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Newsletter

Market Comment

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American Airlines and U.S. Airways Are to Merge and become the world's largest airline, with a value of roughly \$11 billion. Both board of directors unanimously approved the deal, but it is subject to a vote by **US Airways** shareholders, as well as approval by U.S. anti-trust regulators and the **Bankruptcy Court**. The unsecured creditors committee and the employee unions have endorsed the merger. The airlines hope to close the deal during the third quarter. **American** entered Chapter 11 bankruptcy in November 2011, and was then actively pursued by **US Airways**. The combined airline will retain the **American Airlines** name, and will offer more than 6,700 daily flights to 336 destinations in 56 countries. **American-US Airways** will carry more than 170 million passengers and should generate revenues of more than \$38.69 billion per year. The new airline will also surpass the current world leader **United Continental** in terms of passenger miles; that airline earned \$37.15 billion last year. **American** will have an estimated stock value of \$11 billion, which is less than the \$12.4 billion value of **Delta**, and more than **United's** \$8.7 billion. The airline will also stay in the **oneworld** alliance. **US Airways** will drop out of the **Star Alliance**. The **American-US Airways** combined fleets will have 948 mainline aircraft (ranging from the 99-seat regional jet to 310-seat 777-300ER), and 568 under-99 seat regional aircraft. It will have hubs at Charlotte, Chicago **O'Hare**, Dallas-Fort Worth, Los Angeles, Miami, New York **John F Kennedy**, Philadelphia, Phoenix and Washington **National**. **U.S. Airways** CEO **Doug Parker** will be the new airline's chief executive officer and **American's** current CEO, **Thomas Horton**, will become chairman of the board of directors. The company will have 12 members on its board, four from **US Airways** including CEO **Doug Parker**, three from **American** including Chairman **Tom Horton** and five members who will be nominated by the **American** creditors. Mr. **Horton** will step down from the board in 2014, shrinking it to 11 members after new **American's** first annual meeting. After the all-stock merger, **US Airways** shareholders will own 28 percent of the new company. **American** will also pay unsecured creditors debts and accrued interest with stock, and the existing stockholders will also get a small equity stake. They will receive a combined 72 percent of new **American**. The merger will cost about \$1.2 billion over the next three years, but it should bring in about \$1 billion in additional revenue and cost benefits per year. The new **American** will also be very competitive on both the U.S. East and West Coasts and on North Atlantic routes, because of its revenue-sharing joint venture with **British Airways** and **Iberia**. **Wall Street** investors supported the merger because they saw it

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as the best way to reverse the sagging fortunes of the two airlines. Separately they were too small to compete against the new behemoths, **Delta** and **United**, and were too large to match the deft smaller carriers like **JetBlue** and **Alaska**. The merger was seen as a way for **American** to overcome its decade-long labor unrest. The pilots' union rejected a new concessionary contract last August, in order to encourage the merger and to undermine the current management. The pilots approved the contract after months of palace intrigue with **American's** creditors and **US Airway's** management. **US Airway's** pilots joined talks with **American's** creditors, management and pilots to hammer out a new contract for both pilots' unions. That contract provided a clear path to integrating the unions, which could make or break the airline. The **US Airways** employees will be brought up to **American's** pay scale, insuring their support of the merger. Many merged airlines have suffered because union seniority list integration and other labor issues were considered as an afterthought to be addressed after the deal was struck.

Anti-trust experts think that **American** and **US Airways** will have to divest assets in some cities to preserve competition. Fortunately, there is very little route overlap between the two airlines. **US Airways** has hubs in Charlotte, Philadelphia, and Phoenix and a sub-hub at Washington National. The four East Coast hubs are between **American's** hubs in New York and Miami, so it is possible that one or two cities will lose their hub status. It is also possible that fares will rise due to the merger, but it is not likely. Fares are affected more by fuel costs, capacity and inflation than by competition. Most major cities and many secondary markets are served by four or more airlines. Currently, the top four carriers -- **American**, **Delta**, **Southwest** and **United** -- control about 70 percent of the U.S. domestic market. New **American** will have to rationalize its combined fleet. **US Airways** operates 242 A320 Family aircraft, 16 A330s, 32 737-400s, 24 757-200s, 10 767-200s and 18 E190s, for a total of 342 airplanes. The airline has 46 A320 Family aircraft, eight A330s and 24 A350s on order, some of which will replace the ageing **Boeing** airliners. **American** operates 201 737-800s, 102 757-200s, 70 767s, 51 777s and 180 MD-80s. It has outstanding orders for 130 A321s, 208 737-800s, 17 777s and 42 787s. Many of these planes will replace the 757s, 767s and MD-80s. Both airlines are well positioned to replace their oldest aircraft. The new **American** will be the largest operator of A321s and 757s and it will have 165 A321s on order, more than enough to replace the 126 757s in the combined fleet. The 24 A350s and 42

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787s will nearly replace the 80 767s on a tail-for-tail basis. **American** also has options for 130 A321neo, 100 737 MAX, and 58 787 aircraft for expansion. Integrating the **Airbus** and **Boeing** fleets will be a daunting task. The replacement of older, less-efficient airplanes with new equipment, will noticeably lower **American's** operating costs. The airlines's regional subsidiaries, **American Eagle**, **Piedmont** and **PSA** are expected to continue to operate separately and will offer regional services for their new parent. The regional services will be rationalized and the smaller and older aircraft will be retired. There may be some shifting of aircraft between the fleets. The regionals will drop unprofitable routes on what is now a fragmented regional route system. It is possible that one of the three airlines will be shut down or merged out of existence. **AVMARK** thinks the merger will be generally good for the U.S. airline industry. It will rationalize capacity and keep load factors high. The merger will reduce self-cannibalizing competition and allow the top tier of airlines to earn a reasonable profit. It will continue the trend of buying new fuel-efficient aircraft, which benefits the air-framers. Perhaps employee wages will rise again and passengers will be greeted with a smile. Investors may again earn a return on their airline stocks. The downside is that consumers may have to pay the real price of travel, and they will not be subsidized by **Uncle Sam** and the stock and bond holders.

Airbus Orders

Airbus Began the New Year with sales of 130 A321neos (new engine option) to **American Airlines** and 10 A350-900 XWB (Xtra Wide Body) aircraft to **CIT Group**. **American Airlines'** purchase of 130 A321neos was the biggest order for the type to date, and added another operator to the growing list of neo customers. **CIT** placed a repeat order for the A350 XWB. Several years ago, **CIT** ordered five A350-800s and two A330-900s but it dropped two -800s in mid-2011 and converted the other three into -900s. The recent purchase brings the U.S. lessor's A350 backlog to 15 -900s. As of January, **CIT** had ordered 182 A320 Family, 51 A330 Family and 15 A350 XWB Family aircraft and has taken delivery of 118 A320 Family and 37 A330s. The A350 XWB is scheduled for entry-into-service in 2014, and the program has won 592 firm orders from 34 customers worldwide. The A350s

Airbus Orders, Deliveries and Backlog January 2013

JAN ORD	JAN DEL	JAN CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-2-	79	78	1
			A319		
-0-	2	-0-	1,526	1,359	167
			A320		
-0-	24	-17	6,071	3,216	2,855
			A321		
130	4	-0-	1,466	779	687
			A330		
-0-	5	-0-	1,244	943	301
			A350		
10	-0-	-0-	592	-0-	592
			A380		
-0-	-0-	-0-	262	97	165
This Month			This Year		BL
140	35	-19	140	35	4,768

Airbus sold 12,433 aircraft and delivered 7,665 as of January 31, 2013. Nineteen orders have been cancelled. Total orders, deliveries and backlog include cancellations and order changes.

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will be powered by two **Rolls-Royce** Trent XWB powerplants. **Aircraft Purchase Fleet** reduced its A320 backlog by 17 in January. At the end of 2012, the lessor had 33 A320s on order, but that was reduced to 16 by January 31, 2013. Two VIP A318s were cancelled in January as well.

Airbus reinstated **American Airlines'** order for 130 A321neo aircraft to its backlog. **American** signed its original order with great fanfare in July 2011, but in December, 2011, **Airbus** quietly demoted the deal to the level of a commitment, after **American** filed for Chapter 11 in November of that year. The first agreement was for 260 A320 family aircraft, and half were to be for the A321neo. **American** signed its firm order on January 23, 2013. The first of the A321neos will be delivered in early 2017. By February 1, **Airbus** sold 26 A319neos, 1,566 A320neos and 286 A321neos, for a total of 1,878 new engine option aircraft.

Airbus Delivered 35 Jetliners in January, nearly half the record number of deliveries set in December 2012. The manufacturer produced two A319s, 24 A320s, four A321s and five A330s, but did not complete any A380s. **Airbus** ended the month with a new record backlog of 4,768 aircraft. The backlog was valued at more than \$640 billion.

Turkish Airlines (THY) signed a firm order for two additional A330-300 passenger aircraft and took options for three more in February. The new contract raised the airline's firm A330 Family orders to 38. The new aircraft were valued at \$480 million at **Airbus'** current list prices and will be operated on medium and long-haul routes from the airline's hub in Istanbul. **THY** bought its first Airbus in 1984, and now operates 104 Airbuses.

Air Lease Corporation (ALC), the Los Angeles-based aircraft leasing company, has signed a contract for 20 A350-900s and five A350-1000s. The company also optioned five additional A350-1000s. The 25 A350 XWBs are valued at \$7.4 billion (\$296 million each) at current list prices. With this new order, **ALC** became the 35th A350 XWB customer and the order took the A350 XWB backlog to 617. Also in February, **ALC** purchased 14 A321neo aircraft. The lessor ordered 36 A320neo and reserved 14 A320neo Family aircraft options at the 2012 **Farnborough International Airshow**. The latest contract confirmed those options and brought **ALC's** cumulative A320neo Family orders to 50. The lessor can choose to take delivery of up to 34 A321neo airplanes. The latest 14 A321neos are worth nearly \$1.6

Airbus President and CEO **Fabrice Brégier** said the company would continue to build on its achievements of 2012. **Airbus** surpassed its sales goals and delivered a record number of new aircraft. This year, the manufacturer will start A350 XWB flight testing, ramp-up in A330 production, and deliver the first four A400M military airlifters. Mr. **Brégier** told the press that the A350 XWB's maiden flight was targeted for mid-2013. **Airbus** successfully performed a full electrical power-up of the Number 1 flight test aircraft in December while it was on the Toulouse final assembly line. The A350-900 will be joined by another A350-900 on the final assembly line and it should fly in the second half of 2013. **Airbus** will increase the production rate of the popular A330 to 10 aircraft per month in the second quarter of 2013. This will follow last year's launch of the 242 metric-ton maximum takeoff weight version of the A330. The higher gross weight A330 can fly 450 nautical miles farther than the current aircraft. **Airbus Military** will commence A400M Atlas deliveries to the **French Air Force** and the **Turkish Air Force** this year. Thirteen A400Ms are currently in various phases of production and **Airbus** is manufacturing parts for another 15 A400Ms. Mr. **Brégier** said **Airbus** set the goal of selling approximately 700 new commercial jetliners and 30 military aircraft. It plans to deliver at least 600 jetliners and 28 military aircraft in 2013.

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billion (\$114 million each) at **Airbus'** published list price. **ALC** will announce its engine selections at a later date. The A321neo will be ready for delivery in late 2016. The first A350-900 is scheduled to enter airline service in 2014.

EasyJet may convert three A320 options into firm orders so that it has enough capacity for the summer of 2014. The interim order will allow the airline time to assess different aircraft for its future fleet. The airline finished its technical evaluation of the **Airbus** A320neo, **Boeing** 737 MAX and **Bombardier** CSeries aircraft, and has initiated commercial discussions with the manufacturers and their engine suppliers, **Pratt & Whitney** and **CFM International**. Delivery of the new fleet will start in 2017. **EasyJet** currently operates 172 A319s and 56 A320s. It has another 14 A320s on order.

Airbus Raised List Prices. The company increased the average list price by 3.6 percent as of January 1, 2013. It should be noted that the company gives generous discounts to the airlines and lessors which purchase large numbers of aircraft.

2013 Average List Prices in millions of dollars:

A318 ĩ	\$70.1	A319 ĩ	\$83.6
A320 ĩ	\$91.5	A321 ĩ	\$107.3
A319neo ĩ	\$92.0	A320neo ĩ	\$100.2
A321neo ĩ	\$117.4	A330-200 ĩ	\$216.1
A330-200F ĩ	\$219.1	A330-300 ĩ	\$239.4
A350-800 ĩ	\$254.3	A350-900 ĩ	\$287.7
A350-1000 ĩ	\$332.1	A380-800 ĩ	\$403.9

Airbus Choses "Plan B". The manufacturer intends to abandon the lithium-ion (Li-ion) batteries that grounded the rival 787 Dreamliner. It will install standard nickel cadmium batteries in its new A350. The A350 XWB was designed for the lighter and more compact lithium-ion battery system that was developed with French battery maker, **Saft Groupe SA**. **Airbus** said the Li-ion main battery architecture was robust and safe, and the A350 XWB flight test program will continue as planned with the qualified Li-ion main batteries. However, **Airbus** decided to switch to "Plan B" and fit the production A350s with the proven and mastered main batteries, because investigators have not been able to explain the two recent 787 Li-ion main batteries incidents. **Airbus** said in a press release, "In this context, and with a view to ensuring the highest level of program certainty, **Airbus** considers this to be the most appropriate way forward in the interest of program execution and A350 XWB reliability." Further the manufacturer launched additional studies on Li-ion battery behavior and it will incorporate the findings of the ongoing official investigation. By making the battery switch now, **Airbus** did not foresee a delay in the A350 XWB Entry-into-Service by the end of 2014. The press reported the A350 design change could cause only a few months' delay, while waiting for **Boeing** to resolve the 787's battery problems could significantly delay the A350 program. **Airbus** has said the A350's electrical design and its lithium batteries were more conservative than in the 787. The A350 system would have used four Li-ion batteries, while the 787 relied on two batteries. The traditional nickel-cadmium batteries are larger and heavier than the Li-ion batteries, and would add about 200 pounds to the airplane. The change will not be trivial and the redesign could take months. **Saft** already supplies nickel-cadmium batteries to **Airbus** for its A330 and A380 programs and it will probably provide them for the redesigned A350s as well.

Boeing Orders

Boeing Sold Only Two New Aircraft in January. An **Unidentified Customer** contracted for two 737-800s. The order raised the 737-800 sales total to 4,134, with 2,781 delivered and a backlog of 1,353. Those totals did not include sales of 40 P-8 Poseidons and 21 737-800BBJs. **Boeing** delivered 32 737s, one 767 and six 777s, for a total of 39 aircraft in January 2013. Deliveries of 787s were suspended due

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to the **FAA** grounding of the type in early January. **Boeing** delivered a record 62 aircraft and sold 183 new planes in December.

In February **American Airlines** purchased 100 737-800s, one 777-300ER and 42 787-9s. The orders were confirmation of commitments made in 2011. **Icelandair** confirmed its January commitment for 16 737 MAXs. **ALC** picked up five 737 MAX options and ordered another 10 777-300ERs.

American Airlines (AA) ordered its 15th 777-300ER in February, by confirming its last of two options. Late last year, **American** reported to the **Securities and Exchange Commission (SEC)** that it had firm orders for 13 777-300ERs and two on option. **Boeing's** official orders and deliveries report listed 14 firm orders as of January 31, 2013. The airline ordered its first two -300ERs in December 2001; eight -300ERs between January and August 2011, and the last four between June and September 2012. Many of those orders were originally listed under the "Undisclosed Customer" category until **American** chose to announce them. The first two -300ERs were delivered in December and the third arrived in January. Another two will be delivered by March. **American** will acquire five more -300ERs later in 2013 and the other five are due in 2014. Chairman and CEO **Tom Horton** told the press that the airline has yet another five -300ERs on order, but these commitments were not reflected in the **Boeing** sales lists. It is possible that **American's** five outstanding -200ER orders were, or will be, switched to the -300ER model, or that the five commitments are listed as options, and **AA** still intends to accept the five -200ERs that were ordered in December 2001. **American** signed sale & lease-back agreements with **Avolon Aerospace** for one -300ER and with **Guggenheim Aviation Partners** for two -300ERs in 2012.

In February **American Airlines (AA)** finally signed a five-year-old commitment to buy 42 787-9s, worth \$8.7 billion (\$207.14 million each). The airline optioned another 58 787s. In January, the press reported that the airline might switch 20 787-9 orders to the 787-8 model so that **AA** can keep to its schedule and take delivery of its first Dreamliner in November 2014. The 787-9 program was delayed several times pushing the first deliveries into late 2014 or early 2015. The last of the firmly ordered 787s will be delivered in September 2018. The airline also finalized its purchase of 100 737-8 MAX aircraft.

Boeing January 2013 Orders, Deliveries

JAN ORD	JAN DEL	JAN CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			737		
2	32	-0-	10,501	7,457	3,044
			747		
-0-	-0-	-0-	1,525	1,458	67
			767		
-0-	1	-0-	1,108	1,041	67
			777		
-0-	6	-0-	1,431	1,072	359
			787		
-0-	-0-	-0-	848	49	799
This Month			This Year		BL
2	39	-0-	2	39	4,336

Boeing sold 22,943 aircraft and delivered 18,607 as of January 31, 2013.

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

Sales totals are net, minus cancellations.

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They will be delivered between 2016 and 2022. It reserved options for 60 more MAX aircraft for delivery from 2022 through 2026. The airline intended to take advantage of its bankruptcy protection to negotiate reduced prices for its latest orders. In July 2011 **American** purchased 100 737-800 NGs and optioned another 40; that order is still listed on **Boeing's** official order book. Some of the 737NG orders may be converted into commitments for the more advanced MAX variant.

Icelandair increased its commitment to buy 737 MAX aircraft from 12 to 16 when it signed a firm contract for the planes in February. It split the order between 737 MAX 8s and MAX 9s and took purchase rights for eight more 737 MAXs. This latest commitment brings the total number of 737 MAX orders to 1,180 as of February 28. The planes are valued at more than \$1.6 billion (\$100 million each) at list prices and the first of **Icelandair's** new jets will be delivered in the first half of 2018.

Air Lease Corporation (ALC) picked up five of the 25 737 MAX options that it reserved at **Farnborough International Airshow** in July 2012. At the show, **ALC** announced its firm order for 60 737 MAX 8 and 15 737 MAX 9 airplanes, with reconfirmation rights for 25 additional 737 MAXs. That order was list-priced at \$7.2 billion (\$96 million each), and was the first 737 MAX order to be placed by a leasing company.

Air Lease Corporation (ALC) announced an order on February 28 for 10 777-300ERs, valued at \$3.2 billion at current list prices. The leasing company has ordered 185 airplanes from **Boeing** including 78 737-800 NGs, 80 737 MAXs, 12 787-9 Dreamliners and 15 777-300ERs. The leasing company also has reconfirmation rights on 20 additional 737 MAX airplanes.

Boeing announced in January that it started building the Next-Generation 737 at a rate of 38 airplanes per month. Over the last two years the company raised its 737 production rate by more than 20 percent from 31.5 to 38 airplanes a month.

Boeing intends to deliver up to 645 commercial aircraft in 2013, and this will bring potential revenue of \$51 billion to \$53 billion. The company predicted its 2013 revenue from all of its business units will range between \$82 and \$85 billion. **Boeing** said the grounding of 50 Dreamliners will not have any impact on its 787 orders or earnings for 2013. **Wall Street** analysts originally estimated the costs of fixing the 787 problem would range between \$350 million and \$625 million. However, as the investigation entered its second month with only hints of a solution, the costs are expected to escalate as the fix becomes more complex and expensive. **Ken Herbert** an analyst at **Imperial Capital** estimated that it was costing Boeing \$25 million per month in direct costs, and the total cost would surpass \$1 billion when the price of fixing the problem and delivery delay expenses were included. **Boeing** is building five 787s per month, but is unable to collect about \$200 million in final payments from its customers at delivery. The company must spend millions of dollars to maintain and insure the airplanes that are parked at the Everett and North Charleston production facilities. **Boeing** may have to delay its plans to double production by the end of this year. It costs **Boeing** \$1 billion a month to keep its two production lines running. These costs will be recouped when the aircraft are delivered, perhaps by the end of the year. The manufacturer also faces the expenses of assigning engineers to work on the battery problem and the cost of reworking the approximately 100 Dreamliners that have been completed. After the problems have been resolved, **Boeing** expects to build more than 60 Dreamliners in 2013. **Boeing** parked 10 new 787 Dreamliners at Everett. The 787s were built for **LOT**, **Thomson Airways** and **China Southern Airlines**. Four **Air India** 787s sit at the North Charleston, final assembly plant ramp.

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In 2014, the rate will be elevated to 42 airplanes a month. The first 737 to be assembled at the higher rate will be delivered in the second quarter of 2013.

Regional Report

Bombardier Aerospace sold 32 CS300 aircraft to Moscow-based national leasing company, **Ilyushin Finance Co. (IFC)**. The lessor also took options for another 10 CS300s. **IFC** signed a Letter of Intent for the C-Series aircraft in 2011, and the order is still subject to approval by the company's shareholders. The firm order was valued at approximately \$2.56 billion (\$80 million each) at list prices. Should **IFC** exercise its options, the 10 CS300s would be worth \$860 million (\$86 million each). The deal represents **IFC's** first large order for non-Russian aircraft.

Alexander Rubtsov, Director General of **IFC**, noted that the C-Series aircraft has a capacity and performance that is ideally placed between the Russian Superjet and the MC-21 aircraft which it has committed to purchase. He said, "The aircraft leasing world is changing rapidly. As older, less-efficient designs present ongoing challenges to airlines – given high fuel costs and heightened environmental concerns – the C-Series aircraft offers transcontinental range, superior field and runway performance, and a superb cabin that will bring air transport into the 21st century." Currently, 95 CRJ regional jets and Dash 8/Q Series aircraft are in service or on order in Russia and the Commonwealth of Independent States.

Interjet's First Sukhoi Superjet 100 (SSJ100) was rolled out from **SuperJet International's** paint hangar in Venice, Italy. The SSJ100 (SN 95023) will be the first to be delivered to the Mexican carrier. **Interjet** was the SSJ launch customer in the western market. The airline ordered 20 SSJ100 aircraft which will be configured with 93 seats. The color scheme features white and blue stripes. The first SSJ100 will be delivered to **Interjet** in the spring of 2013. The airline's second SSJ100 (SN 95024) arrived in Venice in February to enter the completion facility. The new SSJ **Full Flight Simulator (FFS)** was being certified at the **SJI Training Center** in Venice to enable the Mexican carrier's pilots to start training by the beginning of March.

Bombardier Commercial Aircraft sold 138 airliners during fiscal 2012. This was more than twice the 54 orders booked in the prior fiscal year. It received the largest orders from **WestJet Airlines** and **Delta Air Lines**. **WestJet** placed a firm order for 20 Q400 NextGen aircraft valued at \$683 million. **Delta** purchased 40 CRJ900 NextGen aircraft valued at \$1.9 billion. **AirBaltic** purchased 10 CS300 aircraft valued at \$764 million. The value of these firm orders were all based on list prices.

Bombardier Aerospace booked 50 firm orders and options for 31 of its Q400 and Q400 NextGen aircraft in 2012. It gained seven new operators and leasing company customers. The new orders were valued at up to \$2.7 billion. **Mike Arcamone**, President of **Bombardier Commercial Aircraft**, said, "In 2012, the Q400 NextGen aircraft order book grew significantly with orders from first-time customers – **WestJet** and **EuroLOT** – as well as from repeat customers looking to enhance their fleets with the only turboprop that accommodates more passengers and route possibilities. The Q400 aircraft spread further into secondary markets and, together with the Q400 NextGen aircraft, brought new customers, operators and leasing companies from almost every continent into the **Bombardier** turboprop family. This demonstrates the flexibility and performance capability of the aircraft."

Qantas Airways, Australia's largest domestic and international airline, added three Dash 8Q-400 NextGen turboprop orders in January, raising the airline's total Q400 backlog to 50. The contract was valued at approximately \$98 million (\$32.67 million each) at list prices. The airplanes will be operated

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on **Qantas'** extensive domestic network on behalf of **Qantaslink** by **Sunstate Airlines**. **Sunstate** currently operates 31 Q400s, while **Eastern Australia** flies two Dash 8-200s, three Q200s and 16 Q300 aircraft for **Qantaslink**.

Malaysia Airlines/MASWings ordered six **Viking Air** DHC-6-400s for delivery in 2014 and 2014.

Embraer expects to deliver from 90 to 95 commercial jets, 80 to 90 light executive jets, and 25 to 30 large executive jets in 2013. The company expects its total net revenues to range between \$5.9 and \$6.4 billion. **Embraer** broke out the approximate revenue contributions from each business segment and expects that **Embraer Commercial Aviation** will account for 52 percent of revenue. **Embraer Executive Aviation's** share will be 25 percent, while the **Defense and Security** unit will provide 21 of its earnings, and the rest of the business will equal 2 percent.

Russia and CIS Type Approval and Mongolian Type Acceptance Certification. In June 2012, the Q400 and Q400 NextGen aircraft became the largest Western-built turboprop aircraft to be awarded type approval for operation in Russia and the CIS. Mongolia granted the aircraft its type certification in May 2012. A few weeks later, **EZnis Airways** began to use its first Q400 aircraft to support the country's mining industry. **Bombardier** said the Q400 and Q400 NextGen aircraft are the advanced successors to the Dash 8Q-Series family. The large, fast, quiet and fuel-efficient Dash 8Q400 was optimized for short-haul operations. **Bombardier** has booked firm orders for 463 Q400 and Q400 NextGen turboprops to date.

American Airlines' Regional Carrier Republic Airways signed a contract with **Embraer** to buy up to 94 EMBRAER 175s in a deal worth up to \$4 billion. The airline placed a firm order for 47 E175 Jets and optioned another 47 aircraft. The contract was still subject to bankruptcy court approval as part of **American Airlines'** Chapter 11 filing. **Embraer** expected the court to approve of the order by the end of March. **Republic Airlines** operates services as one of **American's** regional **American Eagle**-branded airlines. It was the first U.S. carrier to fly E-Jets when it received the first one in 2004. The Brazilian plane maker said **Republic** will be the first carrier to fly the upgraded E175 jet with its new wingtips and aerodynamic refinements. The first of **Republic's** new 76-seat E175s will be delivered in mid-2013 and would be deployed out of **American's** Chicago hub. The first of the 47 optioned E-Jets would be delivered in 2015 if the options were exercised.

Malaysia Airlines (MAS) signed its order for 20 ATR 72-600s in late February and optioned another 16 aircraft. **ATR** reported that the 36 ATR 72s were worth more than \$840 million (\$23.33 million each) at list price. With this firm order, **MAS** has purchased 42 ATR 72s since it signed the first contract in 2007. The airline's subsidiaries **MAS Wings** and **Firefly** currently operate 10 and 12 ATR 72-500s respectively. The first of the new ATR 72-600s are expected to arrive in mid-2013. Twenty of the turboprops will be delivered to **Firefly** and 16 will be operated by **MAS Wings**. The airplanes will be operated on **Malaysian's** regional routes. **ATR** booked the 20 firm orders and 16 options in late 2012.

Engine News

The European Aviation Safety Agency (EASA) awarded the Engine Type Certification for the **Rolls-Royce** Trent XWB turbofan at **EASA's** headquarters in Cologne, Germany. The certification covered Trent XWB engines which will power the **Airbus** A350-800 and A350-900 variants. A higher thrust version of the Trent XWB is currently under development for the A350-1000. **EASA** confirmed that the

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engine fulfilled airworthiness requirements for flight and that was the last major engine milestone to be passed before the first flight of the A350-900 prototype (SN 001). It will take place in June. **Rolls-Royce** was preparing the engines that will be installed on the aircraft's pylons as fully integrated powerplants. The Trent XWB had powered a series of test flights on **Airbus'** A380 Flying Test Bed since February 2012. The flight-test results indicated that the engine met **Airbus'** extremely rigorous efficiency and performance goals for the A350 XWB program.

Rolls-Royce won an order from **Air Lease Corporation (ALC)** for Trent XWB engines to power 20 A350-900s and five A350-1000s. The engines were valued at \$1.1 billion at list prices. The 20 A350-900s will be powered by **Rolls'** standard Trent XWB engines, and the five -1000 variant will be equipped with higher-thrust version of the Trent XWB. **ALC** also reserved options for another five A350-1000s. **Rolls-Royce** reported that the Trent XWB was specifically designed for the A350 XWB, and it was the fastest selling Trent engine ever. More than 1,200 have been sold, and the first engines will launch the A350 test aircraft into the air in mid-2013.

CFM International (CFM) reported that 2012 was another outstanding year for the company. **CFM** booked orders for 898 commercial, military and spare CFM56 engines, and won firm orders and commitments for more than 1,100 LEAP engines. The combined list price value of the approximately 2,000 engines was \$23.5 billion. To date, **CFM** has logged total orders and commitments for more than 4,500 LEAP engines and sold nearly 29,300 CFM56 engines. **CFM** has been building CFM56 engines at historic rates. The company produced nearly 1,420 CFM56 engines in 2012, compared to just over 1,300 in 2011 and 1,250 engines in 2010. **CFM** has consistently built more than 1,000 engines per year since 2006. The company plans to manufacture more than 1,700 engines per year by 2019, as it phases out the CFM56 in favor of the LEAP engine.

Pratt & Whitney (P&W) successfully achieved **Transport Canada** type certification of the PW1500G **PurePower Geared Turbofan (GTF)** engine that will power **Bombardier's** CSeries aircraft. **P&W** conducted over 4,000 hours of rigorous testing on the PW1500G since September 2010. The test program included 340 hours of flight testing on **P&W's** experimental 747 Flight Test airplane. **Bombardier Commercial Aircraft** accepted the first pair of PW1500G propulsion systems and it is in completing final assembly of the first CSeries flight test aircraft the company said. **P&W** launched the PurePower PW1500G program in 2007 and conducted more than 9,000 hours of testing on its **Fan Drive Gear System** gearbox. The company said the tests validated the improvement in fuel efficiency and noise reduction that was expected. The PW1500G engines are being assembled at **Pratt & Whitney Canada's** Mirabel Aerospace Centre in Mirabel, Quebec. **UTC Aerospace Systems** will provide the nacelle system.

Order Changes and Cancellations

Airbus Order Shuffle. In January, **Aircraft Purchase Fleet** cancelled 17 A320 orders. The airplanes were to be leased to **Alitalia**. **Aviation Capital Group** switched six A320 orders to the A321 type. It now has 79 A320 and 18 A321 orders. **Afriqiyah Airways** changed two A330-200 orders to the A330-300 type.

Boeing's Order Cancellations and Changes. Boeing did not announce any cancellations in January. **LOT Polish Airlines** delayed delivery of its next three 787 Dreamliners until October at the earliest. The planes were originally scheduled to arrive in March, but the grounding of the 787 disrupted all Dreamliner deliveries. **LOT's** finished airplanes are sitting on the ramp at Everett. The Polish flag carrier said it had already lost 7.7 million zlotys (\$2.5 million) due to the loss of potential revenue from 787 operations. It has been losing \$50,000 per day while its two 787s are grounded.

Leasing Companies

Copa Holdings closed a sale-leaseback transaction for four new 737-800s with **SMBC Aviation Capital**. The aircraft are coming from **Copa's** current order backlog. The planes are scheduled for delivery in 2014. In January, **Copa** agreed to sell and leaseback four 737-800s with **MC Aviation Partners (MCAP)**. The airplanes are scheduled for delivery in March, April, August and October 2013.

Air Lease Corporation (ALC) Leases. ALC will long-term lease two new 777-300ERs to **Air New Zealand**. The planes will arrive in 2014. **LIAT (Leeward Islands Air Transport)** will long term lease two new ATR 72-600 aircraft from **ALC**. The turboprops will be delivered in June and August 2013. The Antigua-based regional airline is owned by 11 eastern Caribbean governments. **LIAT** is the major scheduled airline in that region. It is buying three ATR 72-600s directly from the manufacturer with the first delivery scheduled in June 2013.

AWAS purchased five late-model narrowbody passenger aircraft from **BOC Aviation**. These aircraft are all subject to long-term leases with their respective airlines. **AWAS** commented, "We are very pleased to expand our relationship with **Spring Airlines** and **WestJet** as well as welcoming **Etihad** and **Shandong Airlines** as valued **AWAS** customers." The lessor bought one A320 that is leased to **Etihad**, one A320 for **Spring Airlines**, one 737-800 that is in **Shandong Airlines'** fleet, and one 737-700 and one 737-800 currently operated by **WestJet**.

AWAS A320 Leases. The lessor will lease nine A320s to **Thai Airways**. The airplanes will come from the lessor's backlog and will be operated by **Thai's** new regional subsidiary, **Thai Smile**. The airline is a new customer for **AWAS**. The Russian flag carrier, **Aeroflot**, will lease its sixth new A320 from **AWAS**. The airplane will come from **AWAS'** backlog and it will be delivered in 2014. **AWAS** and **Aeroflot** previously signed a deal to lease five new A320s for delivery by the end of 2014.

Avolon bought one 737-800 NG and one 777-300ER from **American Airlines** and leased them back. These were the third and fourth transactions of a six-aircraft sale and leaseback contract. The deal covered five **American** ordered 737NGs and one 777 aircraft. **Avolon** also delivered the second of two new 737-800 NGs to **China Eastern Airlines**.

Avolon's fleet has grown to 167 aircraft as of December 31, 2012. The lessor's total capital exceeded \$5.1 billion. During 2012, the company raised \$300 million in new equity from the **Government of Singapore Investment Corporation**, and \$1.3 billion in new debt financing. **Avolon** took delivery of 40 aircraft valued at more than \$2 billion. This made **Avolon** one of the top global lessors in terms of new aircraft deliveries. The lessor ordered 20 **Airbus** 320neo and 20 **Boeing** 737 MAX aircraft. It was one of the first lessors to buy aircraft from both programs. It grew its customer base to 34 airlines and its lending group to 24 financial institutions. **Avolon** also formed a joint-venture with **Wells Fargo** named **Avolon Capital Partners**. It will have \$500 million worth of new aircraft in its portfolio.

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Vueling Airlines will lease two new A320s from **AWAS**. These aircraft will be delivered in the first half of 2013 and come from the lessor's backlog. The airline currently operates two A319s and 55 A320s.

Aerolíneas Argentinas extended the lease term of one A340-300 that it acquired from **AWAS**. The plane has provided long-haul service in the Americas from early 2012. **Aerolíneas** will lease a third new 737-800 equipped with the **Boeing Sky Interior** from **AWAS**. The airplane is part of the lessor's backlog of new 737-800 orders. The leases are part of the airline's on-going fleet modernization and optimization program.

Airline News

IATA Posts February Jet Fuel Prices. The association updates the world's average jet fuel price each week. On February 8 the average price of fuel was \$3.329 per gallon. The fuel price was \$3.049 per gallon on January 5. The February price was 6.9 percent higher than in the previous month, and was 4.1 percent more than in February 2012. The price of fuel is affected by location. It is only \$3.238 in the Middle East region and as high as \$3.465 per gallon in Latin America. **IATA** forecast that the global airline industry's fuel bill will total \$132.9 billion in 2013. This is an increase of \$11 billion over 2012. Fuel cost only 87 cents per gallon in 2000.

The Oneworld Alliance welcomed Kuala Lumpur-based **Malaysia Airlines (MAS)** into its fold. The addition of **Malaysia** will significantly expand **oneworld's** route network in the rapidly expanding Southeast Asian region where it can offer more services and benefits to customers. **MAS** serves more than 60 cities in nearly 30 countries. Its inclusion will substantially strengthen the alliance's connectivity between key business cities in Asia and other parts of the world.

International Air Transport Association (IATA) released its November 2012 numbers which showed an improvement in both passenger and air freight traffic. Air travel was 4.6 percent higher than in November 2011. Air freight volumes rose 1.6 percent over the same period last year after declining by 2.6 percent in October. Passenger capacity did not keep pace with traffic, rising by 3.2 percent, which improved load factor by 1 point to 77.3 percent, when compared to November 2011. **IATA** cautioned that air cargo markets may not have reached a turning point in terms of regaining lost ground, but the economic growth in the U.S. and stability in the E.U. may favor a return to growth in 2013. Air travel is

GE Capital Aviation Services (GECAS) Announces Leases to three Airlines. **GECAS** signed a purchase and lease-back transaction with **Volaris** for seven new A320 aircraft. The aircraft come from the airline's existing orderbook and will be delivered in 2013 and 2014. **Volaris** is Mexico's second-largest carrier and its largest low-cost operator. It flies to more than 38 destinations in Mexico and the United States with a fleet of 41 A320 Family aircraft. Another Mexican low-cost airline, **Interjet**, signed a sale and lease-back transaction for six new A320s with **GECAS**. **Airbus** delivered two of the aircraft in December 2012 and the other four will arrive in 2013. The six A320s were the last to be delivered from an order for 20 that **Interjet** signed in 2006. Last November, **Interjet** purchased 40 A320neo aircraft for delivery starting in 2018. The airline operates its all-A320 fleet of 37 owned and leased aircraft to more than 30 destinations in Mexico, Central America, the Caribbean and the U.S. **GECAS** will lease three A319-111s to a new customer **Donavia**, which is a subsidiary of **Aeroflot**. The aircraft are scheduled for delivery in March, April and May. **Donavia** is based in southern Russia, and currently operates 10 aircraft on domestic and international routes.

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just 2 percent better than at the start of 2012, and this was weaker than the long-term average growth rate.

AirAsia, Malaysia, and the **Tata Group** in India, will jointly launch **AirAsia India**. The new airline will be managed by its 49 percent owner, **AirAsia**, and it will be based in the southern city of Chennai. The domestic airline will serve smaller cities. **AirAsia** is the first foreign airline to try to enter the fiercely competitive Indian market. No airline in India has been profitable and the industry has seen several mergers and the near bankruptcy of **Kingfisher**. **Etihad Airways** made a tentative bid for **Jet Airways**, but recently pulled back from signing an agreement. However, **AirAsia's** CEO **Tony Fernandes** said, "We have carefully evaluated developments in India over the last few years and we strongly believe that the current environment is perfect to introduce our low fares." **AirAsia's** investment arm will own 49 percent of the new airline. **Tata Sons**, the holding company of the conglomerate **Tata Group**, will hold 30 percent. **Arun Bhatia**, owner of **Telestra Tradeplace** will hold the remaining 21 percent. **Tata Sons** said it would not have an operating role in the new carrier. The launch of **AirAsia India** represents the **Tata Group's** return to the airline business. **Tata Airways** was founded in 1932 and was re-named **Air-India** in 1946. It was nationalized in 1953, forcing the **Tata's** out of the industry. **Tata** tried to buy **Indian Airlines** in 2000 but it was rebuffed. **AirAsia** bid for **SpiceJet** in 2012, but that was blocked as well. Presumably the new airline will operate some of the 475 A320s that **AirAsia** has ordered.

Etihad Airways Puts Brakes on Jet Airways Investment. Chairman, **Sheikh Hamed bin Zayed Al Nahyan**, told the press that **Etihad** would revise the deal with **Jet**, which will delay when the final agreement would be struck. India has serious problems with poor corporate

International Air Transport Association December International Traffic Growth.

Dec 2012 vs. Dec 2011	RPK Growth	ASK Growth	Pax Load Factor	FTK Growth	AFTK Growth
Africa	5.7%	3.7%	68.5%	8.2%	5.6%
Asia/Pacific	5.9%	2.2%	77.6%	-4.4%	-3.1%
Europe	2.2%	0.0%	78.3%	-1.8%	-8.7%
Latin America	9.9%	10.2%	74.9%	3.2%	3.5%
Middle East	13.3%	12.7%	77.4%	15.7%	11.0%
North America	1.5%	-0.2%	81.8%	-1.5%	-2.8%
Industry	5.0%	2.8%	77.9%	-0.5%	-2.0%

Year to Date 2012 vs. 2011	RPK Growth	ASK Growth	Load Factor	FTK Growth	AFTK Growth
Africa	7.5%	7.1%	67.1%	6.1%	9.2%
Asia/Pacific	5.2%	3.0%	77.5%	-6.2%	-2.9%
Europe	5.3%	3.1%	80.5%	-3.1%	-0.1%
Latin America	8.4%	7.5%	77.9%	-1.3%	2.9%
Middle East	15.4%	12.5%	77.4%	14.8%	11.6%
North America	1.3%	-0.3%	82.0%	-1.3%	-1.0%
Industry	6.0%	4.0%	78.9%	-1.9%	0.6%

RPK: Revenue Passenger Kilometers measures actual passenger traffic

ASK: Available Seat Kilometers measures available passenger capacity

PLF: Passenger Load Factor is the percent of **ASKs** used. In comparison of 2009 to 2008, **PLF** indicates point differential between the periods compared

FTK: Freight Tonne Kilometers measures actual freight traffic

AFTK: Available Freight Tonne Kilometers measures available total freight capacity

governance, lack of transparency, capricious policy reversals and government corruption. The Abu Dhabi flag carrier was worried about the investment's potential legal issues and the two airlines were working to resolve them. **Etihad** does not want to get hurt like Abu Dhabi's **Etisalat** telecommunications company, which invested in India, only to be caught up in a \$37 billion telecom corruption scandal. It eventually closed its Indian mobile phone operations last year and wrote off \$827 million. There were other corruption scandals involving the **Indian Government**, the coal industries, and **Wal-Mart Stores**. Further, **AgustaWestland**, Italy, was accused of bribery as part of its \$750 million helicopter contract. **Etihad** intended to invest \$330 million to buy 24 percent of **Jet Airways**. The **Indian Government** relaxed airline ownership rules September 2012, and if the transaction was consummated soon, **Etihad** would be the first foreign investment in India's aviation industry. **Etihad** CEO **James Hogan** said, "India is an important market for us, so the Gulf carrier will likely use **Jet's** extensive domestic network to feed **Etihad** through an enhanced code-share agreement. In exchange **Jet** will receive some much-needed cash to pay down its \$2 billion debt and will use international feed from **Etihad** to generate more traffic and to launch new routes. **Jet's** foreign hub will be switched from Brussels to Abu Dhabi.

Thomas Cook, the British travel group plans to merge its German, British and Belgian airline units into a single airline. A new management board will oversee the combination of **Condor**, Germany, **Thomas Cook Airlines**, U.K., and **Thomas Cook Airlines Belgium**, starting on March 1. The world's oldest travel company launched its turnaround plan last year, after it was handed a re-financing package by its lenders last May. The group saw its business and finances pick-up in recent months. Shares in **Thomas Cook** had doubled in the past three months to £0.69 per share, raising the company's value to about £610 million (\$960 million). The new co-Chairman, **Christoph Debus**, said, "At time when the European airline industry is experiencing major change, we believe that our airline will be stronger as one integrated business."

Ryanair Must Wait. The Irish low-cost airline will learn whether the EU regulators will allow it to buy **Aer Lingus** on February 27. The EU Competition Commissioner **Joaquin Almunia** already indicated that he opposed the acquisition. **Ryanair** said the negative ruling was clearly a political one designed to protect the narrow, vested interests of the **Irish Government**, and it would challenge the ruling in the **European Courts**. **Ryanair** had offered to pay €100 million (\$132 million) to **Flybe** in the U.K., as well as transfer nine aircraft and 43 routes to that airline in order to win EU regulatory approval. **Flybe** was to be set up as an Irish airline, and **Ryanair** would provide financing and assets worth around €50 million. However **Aer Lingus's** management dismissed the plan as unrealistic. "It seems to me so farfetched, this proposition, that we don't bother wasting our time on it," **Aer Lingus** CEO **Christoph Mueller** told the press. **Aer Lingus** would also give up its London **Gatwick Airport** route to **British Airways**. The **Irish Government** still holds 25 percent stake in its flag carrier and it has opposed **Ryanair's** bid from the beginning. **Aer Lingus** also saw its profits rise by 40 percent from the first quarter of 2012, to €69.1 million. Its share price was bid up by the news from €1.10 to €1.28 per share since January 1. The current price was just short of the premium of €1.30 that **Ryanair** offered in its bid last year. The national carrier's yield-per-passenger was improved by 7 percent from last year while passenger numbers were up 1.5 percent to 9.5 million. **Ryanair** already owns 29 percent of its Irish rival and its two previous attempts at buying a controlling interest were unsuccessful as well.

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Flybe, a U.K.-based regional airline, will cut 300 jobs and retire seven aircraft. The airline operates 23 **Embraer** E-Jets (with 26 on order) and 47 **Bombardier** Q400s, but it did not say which airplanes it will cut. **Flybe** will focus on its scheduled services in the U.K. and will increase its European contract flying. The airline codeshares with **Air France**, **British Airways**, **Etihad Airways**, **KLM** and operates **Finnair's** regional services as **Flybe Nordic**.

The Australian Competition and Consumer Commission (ACCC) ruled that competition will be harmed if **Virgin Australia Holdings** was allowed to take control of **Tiger Airways**. The regulator said completion would be muted if the country's second-largest carrier was allowed to buy third-ranked **Tiger**. Chairman **Rod Sims** said, "Having a third player in there like **Tiger** does discipline the other two players. If you have that taken out you do lose that discipline." **Virgin** has prepared a response and "strongly believes" the deal could increase competition. The commission called for further submissions and said it would issue a final ruling on March 14. One consideration was whether **Tiger** would quit the market if it were not bought out. **Virgin** plans to more than triple **Tiger's** fleet to 35 aircraft. It intends to challenge **Qantas Airways'** control of nearly 65 percent of the domestic aviation market. **Singapore Airlines** accepted **Virgin's** A\$35 million (\$36 million) offer to buy 60 percent of its Australian budget carrier, **Tiger**. The ACCC approved **Virgin Australia's** purchase of the Perth-based regional carrier, **Skywest Airlines**, for A\$96 million (\$99 million) in cash and shares. Chairman **Sims** said the deal was unlikely to lead to a substantial lessening in competition in any relevant market because **Skywest** and **Virgin** compete only on the Perth-Broome route. Further, he said, "The market was broadly supportive of the proposed acquisition. The services that **Virgin** and **Skywest** supply are seen as largely complementary, rather than competitive with each other." **Skywest** operates 12 jets and eight Fokker 50s on regional services within Western Australia. It also flies 10 ATR 72

Airlines Adjust Summer Schedule Without the 787 Dreamliner. **Norwegian Air Shuttle** was told by **Boeing** that the delivery dates for its first 787s had slipped. According to the press, **Norwegian** was not told when it could expect its new planes. The airline said that it will sign leasing agreements for long-haul equipment to replace the 787 if it is not operational in time for the scheduled launch of routes from Oslo to New York and Bangkok in May. **Norwegian Air** CEO **Bjorn Kjos** said, "As one of **Boeing's** biggest customers in Europe, we expect that the aircraft manufacturer does everything in its power to get the aircraft ready for delivery as soon as possible." **Norwegian** had ordered eight Dreamliners. **Boeing** told **Thomson Airways**, a subsidiary of Britain's **TUI Travel**, that its first Dreamliner deliveries had been "moved out of the month" of February, and it could not give the airline a new delivery date. **Thomson** had launched an advertising campaign in April 2012, saying its new fleet of Dreamliners, were the "future of long-haul travel." The airline planned to start 787 operations in May. **LOT** recently announced that it too would suspend 787 operations until October. The Polish flag carrier received its first two 787-8s late in 2012, it was to accept three more by March. The 787s were to replace **LOT's** three aging 767-300ERs. **United** said it will resume 787 operations on June 6 at the earliest. Its six Dreamliners represent less than one percent of its fleet of 700 aircraft, so the grounding was having a negligible effect on scheduling. **All Nippon** will resume 787 services in late May if the flight ban is lifted before then. **Boeing** said it deeply regretted the impact the recent events have had on the schedules of its customers. The company was staying in close communication with the airlines as it worked towards an approved means of compliance with the **FAA Airworthiness Directive** and developed a plan for resumption of 787 deliveries.

turboprops for **Virgin Australia** under a wet-lease agreement. Its major competition is **QantasLink**, which flies 13 **Boeing** 717s and 49 **Bombardier** Dash 8s. The **Skywest** takeover was still subject to more conditions, which included approval from Australia's **Foreign Investment Review Board** and **Skywest** shareholders. After the takeover, **Skywest** would continue to be a separate airline and keep its air operator's certificate. It would be branded as **Virgin Australia**.

Bankruptcy of the Month

Indonesia's Number Four Airline, Batavia Air, was forced to cease operations on January 31, 2013, when the **Central Jakarta Regional Court** granted **ILFC's** bankruptcy request. The airline owed the lessor \$4.68 million back rent on the two A330s that were leased in 2009. **Batavia Air** was founded in 2001 as **Metro Batavia**. When it shut down, the airline operated five A320s, one A321, two A330s, and 26 737 Classics. At the end, the airline was crushed by the completion from the larger and better financed, **Indonesian AirAsia, Garuda** and **Lion Air**. It operated a fleet of old aircraft and was selling tickets below its operating costs. **AirAsia** offered to buy **Batavia Air** for \$80 million in July, 2012, but it pulled out of the deal in October. The **Indonesian Government** blocked the purchase citing laws forbidding foreign companies from owning more than 49 percent of local businesses. Indonesia boasts 22 domestic commercial airlines and **Batavia** was the second to run into debt problems in the last two years. The market has seen some consolidation and outside investment. Recently **PT Mandala Airlines** was partially purchased by **Tiger Airways**, Singapore. The intense competition is squeezing out the weak carriers, but the survivors will see their middle-class customer-base grow by 90 million by 2030. The market is and has been very fragmented among the 22 airlines, but **Lion Air** has dominated with almost half of the market, while **Garuda** has controlled nearly 25 percent and **Sriwijaya Air** has accounted for more than 10 percent. **Sriwijaya Air's** CEO, **Toto Nursatyo**, succinctly stated the obvious, "This current environment basically allows bigger airlines to get bigger, while smaller airlines will go bust. Those who have bigger capital and bigger market share will thrive while those who just come in and try their luck will struggle."

Bahrain Air, the country's privately owned airline filed for bankruptcy on February 12, 2013, due to its financial difficulties and political unrest in the island kingdom. Traffic declined when pro-democracy protests erupted in Bahrain in 2011. The protests were suppressed but broke out intermittently which inhibited the travel and

Kingfisher Airlines' lenders chose to recall their loans in February, because the airline still had not developed a viable business plan to stay in business, a senior **State Bank of India** executive said. The loan recall or a demand for immediate repayment involved a legal procedure which would allow the lenders to sell any **Kingfisher** assets they hold as collateral. Each bank's board of directors would have to approve the procedure. The airline put up its office in Mumbai, several other real estate assets, and its brand as collateral against loans. Many leasing companies have repossessed most of **Kingfisher's** airplanes, and India's tax authorities have frozen several of their bank accounts. The loan recall will be the end of the road for **Kingfisher**, which now owes more than \$2.5 billion to its lenders, suppliers, leasing companies, airport operators, other airlines, employees, and government in taxes, the Indian press reported. A final nail in **Kingfisher's** coffin was the statement by India's civil aviation ministry which said the airline's airport slots and flying permits would be made available to other airlines. The failed carrier flew to 13 foreign countries, including Hong Kong, Singapore, Thailand, United Kingdom, and the UAE.

tourism industries. The government said it would compensate the airline for its loss of income. The **Ministry of Transportation** told **Bahrain Air** to scale back its operations at the same time the government demanded immediate payments on its debts to the state. The airline was launched in 2008, and operated two A319s and two A320s when it closed. The shareholders chose to liquidate the airline.

Cargo Pallet

PEMCO World Air Services (PEMCO) started the conversion of the first two of 20 737-400s for **AERGO Cargo Solutions (AERGO)**. The first 737 entered the conversion line at **PEMCO's** Tampa facility and the second was flown to **HAECO Group's STAECO** facility at Jinan, China. **PEMCO** said both aircraft will become 737-400F 11-position, high-yield freighters capable of carrying a wide variety of containers or pallets, including: 88×125, 108×125, 96×125, military pallet, demi, LD3, AEH, and 11,000-pound engine hauling pallets, plus a smaller hazmat-capable container. The airplanes will be worlds only 737-400Fs that comply with the new fire hazard related hazmat regulations.

Aeronautical Engineers, Inc. (AEI) received a **Supplemental Type Certificate (STC)** from the **U.S. Federal Aviation Administration (FAA)** for its MD-80SF Passenger to Freighter Conversion. The STC covered the conversion of the MD-81, MD-82, MD-83 and MD-88 models. The prototype MD-82SF (SN 49470) was built in 1987, and the modification touch labor was performed by **AEI's** authorized conversion center, **Commercial Jet**, in Miami, Florida. **McDonnell Douglas** built 1,116 MD-80s and 75 short body MD-87s from 1980 to 1999. Approximately 681 were still in airline service in mid-2011.

United Parcel Service (UPS) cancelled its \$6.9 billion purchase of the Netherlands-based delivery company, **TNT Express**, because the **European Commission** told the U.S. company it would block the deal on anti-trust grounds. **TNT Express** lost money after it entered emerging markets in Africa, Asia and Latin America, but **UPS** saw great potential in those markets. The combination of the two companies could have generated around \$60 billion in revenue. **UPS' biggest competitors, Deutsche Post DHL and FedEx** have revenues of \$68 billion and \$43 billion, respectively. **UPS** needed the deal to expand out of the U.S. domestic market which accounted for 74 percent of its total revenue. The addition of **TNT** would have immediately added 10 percent to **UPS's** international revenue. The deal would have boosted **UPS's** market share in Asia from 16 percent to an estimated 28 percent, **TNT** said. **DHL** currently controls 31 percent of the Asian market, and **FedEx's** share was 25 percent. **TNT Express** has been a large player in China, it was in second-place in Australia, and was growing aggressively in India. In South America, **TNT** has a 20 percent of Brazil's market share. The **European Commission** blocked the deal because the **UPS/TNT** combination would have had too many freighters in Europe, equaling 17.3 percent of the European cargo transport fleet. The current leader, **DHL**, has 17.6 percent and **FedEx's** share in European express business has been 3.3 percent. **UPS** tried to sell its **TNT Express** fleet to the French delivery company **DPD**, but the **EC** thought it was too small to be competitive. The Netherlands postal service owns nearly 30 percent of **TNT Express**, but it has been looking for a buyer.

Military Market

More Airbus Military CN235 Sales. The U.S. **Coast Guard** exercised the fourth of six options to purchase one HC-144A Ocean Sentry Maritime Patrol Aircraft. The HC-144A is based on the **Airbus Military** CN235 tactical airlifter and was delivered through **EADS North America**, an American-based prime contractor. The **Coast Guard** ordered three aircraft and optioned six more in July 2010. The three firm HC-144As, the 12th, 13th and 14th, were delivered by the end of 2012. The 15th aircraft is due by July and the 16th and 17th aircraft will be delivered in early 2014. The most recently ordered HC-144A and the two remaining options are due for delivery in 2014. The **Coast Guard** has plans to operate 36 HC-144As. **Airbus Military** said it ñequips the HC-144A with search radar, electro-optical and infrared cameras, an **Automatic Identification System** for data collection from vessels at sea, and a communications suite. The electronic mission suite is palletized and can be unloaded through the **Ocean Sentry's** rear cargo ramp. The empty aircraft can fly airlift, cargo, and MEDEVAC missions. The rear ramp can also be opened in flight to deploy search-and-rescue equipment. **Airbus Military** has sold more than 230 CN235 aircraft to 29 countries.

China's Ministry of National Defense announced that the first domestically-developed **Xi'an Yun-20** heavy air freighter completed its maiden flight on January 26, 2013. The Y-20 is powered by four Russian **Aviadvigatel** D-30 turbofan engines and can carry a maximum payload of 66 metric tons. It has a maximum takeoff weight (MTOW) of more than 200 tons. The Y-20 is 154 feet long and has a wingspan of 164 feet. The Yun-20 will be China's **Peoples' Liberation Army Air Force's (PLAAF)** long-range, strategic cargo and passenger air transport. The **Chinese Air Force** currently operates 17 Russian-built **Ilyushin Il-76** transports and has another 30 on order. The Chinese intended to reduce its dependence on foreign airplanes and engines. The Y-20 program was launched in 2006 and was very similar in design to the Il-76 with swept wings, a high T-tail, four-podded engines, and a rear loading ramp.

Boeing plans to deliver three P-8I Poseidon long-range maritime reconnaissance and anti-submarine aircraft to the **Indian Navy** in 2013. The remaining five will be handed over by 2015. The **Indian Air Force** will receive five C-17 Globemaster III airlifters in 2013 and the last five in 2014.

AIRCRAFT DELIVERIES & SALES

Airbus

Airbus A319. **Airbus** delivered only two A319s in January. **Alitalia** leased its last two -111s (SN 5294 & 5424) from **Aircraft Purchase Fleet**, filling the lessors' order for 10 of the type. In December **Airbus** delivered one ACJ319-115 (SN 5040) to an unknown customer, and one ACJ19-

Boeing delivered the sixth production P-8A Poseidon (SN 40816) to the **U.S. Navy** on January 31. This was the last P-8A of the first group of **Low-Rate Initial Production (LRIP)** aircraft that were ordered in January 2011. The P-8A is based on the Next-Generation 737-800, and provides long-range maritime patrol capabilities including: anti-submarine warfare, anti-surface warfare, intelligence, surveillance and reconnaissance. It is replacing the **U.S. Navy's** P-3 fleet. The seventh production P-8A will be delivered to the **Navy** later this quarter. Two Poseidon aircraft are having their mission systems installed in Seattle, and two more are in final assembly in Renton. **Boeing** is scheduled to build 24 P-8As to fill contracts awarded in 2011 and 2012.

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133 (SN 5261) to **Comlux Aviation Malta**. The **Government of Oman's** ACJ319-133 (SN 4992) entered service in January, after its executive interior was installed in Dallas.

Airbus A320. Airbus delivered 24 A320s in January, including two -214s (SN 5425 & 5441) to **Lufthansa**. **LATAM Airline Group** acquired its 50th and 51st -214s (SN 5443 & 5453). Both airplanes were sold to **Gaviota Leasing** and were leased to **LAN Airlines**, Chile. **Spring Airlines** leased one -214 (SN 5434) from **GECAS**, one -214 (SN 5446) from **Aviation Capital Group**, and the second of two new -214s (SN 5466) from **AWAS**. The airline now operates 35 A320s. **AWAS** also leased one new -232 (SN 5433) to **Qantas' Jetstar Asia** subsidiary. **Qantas** will lease another two A320s from **AWAS** in the first quarter of 2013, for operation by **Jetstar Asia**, in Singapore, and by **Jetstar** in Australia. **Peach Aviation**, Japan, leased -214 (SN 5440) from **GECAS**. **SMBC Aviation Capital** leased -232 (SN 5436) to **Thai Smile Airways**, and **ICBC Financial Leasing** leased **Tianjin FAL**-built -232 (SN 5288) to **China Southern Airlines**. Airbus delivered **Tianjin**-built -214 (SN 5216) to **Hainan Airlines**, which transferred it to **Beijing Capital Airlines**, and one -214 (SN 5226) to **Juneyao Airlines**. **Hong Kong Airlines** accepted one -214 (SN 5416), and **Air Lease Corp.** leased -232 (SN 5461) to **China Eastern Airlines**. Also **Tiger Airways** leased its sixth -232 (SN 5449) to **Mandala Airlines**. **Spirit Airlines** took delivery of its 10th of 108 -232s (SN 5458), and **Avianca** received one -214 (SN 5454). In the Middle Eastern region, **Air Arabia** accepted its 15th new -214 (SN 5452), and **Afriqiyah Airways** bought its eighth and final -214 (SN 5448).

Airbus Delivered the First Sharklet-Equipped A320s. **Cebu Pacific Air** took delivery of its first winglet-fitted -214/W (SN 5442) in January. The airline was the second to fly Sharklet-equipped A320s after **AirAsia**, which accepted its first -216/W (SN 5428) in December. **AirAsia** also leased its second -216/W (5468) to **Thai AirAsia**. **IndiGo** purchased its first Sharklet-equipped -232/W (SN 5437) in January and its second and third -232/Ws (SN 5460 & 5473) in February. It is India's largest

February Sharklet Deliveries.

BOC Aviation took delivery of its first Sharklet-fitted -232/W (SN 5472). The aircraft was leased to **Jetstar Asia**. It was the 20th A320 family aircraft that **BOC** leased to the **Qantas** group. **Jetstar Japan** became the first Japanese carrier to operate the A320 with Sharklet wingtips when it accepted its first -232/W (SN 5492). **Jetstar Japan** started operations in July 2012 as a joint venture between the **Qantas Group**, **Japan Airlines**, **Mitsubishi Corporation** and **Century Tokyo Leasing Corporation**. The airline leases eight A320s, and its fleet will grow to 24 aircraft by the end of 2014. **Avianca**, Colombia, received the first Sharklet-equipped A320 to be delivered in the Americas. The -214/W (SN 5477) is powered by CFM engines. **Avianca/TACA** currently operates 98 A320 Family aircraft, and has 70 more on order with the option for them to be Sharklet equipped. Sharklets will be standard equipment on all versions of the A320neo Family. In 2012, **Avianca** ordered 33 A320neo aircraft along with 18 A320neos.

JetBlue Airways fitted its nearly new A320-214 (SN 5417, N821JB) with Sharklets, becoming the first airline in North America to operate the aircraft. The Sharklets were retrofitted by **JetBlue's** maintenance facility at **JFK Airport**, with support from **Airbus**. The A320 was built with its outer wing structurally ready to accept the Sharklets. The modified airplane flew on February 22. By the end of the year the airline will operate 12 wingtip equipped aircraft, and all its newly purchased aircraft will be retrofitted after they arrive from the factory. **JetBlue Airways** also signed a Letter of Intent to acquire 110 Sharklet ship-sets – almost enough to retrofit all of its current fleet of A320s.

airline and it has taken delivery of 74 A320s to date. The airline ordered 100 A320s in 2005 and it placed a repeat order for 30 A320s and 150 A320neo aircraft in 2011. Another Indian low-cost carrier, **GoAir**, took delivery of its first Sharklet equipped -214/W (SN 5463) in January. The plane was sold to **Aviation Capital Group** and leased-back. **GoAir** ordered 20 A320ceo (current engine option) aircraft in 2006. So far nine of the 87 A320s on order have been delivered to **GoAir**. All of its subsequent airplanes will be equipped with Sharklets.

Iraqi Airways leased two A320-214s (SN 5115 & 5290) from **airberlin** in January. The flag carrier leased two A321-231s (SN 4044 & 4067) from the **Trade Bank of Iraq** in November 2012. The airplanes were operated by **Blue Wings**, Germany, until it went bankrupt in January 2010.

AWAS delivered two new A320s to the **Qantas Group** for operation by their **Jetstar** and **Jetstar Asia** subsidiaries. The A320s came from **AWAS**' existing backlog. These aircraft were the last of three A320s to be leased to **Qantas** in the first quarter. **AWAS** has now leased eight A320s to the **Qantas Group**.

Airbus Military redelivered the first of three new A330-243 MRTT (multi-role tanker transports, SN 1186), to the **United Arab Emirates Air Force and Air Defense**. The other two aircraft are being converted at **Airbus Military**'s facility at Getafe, Spain, and will be redelivered by mid-2013. The company has delivered air-to-air tankers to all four current customers i Australia, Saudi Arabia, UAE and the United Kingdom. In December, **Airbus Military** redelivered -243 MRTT (SN 1248) to **Air Tanker Ltd.**, for operation for the **Royal Air Force (RAF)**, and handed over one -202 MRTT (SN 1235), to the **Royal Saudi Air Force (RSAF)** in January. That airplane was formally inducted into service in February. It is the first of a batch of three that have now been contractually delivered. Deliveries of a second batch of three to the **RSAF** will begin at the end of 2014.

Airbus A321. **Airbus** delivered four A321s in January. **Air China** accepted one -232 (SN 5435), and **Vietnam Airlines** leased another -231 (SN 5438) from **Vietnam Aircraft Leasing**. **Turkish Airlines** bought its 33rd -231 (SN 5450), and **Saudi Arabian Airlines** accepted -211 (SN 5314).

Airbus A330. **Airbus** delivered two -200s and three -300s in January. **China Eastern Airlines** acquired -243 (SN 1375), and **Airbus Military** received -202 (SN 1379). The airplane will be modified into an A330 MRTT for the **Royal Saudi Air Force**. **TUI Travel Aviation Finance** bought -343E (SN 1376) and sold it to **MCAP Europe**, which leased it to **Corsair International**. **Thai Airways International** accepted -343E (SN 1374), and **Transasia Airways** received its second of two ordered -343Es (SN 1378).

Airbus A380. No A380s were delivered in January, but **Airbus** has four completed A380s on the ramp. **British Airways**' first -841 (SN 121), another **Emirates** -861 (SN 123), and a **Korean** -861 (SN 126) were recently ferried from Toulouse, France, to Lemwerder, Germany for completion. **Emirates** -861 (SN 132) was being readied for its first flight.

Boeing

Boeing 737NG. Boeing delivered 32 737s in January, including three -823/Ws (SN 29571, 31161 & 33227) to **American Airlines**. The 737s were sold to **Wells Fargo**, trustee, and the airline leased them back. **Southwest Airlines** received three -8H4/Ws (SN 35964, 36634 & 36638). Three airlines accepted two 737s each: **United Air Lines** bought two -924ER/Ws (SN 31644 & 36599), **China Southern Airlines** accepted two -81B/Ws (SN 38936 & 38937), and **Lion Air** received its 13th and 14th -8GP/Ws (SN 38635 & 38727). **GECAS** took delivery of two -86N/Ws (SN 38035 & 41257) and leased them to **Solaseed Air** and **SAS**, respectively. In Europe, **airberlin** received its 66th -86J/W (SN 37774) and leased it to **Nok Air**, Thailand. **Air Europa** accepted -85P/W (SN 36591), and **TUI Travel PLC** leased -8K5/W (SN 37243) to **Thomson Airways**. **Aviation Capital Group (ACG)** leased -8JP/W (SN 38881) to **Norwegian Air Shuttle**, which also acquired its 34th -8JP/W (SN 39019) from its own backlog. Two Turkish airlines acquired 737s in January. **Pegasus** received the 36th of 41 ordered -82R/Ws (SN 40014), and **Turkish Airlines (THY)** bought -8F2/W (SN 40987). In Asia, **Xiamen Airlines** purchased -85C/W (SN 38398), **Hainan Airlines** acquired -84P/W (SN 39195), and **Shanghai Airlines** received -86D/W (SN 39302). **Shandong Airlines** leased -85N/W (SN 39329) from **Babcock Brown Asset Management (BBAM)**, and **AWAS** leased the third -81D/W (SN 39432) to **Skymark Airlines**. The Japanese LCC now operates 28 737NGs. **Malaysia Airlines** took delivery of its 15th -8H6/W (SN 40142), and **China Eastern Airlines** leased -89P/W (SN 40951) from **Avolon**. **Air China** accepted one of two -700s to be delivered in January, -79L/W (SN 41091), while **Boeing Business Jet** bought the second -7GE/W-BBJ (SN 41375). In the Americas, **WestJet** acquired its 101st -8CT/W (SN 39085), **GOL Airlines** received -8EH/W (SN 39611), and the U.S. Navy accepted its sixth production P-8I Poseidon -8FV/W (SN 40817).

AWAS leased two new 737-800s to **Norwegian Air Shuttle** in February. The planes came from **AWAS'** new order pipeline, and were the fifth and sixth new -800s that **AWAS** had placed with **Norwegian**. **AWAS** leased a sixth new -800 NG to Latin America's largest low cost airline, **GOL**. The aircraft was delivered to **GOL** by **Boeing** in February, and was sold to **AWAS** for lease-back. The two parties signed a purchase and leaseback (PLB) contract in March 2011 for five aircraft. It was delivered in August 2012. This sixth 737 was part of an expansion to the original PLB transaction. **AWAS** delivered the fourth of five planned -800s to **SpiceJet** in late January.

Corendon Airlines, Turkey, signed a 5-year lease agreement with **Air Lease Corporation** for one ex-**airberlin** 737-86J/W (SN 32920). The 737 was handed over in February. **Corendon Airlines** is a regional carrier operating 30 routes out of Antalya Airport, Turkey.

Boeing 747. Boeing delivered no 747-8s in January, however, several new 747-8s are parked on the ramp. One **Cargolux** -8R7F (SN 35808), two **Nippon Cargo** -8KZFs (SN 36141 & 37394) and ex-**Atlas Air**- allocated -87UF (SN 37564) are at **Paine Field**, Everett, Washington. **Boeing** ferried **Volga-Dnepr/Air Bridge Cargo** -8HVF (SN 37669) to Marana, Arizona.

Boeing 767. **UPS-United Parcel Service** received its 52nd -34AF (SN 37862) in January. The airline has seven more on order.

Boeing 777. Boeing delivered six 777s in January. **American Airlines** accepted its third extended range -323ER (SN 41668) in January. The airline received bankruptcy court approval to take delivery of

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its fourth -323ER (SN 33522) in February and its fifth -323ER (SN 31546) in March. **Emirates** took delivery of its 52nd and 53rd of 120 -31HERs (SN 35603 & 41085). **Etihad Airways** received its 13th -3FXER (SN 39688) and its second -FFX freighter (SN 39692). **Qatar Airways** accepted its 19th of 25 -3DZERs (SN 41741).

Regional Jet

Bombardier delivered CRJ900 NextGen (SN 15288) to **China Express Airlines** in January. Another **Garuda Indonesia** CRJ1000 NextGen (19030) was readied for delivery in January.

Embraer. The manufacturer delivered two EMBRAER 190-200 IGWs (E195) (SN 19000587, & 19000595) to **Lufthansa/Air Dolomiti** in January. **Azul Linhas Aereas** received another E195 (SN 19000588). The airline leased two E195s (SN 19000590 & 19000592) from **GECAS** in December. **Kenya Airways** took delivery of one EMBRAER 190-100 (E190) (SN 19000594). **GECAS** leased a second ex-**Republic** E190 (SN 19000231) to **Myanmar Airways**, the flag carrier of Myanmar.

Boeing 787. Boeing did not deliver any 787s in January. The manufacturer warned its customers that near-term deliveries of 787 Dreamliners would be delayed, perhaps for more than three months. The company continues to build 787s at a rate of five a month and is storing them at its cramped Everett facility. Several runways were closed and packed with 787s that needed post-production modifications prior to the battery problems. Boeing was ready to start 25 hours of flight testing with one 787, under strict supervision by the **FAA**, to search for the root-cause of the battery failures. Additional hours of testing could be approved by the aviation regulator if necessary.

Sukhoi Civil Aircraft Company (SCAC) delivered a second Sukhoi Superjet 100 (SN 95020) to the Russian air carrier **Yakutia** on January 31. The plane was ferried from Ulianovsk to **Yakutia's** base in Yakutsk in the North-East of Russia. The first **Sky Aviation** Sukhoi Superjet 100 (SN 95022) was delivered to **Jakarta Halim Perdanakusuma Inter-national Airport**, Indonesia, on February 27. The aircraft was the first of twelve SSJ100s ordered by the Indonesian carrier. The airplane was built by SCAC in its Komsomolsk-on-Amur assembly line. The aircraft's interior was installed and the plane was painted at Ulianovsk, Russia. **Lao Central Airlines'** first Sukhoi Superjet 100 (SN 95026) was delivered at Vientiane, the Lao People's Democratic Republic, on February 15, 2013. The aircraft was the first SSJ100 to be delivered to a Southeast Asian customer. **Lao Central** plans to operate its three SSJ100s on domestic and international routes from Laos to Bangkok, Hanoi, Ho Chi Min City, Singapore and other destinations in Southeast Asia. **Lao Central** signed a contract for three 93-seat SSJ100s in March 2011 and optioned more six aircraft.

Turboprop Aircraft

ATR. **Alpha Star**, Saudi Arabia took delivery of ATR 42-600 (SN 859) in January. The **Turkish Navy** accepted two ATR 72-600s (SN 1021 & 1030). They will be converted into maritime patrol aircraft. The first airplane (SN 1021) was originally allocated to **Caribbean Airways**. **Nordic Aviation Capital (NSC)** leased one -600 (SN 1069) to **Air KBZ**, Myanmar. NAC will lease a second -600 to **Air KBZ** in June. The airline operates four ATR 72-500s on domestic and regional routes. **Villa Air**, the Maldives, leased its first -600 (SN 1069) from **GECAS**. The airline operates commercially as **FlyMe**, and has two ATR 42-500s deployed on domestic routes in the archipelago. The new generation ATR 72-600 will

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allow **Villa Air** to expand the airline's fleet and boost service from Maldives's capital Malé to Maamigili, Gan, and Dharavandhoo.

At the End of December, GECAS leased one -600 (SN 1064) to **Jet Airways/JetKonnnect** and leased one -600 (SN 1066) to **Azul Linhas Aéreas Brasileiras**. **Intersky** took delivery of its first ATR 72-600 (SN 1038). It will receive its second -600 (1042) in March. The airplanes were built for **Caribbean Airlines** and were redirected to **Intersky**.

Nordic Aviation Capital leased one ATR 42-600 (SN 1004) to **Seacons Trading** in February. The airplane will be operated by **Jhonlin Air Transport**, Indonesia.

Bombardier delivered one Dash 8Q-402 NextGen (SN 4430) to **All Nippon Airways/ANA Wings**, and another Q400 (SN 4431) to **QantasLink** in January. **Yakutia Airlines**, in northeast Russia, bought three Q400s (SN 4159, 4162 & 4171) from **Luxair**. The first one (SN 4162) arrived at **Yakutsk Airport** in mid-January.

Kazakhstan Air Forces took delivery of the first two C295 transports (SN S-093 & S-096) that it ordered in 2012. The **Kazakhstan Ministry of Defence** placed a firm order for two C295s and reserved six options. They will be confirmed in the coming years. The aircraft were formally handed over in Seville before being ferried to Almaty, Kazakhstan, where they will be based. These are the first **Airbus Military** aircraft to enter the CIS regional market. Both aircraft will be used on transport missions throughout the nation's vast territory. The purchase contract provided a service support package for spare parts and ground support equipment.

Viking Air delivered one DHC-6-400 (SN 864) to **Caverton Helicopters**, Nigeria, in January.

The Last Airbus Military C212-400 aircraft that was built in Spain was delivered to the **Vietnam Marine Police**. The C212 (SN 482) was the **Marine Police's** third and final aircraft. In late December, it was flown to **SAAB** at Slavsta, Sweden, for installation of the mission equipment. The **Marine Police's** second C212 (SN 481) was ferried from Sweden to Vietnam in early January. The airframer said, "This delivery marks the end of more than 40 years of continuous production of the C212 - one of Spain's best-known aerospace products - at the **Airbus Military** final assembly line in Seville, Spain." The aircraft made its maiden flight in 1971, and **CASA** (later **EADS-CASA** and **Airbus Military**) built 477 C212 Aviocars that were delivered to 92 different operators. The three countries with the largest C212 fleets are Indonesia (70), the USA (37), and Spain (26). Four different variants of the Aviocar were manufactured, ending with the C212-400. **Dirgantara Indonesia** continues to produce its upgraded version, the NC212, which was launched in November 2012. "The **Airbus Military** final assembly line will now focus on the production of the C295 and CN235 aircraft in both transport and mission configurations, as well as on the increasing activity on the A400M assembly line," the manufacturer said.

Antiques and Other Junque

Japanese Airlines Delay Retirements. Japan's flag carrier, **Japan Airlines (JAL)** may keep two 767s in its fleet past the scheduled retirement in fiscal 2013, ending March 2014. The airline will have to make adjustments to its 787 flight operations after March 1, 2013, if the grounding continues. **JAL** has seven 787-8s in its fleet and another 18 -8s and 20 787-9s on order. **All Nippon Airways (ANA)** was

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considering keeping an A320 past its scheduled retirement in March. **ANA** wanted to advance the delivery of three 777 aircraft which were due between April 2013 and March 2014. **ANA** and **JAL** together own half of the world's 787s.

Accidents and Safety

From Aviation Safety Foundation

Tunis Air Airbus A320-211, (TS-IMB, SN 119) was damaged upon landing at **Tunis-Carthage Airport**, Tunisia, on February 6. The nose landing gear collapsed after the airplane landed in gusty wind conditions. The Airbus came to rest on the concrete surface of the runway. The airplane was 22.5 years old and may be written off due to its minimal book value.

South Airlines Antonov 24 (UR-WRA, SN 37308709) crashed 2 kilometers west of **Donetsk Airport**, Ukraine, on February 13. There were 36 passengers and eight crew members on board, and the **State Service of Emergency Ukraine** reported that five people were killed. The airplane was operating a charter flight carrying football fans from Odessa to Donetsk.

Pakistan International Airlines Boeing 737-33A (AP-BEH, SN 25504) was damaged in a landing accident at **Muscat-Seeb Airport**, Oman, on February 11. None of the 108 persons on board the plane were injured. Upon landing the left hand main gear folded sideways and the 737 came to rest on its left wing and engine. The 20.5 year old airplane may be written off and replaced with something newer.

The Republique de Guinée CASA CN-235-220 (3X-GGG, SN N.020) crashed near Charlesville, Liberia, on February 11. All 11 occupants were killed, including, General **Souleymane Kelefa Diallo**, the head of Guinea's armed forces, Guinea's **Defense Ministry** said. The CN-235 airplane crashed into forested sloping terrain as it was on final approach to **Monrovia-Roberts International Airport**, Liberia.

Pacific Coastal Airlines Beechcraft 1900C (C-FPCO, SN UB-52) skidded sideways upon landing at Blue River, BC, on February 9, departed the runway and ran into a large snow bank. The crew escaped serious injury, but the airplane was substantially damaged. Its nose gear collapsed, and both propellers and the right main gear were damaged. The B-1900C was 27 years old when it crashed.

Carpatair ATR-72-200 (YR-ATS, SN 533) ran off the runway at **Roma-Fiumicino Airport**, Italy, on February 2. The airplane landed during strong cross wind conditions and stopped in the grass next to the runway. The right main gear collapsed damaging the fuselage and the number 2 engine's propeller blades. Four of the 46 people on the airplane were injured. **Carpatair**, Romania, was operating Italian domestic flights for **Alitalia**.

SCAT Canadair CRJ-200 (UP-CJ006, SN 7413) was destroyed in a landing accident on January 29. All 16 passengers and five crew were killed when the plane came down near the village of Kyzyltu, to the northeast of the **Almaty Airport**, Kazakhstan.

Kenn Borek Air de Havilland Canada DHC-6 Twin Otter (C-GKBC, SN 650) crashed in the Queen Alexandra Range, Antarctica, on January 23. The plane was flying from the South Pole to the Italian

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Zucchelli research station at Terra Nova Bay when it went down for unknown reasons. The three people on board were killed.

In Late February, the Federal Aviation Administration chief, **Michael Huerta**, said **Boeing** could not return the 787 Dreamliners to passenger service without extensive testing and certification of the fix to the lithium-ion battery problem. **Boeing** formally proposed a solution to the **FAA** but Mr. **Huerta** said, "Once we approve the plan, then we have to go through the process of actually implementing the plan, which will involve a great deal of testing, a great deal of further analysis and re-engineering before these planes are back in the air." It was expected that the extensive testing, etcetera, would take several weeks of work after the **FAA** OKs the modifications. In the past, the redesign, testing and installation of a new generation of batteries would take up to a year. Intense pressure to move faster was coming from **Congress**, **Boeing**, the airlines, and government agencies, which were pushing from all directions, but a solution may still be months away. Optimists suggest that 787s could be flying passengers as early as late April or May. There was no fixed time line because the corrections may not fully solve the problem. The **GS Yuasa** battery was manufactured to specification from French subcontractor **Thales**, which designed some of the electrical system, but **Boeing** assumed responsibility for the design and for the testing of the revamped battery system. The Dreamliner manufacturer was addressing "a handful of potential areas of probable cause [within the battery]," Mr. **Huerta** said. He told **Congress** that **Boeing's** fixes mitigate the impact of battery overheating by re-engineering of the battery design to reduce the possibility of a battery cell failure. The design also prevented an overheating cell from heating the adjacent cells, and the battery compartment was designed to contain any battery incident that may endanger the airplane. **Boeing** wants to install sensors that will monitor the voltage and temperature within each individual cell, also to build ceramic-plate thermal barriers between cells, to place the battery in a stronger containment box, and to better vent any flammable vapors outside the airplane. It has not yet found why the batteries overheat. The manufacturer was granted permission to fly two flight tests to gather data about the battery and electrical system performance while the aircraft is airborne **Boeing** said. It has not requested any additional test flights for March. The **National Transportation Safety Board (NTSB)** determined that one cell in the battery overheated, causing a short circuit which led to a thermal runaway condition and this was transferred to other cells in the battery. Eventually battery temperature rose to 500 degrees Fahrenheit. Specifically, the **NTSB** said multiple short-circuits in one of the battery's eight cells touched off an uncontrolled chemical reaction at high temperatures that spread to other cells and ended up with the 63-pound battery in flames. They determined that the condition was not caused by an external short circuiting or mechanical impact damage. The battery may need to be re-certified, which will require extensive re-working of the 50 delivered 787s, as well the dozens of 787s that are parked at **Boeing**. This re-work will take a significant amount of time to accomplish. The **Department of Transportation** was talking about re-certifying the airplane which will also be lengthy. **Boeing** said it tested each component inside the battery before it launched 5,000 hours of testing the whole battery in the laboratory. It tested the overall electrical system for more than 25,000 hours. The company severely abused the batteries including baking the battery to induce overheating, crush testing and puncturing a cell with a nail to induce a short circuit and battery failure. So far they have not been able to exactly replicate the failure in the **Japan Airlines** battery. The **NTSB** was investigating whether tiny fiber-like formations, called dendrites, could have caused the short circuits. The dendrites accumulate as a battery is charged and discharged.

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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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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SMALL TRANSPORT AIRCRAFT CATALOG

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

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

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

Airline Association (RAA):

Aviation:

DOT:

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ATR 42-300

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

Specifications	
Accommodations	
Passengers*	46
Pilot	2
Cabin Attendants	1
Powerplant	
2 Pratt & Whitney PW120 Turboprops	1,800 SHP / 1,342 kW
Hamilton Propellers	4 blades
External Dimensions	
Length	74 ft 5 in
Wingspan	60 ft 7 in
Height	24 ft 11 in
Weight	
Empty	48,815 lb
Max Ramp	56,155 lb
Max Takeoff	53,510 lb
Max Landing	22,875 lb
Max Ramp	10,325 lb
Max Takeoff	9,920 lb
Max Landing	40.53 lb / sq ft
Max Ramp	10.23 lb / cu ft

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

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

Avionics: EDZ 820 Electronic Flight Instrument System (EFIS) - 4 CRT's for dual Attitude and Heading Reference Systems (AHRS), Dual Autopilot, Dual Computer (ADC), 1 CFZ 600 Automatic Flight Director, Dual King Gold Crown VHF Nav, Radios, DME, Radio Altimeter, Honeywell P-800 Weather Radar.

Price List

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

ATR 42-300 85-99 2.0

Direct Operating Costs (\$ per block hour)

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

Note: Data from DOT Airline Reports.

ATR 42-300

PAYLOAD VS. RANGE

Range (nm)

Distance (nm)

ATR 42

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

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

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

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

TYPICAL CABIN CONFIGURATION

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

US \$ 350.00

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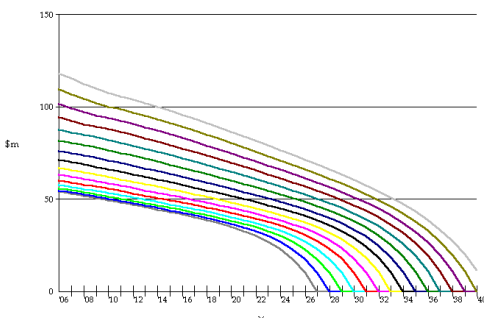
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TAV reports current fair-market values by year of build and projects the future value of 116 transport category aircraft. The future values are based on an economic model that projects the values based on the earning stream of approximately 130 different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

CAVAS Graph



Profit & Loss Report

Aircraft Type	Period	1	2	3	4	5	6
REVENUES (US\$)							
Passengers	49,328,754	49,270,739	49,212,559	49,154,213	49,095,701	49,037,189	48,978,677
Freight & Mail	8,879,176	8,868,733	8,858,261	8,847,758	8,837,226	8,826,714	8,816,202
Other Revenue	986,575	985,415	984,251	983,084	981,914	980,744	979,574
TOTAL OPERATING REVENUE	59,194,505	59,124,887	59,055,070	58,985,055	58,914,841	58,844,627	58,774,413
VARIABLE EXPENSES							
Fuel	6,918,975	6,917,340	6,915,670	6,913,977	6,912,265	6,910,533	6,908,781
Landing Fees	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823
Enroute Charges	392,440	392,440	392,440	392,440	392,440	392,440	392,440
Pax Commissions	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313
Freight Commissions	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876
Food & Supplies	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194
Passenger Liability Insurance	379,590	379,590	379,590	379,590	379,590	379,590	379,590
TOTAL VARIABLE COST	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212
SEMI-VARIABLE EXPENSES							
Crew Salaries & Expenses	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760
Maintenance & Engineering	587,650	587,650	587,650	587,650	587,650	587,650	587,650
TOTAL SEMI-VARIABLE COST	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410	5,765,410
TOTAL OPERATING COST	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622	29,208,622
OPERATING PROFIT OR LOSS	29,985,883	29,916,265	29,846,448	29,776,343	29,706,126	29,635,909	29,565,692
D-CHECK ADJUSTMENT							
Cumulative Hours	4,830	9,650	14,459	19,257	24,045	28,833	33,621
Cumulative Dollars	315,000	0	0	0	0	0	0
ADJUSTED CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646

Profit & Loss Report

Aircraft Type	Period	1	2	3	4	5	6
FIXED EXPENSES							
Station Overhead	346,597	345,923	345,249	344,575	343,901	343,227	342,553
Maintenance Burden	176,295	351,824	526,586	700,581	873,810	1,047,039	1,220,268
Other Overhead	0	0	0	0	0	0	0
TOTAL FIXED COST	522,892	697,747	871,835	1,045,156	1,217,711	1,390,266	1,562,821
TOTAL OPERATING COST	31,464,497	32,185,749	32,903,601	33,618,052	34,329,104	35,039,156	35,749,208
General and Admin. Allocation	1,573,225	1,609,287	1,645,180	1,680,303	1,716,455	1,752,607	1,788,759
TOTAL COST	33,037,722	33,795,036	34,548,781	35,298,355	36,045,559	36,791,763	37,537,967
OPERATING PROFIT OR LOSS	26,156,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
D-CHECK ADJUSTMENT							
Cumulative Hours	4,830	9,650	14,459	19,257	24,045	28,833	33,621
Cumulative Dollars	315,000	0	0	0	0	0	0
ADJUSTED CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,329,851	24,506,290	23,686,100	22,869,282	22,052,464	21,235,646

Select Aircraft Type

Available Aircraft

- Airbus A300B4-600R
- Airbus A300B4-600RF
- Airbus A310-200
- Airbus A310-200F
- Airbus A310-300
- Airbus A310-300F
- Airbus A318
- Airbus A319-100
- Airbus A320-100
- Airbus 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
2007	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
2008	52.85	53.49	54.70	56.56	58.99	62.01	65.63	69.95	74.86	80.37	85.92	92.18	99.12	106.73	115.25
2009	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
2010	50.49	51.19	52.46	54.29	56.70	59.67	63.24	67.50	72.44	77.95	83.52	89.34	95.81	103.44	111.63
2011	49.28	49.99	51.27	53.10	55.51	58.47	62.03	66.28	71.20	76.70	82.36	88.26	94.90	102.83	111.02
2012	48.05	48.77	50.05	51.88	54.29	57.24	60.79	65.03	70.03	75.52	81.26	87.24	94.16	102.39	110.58
2013	46.80	47.52	48.80	50.63	53.04	56.00	59.54	63.78	68.77	74.26	80.00	85.98	93.19	101.62	109.81
2014	45.53	46.25	47.53	49.36	51.77	54.72	58.26	62.50	67.48	72.96	78.70	84.68	92.09	100.72	108.91
2015	44.25	44.97	46.25	48.08	50.49	53.44	56.98	61.22	66.20	71.68	77.42	83.40	90.91	99.74	107.93
2016	42.96	43.68	44.96	46.79	49.20	52.15	55.69	59.93	64.91	70.39	76.13	82.11	89.72	98.75	106.94
2017	41.67	42.39	43.67	45.50	47.91	50.86	54.40	58.64	63.62	69.10	74.84	80.82	88.53	97.76	105.95
2018	40.38	41.10	42.38	44.21	46.62	49.57	53.11	57.35	62.33	67.81	73.55	79.53	87.34	96.77	104.96
2019	39.09	39.81	41.09	42.92	45.33	48.28	51.82	56.06	61.04	66.52	72.26	78.24	86.25	95.78	103.97
2020	37.80	38.52	39.80	41.63	44.04	46.99	50.53	54.77	59.75	65.23	70.97	76.95	85.16	94.69	102.88
2021	36.51	37.23	38.51	40.34	42.75	45.70	49.24	53.48	58.46	63.94	69.68	75.66	83.87	93.40	101.59
2022	35.22	35.94	37.22	39.05	41.46	44.41	47.95	52.19	57.17	62.65	68.39	74.37	82.58	92.11	99.30
2023	33.93	34.65	35.93	37.76	40.17	43.12	46.66	50.90	55.88	61.36	67.10	73.08	81.29	90.82	98.01
2024	32.64	33.36	34.64	36.47	38.88	41.83	45.37	49.61	54.59	60.07	65.81	71.79	79.90	89.43	96.62
2025	31.35	32.07	33.35	35.18	37.59	40.54	44.08	48.32	53.30	58.78	64.52	70.50	78.61	88.14	95.33
2026	30.06	30.78	32.06	33.89	36.30	39.25	42.79	46.93	51.91	57.39	63.13	69.11	77.22	86.75	93.94
2027	28.77	29.49	30.77	32.60	35.01	37.96	41.50	45.64	50.62	56.10	61.84	67.82	75.93	85.46	92.65
2028	27.48	28.20	29.48	31.31	33.72	36.67	40.21	44.35	49.33	54.81	60.55	66.53	74.64	84.17	91.36
2029	26.19	26.91	28.19	30.02	32.43	35.38	38.92	43.06	47.94	53.42	59.16	65.14	73.25	82.78	89.97
2030	24.90	25.62	26.90	28.73	31.14	34.09	37.63	41.77	46.65	52.13	57.87	63.85	71.96	81.49	88.68
2031	23.61	24.33	25.61	27.44	29.85	32.80	36.34	40.48	45.36	50.84	56.58	62.56	70.67	80.20	87.39
2032	22.32	23.04	24.32	26.15	28.56	31.51	35.05	39.19	43.93	49.41	55.15	61.13	69.24	78.77	85.96
2033	21.03	21.75	23.03	24.86	27.27	30.22	33.76	37.90	42.54	47.92	53.66	59.64	67.75	77.28	84.47
2034	19.74	20.46	21.74	23.57	25.98	28.93	32.47	36.61	41.25	46.63	52.37	58.35	66.46	75.99	83.18
2035	18.45	19.17	20.45	22.28	24.69	27.64	31.18	35.32	40.09	45.47	51.11	57.09	65.20	74.73	81.92
2036	17.16	17.88	19.16	20.99	23.40	26.35	29.89	34.03	38.80	44.18	49.81	55.79	63.90	73.43	80.62
2037	15.87	16.59	17.87	19.70	22.11	25.06	28.60	32.74	37.51	42.89	48.52	54.50	62.61	72.14	79.33
2038	14.58	15.30	16.58	18.41	20.82	23.77	27.31	31.45	36.22	41.60	47.23	53.21	61.32	70.85	78.04
2039	13.29	14.01	15.29	17.12	19.53	22.48	26.02	30.16	34.93	40.31	45.94	51.92	60.03	69.56	76.75
2040	12.00	12.72	14.00	15.83	18.24	21.19	24.73	28.87	33.64	39.32	44.95	50.93	59.04	68.57	75.76
2041	10.71	11.43	12.71	14.54	16.95	19.90	23.44	27.58	31.72	37.40	42.92	48.80	56.91	66.44	73.45
2042	9.42	10.14	11.42	13.25	15.66	18.61	22.15	26.29	30.43	36.11	41.63	47.51	55.62	65.15	72.16
2043	8.13	8.85	10.13	11.96	14.37	17.32	20.86	24.90	29.04	34.72	40.24	46.12	54.23	63.76	70.47
2044	6.84	7.56	8.84	10.67	13.08	16.03	19.57	23.61	27.65	32.73	38.25	43.76	51.87	61.40	68.78
2045	5.55	6.27	7.55	9.38	11.79	14.74	18.25	22.26	26.30	31.38	36.89	42.40	50.51	60.03	67.29
2046	4.26	4.98	6.26	8.09	10.50	13.55	17.06	20.57	24.61	29					



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Small Transport Aircraft Catalog:

\$350 US per Year (Current)

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

Samples of all publications are available upon request.

Publication Form

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