Airbus A340-300 - Widebody 4 Engine Passenger

CAVAS Figures

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
2006	54.00	54.61	55.83	57.66	60.10	63.14	66.80	71.07	75.94	81.43	87.52	94.23	101.54	109.47	118.00
2007	52.85	53.49	54.70	56.56	58.99	62.01	65.62	69.95	74.86	80.37	85.52	92.18	99.12	106.73	115.25
2008	51.68	52.36	53.61	55.43	57.85	60.84	64.42	68.69	73.65	79.18	84.76	90.48	96.97	104.20	112.39
2009	50.49	51.19	52.46	54.29	56.70	59.67	63.24	67.50	72.44	77.95	83.52	89.34	95.81	103.44	111.80
2010	49.28	49.99	51.27	53.10	55.50	58.46	62.01	66.25	71.17	76.66	82.32	88.24	94.91	102.94	111.60
2011	48.05	48.77	50.05	51.88	54.27	57.22	60.76	64.98	69.87	75.43	81.16	87.16	93.94	102.47	111.40
2012	46.80	47.52	48.80	50.62	53.00	55.94	59.47	63.68	68.55	74.10	79.82	85.92	92.91	101.84	111.10
2013	45.53	46.25	47.52	49.34	51.71	54.64	58.16	62.36	67.21	72.74	78.55	84.85	92.14	101.47	110.90
2014	44.25	44.96	46.23	48.04	50.40	53.32	56.83	60.93	65.77	71.28	77.07	83.56	91.24	100.97	110.70
2015	42.96	43.67	44.93	46.74	49.09	51.99	55.49	59.58	64.41	69.89	76.07	82.95	91.02	101.07	110.90
2016	41.66	42.37	43.62	45.42	47.76	50.65	54.14	58.22	63.04	68.51	74.78	81.95	90.41	100.97	110.90
2017	40.35	41.05	42.30	44.09	46.42	49.30	52.78	56.85	61.66	67.12	73.38	80.84	89.70	100.57	110.90
2018	39.03	39.73	40.97	42.76	45.08	47.95	51.42	55.48	60.28	65.73	72.07	79.72	88.88	100.05	110.90
2019	37.70	38.40	39.63	41.41	43.72	46.58	50.04	54.09	58.72	64.15	70.47	78.31	87.78	99.25	110.90
2020	36.37	37.06	38.28	40.05	42.35	45.20	48.65	52.69	57.31	62.72	69.03	77.06	86.83	98.60	110.90
2021	35.03	35.72	36.93	38.69	40.98	43.82	47.26	51.29	55.90	61.30	67.60	75.72	85.78	97.85	110.90
2022	33.68	34.37	35.57	37.32	39.60	42.43	45.86	49.88	54.48	59.76	66.05	74.36	84.72	97.00	110.90
2023	32.32	33.01	34.20	35.94	38.21	41.03	44.45	48.46	53.05	58.33	64.61	73.01	83.56	96.00	110.90
2024	30.95	31.64	32.82	34.55	36.81	39.62	43.03	47.03	51.61	56.88	63.15	71.64	82.39	95.00	110.90
2025	29.57	30.25	31.42	33.14	35.39	38.19	41.59	45.58	50.15	55.41	61.67	70.25	81.20	94.00	110.90
2026	28.18	28.86	30.02	31.73	33.97	36.76	40.15	44.13	48.70	53.95	60.20	68.87	80.00	93.00	110.90
2027	26.78	27.45	28.60	30.30	32.53	35.31	38.69	42.66	47.22	52.46	58.70	67.45	78.80	92.00	110.90
2028	25.37	26.03	27.17	28.86	31.08	33.85	37.22	41.18	45.73	50.96	57.18	66.02	77.50	91.00	110.90
2029	23.95	24.60	25.73	27.41	29.62	32.38	35.74	39.69	44.23	49.45	55.66	64.59	76.20	90.00	110.90
2030	22.52	23.16	24.28	25.95	28.15	30.90	34.25	38.19	42.72	47.93	54.13	63.15	74.90	89.00	110.90
2031	21.08	21.71	22.81	24.47	26.66	29.40	32.74	36.67	41.19	46.39	52.58	61.69	73.60	87.80	110.90
2032	19.63	20.25	21.34	22.99	25.17	27.90	31.23	35.15	39.66	44.85	51.03	60.23	72.30	86.60	110.90
2033	18.17	18.78	19.86	21.50	23.67	26.39	29.71	33.62	38.12	43.30	49.47	58.66	70.80	85.00	110.90
2034	16.70	17.30	18.37	19.99	22.15	24.86	28.17	32.07	36.56	41.74	47.91	57.09	69.30	83.60	110.90
2035	15.22	15.81	16.87	18.48	20.62	23.32	26.62	30.52	35.00	40.17	46.33	55.50	67.80	82.40	110.90
2036	13.73	14.31	15.36	16.95	19.08	21.77	25.06	28.35	32.23	36.71	42.86	52.02	64.40	79.20	110.90
2037	12.23	12.80	13.83	15.41	17.52	20.15	23.43	26.71	30.38	34.85	40.90	50.05	62.60	77.60	110.90
2038	10.72	11.28	12.29	13.85	15.94	18.12	21.39	24.66	28.12	32.58	37.62	46.75	59.40	74.60	110.90
2039	9.20	9.75	10.74	12.28	14.35	16.52	19.78	23.03	26.28	30.33	35.36	44.09	56.90	71.80	110.90
2040	7.67	8.21	9.18	10.70	12.80	15.00	18.24	21.48	24.71	28.74	33.76	42.00	54.60	69.20	110.90
2041	6.13	6.65	7.60	9.10	11.18	13.35	16.58	19.80	23.01	26.99	31.91	40.00	52.60	67.20	110.90
2042	4.58	5.08	6.01	7.50	9.56	11.72	14.92	18.12	21.32	25.29	30.20	39.20	50.60	65.20	110.90
2043	3.02	3.50	4.41	5.88	7.92	10.06	13.24	16.43	19.61	23.56	28.56	37.70	49.60	63.20	110.90
2044	1.45	1.91	2.80	4.25	6.26	8.39	11.60	14.78	17.94	21.87	26.86	36.00	48.00	61.20	110.90
2045	0.87	1.31	2.18	3.61	5.60	7.71	10.89	14.04	17.17	21.08	26.06	35.30	47.70	60.20	110.90
2046	0.29	0.71	1.56	2.96	4.93	6.99	10.14	13.26	16.42	20.41	25.38	34.60	46.90	59.20	110.90
2047	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	110.90

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