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Newsletter

Market Comment

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Both Airbus and Boeing Delivered Record Numbers of Airliners in 2013. The two airframers provided another new record of 1,274 aircraft to airlines, lessors, governments and VIP customers, which was more than 7 percent above the previous high of 1,189 airliners shipped between them in 2012. **Boeing** set the previous record in 1999 when it delivered 620 aircraft. **Airbus** delivered 626 aircraft, nearly 7 percent more than it did in 2012, beating **Boeing's** peak for the first time, but falling 22 units short of the American manufacturer's new record of 648 shipments. **Boeing** had a slight advantage because it was still delivering 787s that were completed in 2012, but not yet ready for service. **Airbus** completed the most single-aisle narrowbodies, and pushed out 493 A320 Family aircraft from its three assembly lines in Hamburg, Tianjin and Toulouse. **Boeing** shipped 440 737s from its single production plant in Renton, again a 6 percent improvement over the 415 737s built in 2012.

The two companies each reached new highs for annual sales as well, winning 2,858 net orders between them. **Airbus** won the most orders; 1,619 firm sales and lost fewer orders (116) for a net total of 1,503. **Airbus** set the previous record in 2011 with 1,419 net orders. **Boeing** sold 1,531 new airplanes but lost 176 existing orders for a net total of 1,355. **Boeing's** previous best year was 2012 with 1,338 gross orders, but cancellations took the net total down 136 units to 1,202. Its last best year was 2007 with 1,214 net sales. The two manufacturers saw their combined backlog rise by almost a fifth to 10,639 aircraft in the last 12 months.

Airbus and **Boeing** will now work on building the jets that they have sold. **Airbus** sales chief **John Leahy** said "We cannot continue at this level [of orders], but we are continuing to increase production." **Airbus** is now assembling 42 medium-haul A320 family jets per month and **Boeing** plans to increase the 737 build rate from the current 38 a month to 47 by 2017. Once it has completed the transition to the A320neo, **Airbus** may increase its production past 42 per month in 2018, and even more in the following years. Suppliers said they are thinking ahead to production rates as high as 52 per month, but **Airbus** said the supply chain was not yet ready for 44 per month. Mr. **Leahy** said the market would ultimately bear over 50 A320neos and up to 14 A350s per month, but it currently plans to build 120 A350s a year by the end of 2018. **Airbus** said it could surpass **Boeing's** output when it ramps up A350 production in 2017 or 2018. However by that time, both **Boeing** 787

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lines will be at capacity and building 10 per month as well. **Airbus** intends to certify and deliver the first A350 by year-end. The manufacturer expects to build 30 A380s per year for the next three years, up from the 25 completed in 2013. Sales of the world's largest passenger jet were buoyed last year by **Emirates'** 50-plane order, and the manufacturer expects **Doric Leasing** to finalize its commitment for 20 A380s in the first quarter. The airframer believes the A380 program will break even in 2015.

Boeing has been less vocal about its production plans for 2014, but has said in the past that it was pushing build rates ever upward, except for the 747-8. They cut the jumbo jet down to 1.75 per month until the cargo market improves. **Boeing's** 747 Freighter has outsold the passenger version by 68 to 51, as of December 31. The 747-8F was delivered first and delivered at greater numbers; the backlog stands at 34 -8Is and 21 -8Fs. The production of the 767 will remain flat as the civil 767 freighter is replaced with the KC-46 military tanker on the assembly line. One 767-300ER, 44 767-300Fs and four KC-46s are in backlog. The **Air Force** will acquire the 179 KC-46s at a rate of approximately 12 per year stretching production until 2027. In October 2013, **Boeing** announced that it would build an average of 42 737s per month by mid-2014 and would ramp up production again to 47 per month by 2017, a rate of 564 deliveries per year. **Boeing** started its 100-777s-per-year (8.3 per month) completion rate in January 2013. It will build through its backlog of 314 777-200s and -300s in little more than three years, which is three years before the 777X enters service. The 787 program has 916 outstanding orders, or 7.6 years at the anticipated build rate of 10 per month.

In 2013, **Airbus** sold 876 more A320neo Family aircraft, for a backlog of 2,610. It also sold 377 more A320ceo aircraft, but lost 91 existing orders to cancellations, or modifications to the neo model. The current engine options A320 backlog stands at 1,688, for a program total of 4,298. In the same period, **Boeing** won orders for 509 737 MAX aircraft, and 699 Next Generation 737s. It lost 352 737NGs and 190 of those were modified to the 737 MAX, for a net total of 699 MAX and 347 NG aircraft. At the end of the year, **Boeing's** MAX backlog stood at 1,763 and the number of undelivered 737NGs was 1,917 (total of 3,680), so **Airbus** is currently outselling **Boeing** in the single-aisle market by 17 percent, and it is outselling the MAX with the neo by 48 percent. The motivation for the new orders is the anticipated fuel efficiency of the new technology aircraft. Fuel

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represents a third or more of every airline's operating costs. Prices are forecast to remain stable with **Brent** crude oil hovering at \$100 a barrel. Most of the world's major airlines have already ordered new tech aircraft to replace their old 737 classics, MD-80s or early model A320s. As the airlines fatten on record profits due to record load factors, they can afford to replace their old, inefficient gas hogs, which bodes well for the A320neo and 737 MAX.

What happens when the economy sinks again, and fewer people fly? What happens if fuel supplies tighten again and prices spike? Will the airlines buy greater numbers of efficient planes, or fewer? It seems both the record numbers of sales and record numbers of deliveries seems unsustainable. Both manufacturers have overbooked their delivery slots, giving them some wiggle room to adjust their production. Have the airline and aerospace managers forgotten the several recessions of the last two decades? **Boeing's** sales data shows several instances when sales dropped to nearly 250 per year in 2003 and 2009, after attaining record highs of 708 in 1996 and 1,179 in 2007. Deliveries slumped precipitously from a high of 620 in 1999 to 281 in 2003, and again to 375 in 2008. The forecasts are all rosy, but history offers valuable lessons for the airlines and manufacturers to heed.

Airbus Orders

Airbus ended 2013 with the sales of 211 aircraft in December, from its full product line ranging from its single-aisle A320 Family to the double-deck A380. The company delivered a record 64 commercial jets during the month, which raised the year's total aircraft production to 626. Leading the month's orders was **Emirates Airline's** firm contract for 50 more A380s that was announced at the **Dubai Airshow** in November. Also, **AirAsia X** signed for another 25 A330-300s, which was the largest A330 order received by **Airbus** from a single purchase agreement. **Air Caraïbes** ordered three A350-1000s, and an undisclosed customer bought four A330-200s. **Turkish Airlines** ordered seven more A321neos, a new customer, **Z/C Aviation Partners One**, bought one A319ceo for lease to **American Airlines**, and an unnamed corporate customer acquired one ACJ320 VIP jet. An undisclosed customer committed to

Airbus Orders, Deliveries and Backlog December 2013

DEC ORD	DEC DEL	DEC CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-0-	79	79	-0-
			A319		
16	2	-6	1,526	1,395	131
			A320		
86	34	-36	6,611	3,544	3,067
			A321		
27	12	-5	1,977	877	1,100
			A330		
29	13	-0-	1,313	1,046	267
			A350		
3	-0-	-5	812	-0-	812
			A380		
50	3	-5	304	122	182
This Month			This Year		BL
211	64	-57	1,503	626	5,559

Airbus sold 13,815 aircraft and delivered 8,256 as of December 31, 2013. One hundred sixteen orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.

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buy 15 A319s, 65 A320s and 20 A321s. The order was split 40:60 between the current and new engine option versions. A second unidentified customer placed an order for 20 A320neo jetliners. The sales drove A320neo Family backlog to 2,610 units, A380 orders to 304 and the number of A330 purchases to 1,313. Before accounting for cancellations, **Airbus** completed the year with 1,619 gross aircraft orders and net bookings totaling 1,503 for 2013 – representing industry records both in unit numbers and value. **Airbus** delivered 48 A320 Family aircraft, 13 A330s and three A380s in December and 626 aircraft to 93 customers in 2013, surpassing its 2012 delivery total of 588. **Airbus** ended the year with the highest-ever industry-wide backlog of 5,559 aircraft worth \$809 billion at list prices, representing nearly nine years production.

Airbus Exceeded All of Its Commercial Targets in 2013, when it handed over 493 A320 Family aircraft, 108 A330, and 25 A380 to 93 customers, of which 15 were new. It set a new industry record of 1,619 gross orders, including 377 A320ceo, 876 A320neo, 77 A330, 239 A350 XWB, and 50 A380s, beating the industry's previous record set in 2011 by 11 aircraft. **Airbus'** gross order intake was list priced at \$240.5 billion. Aircraft deliveries rose for 12 years in a row and beat the target set in January 2013. Production increased by 9.3 percent and surpassed its previous record of 588 by another 38 aircraft. At year's end, **Airbus** had won 51 percent of the gross market share for aircraft above 100 seats. Because customers are trading up towards larger aircraft in all market segments (A321, A330-300, A350-1000 and A380), per unit revenues are rising, adding to **Airbus'** lead in both single-aisle and widebody aircraft markets. Since the New Engine Option was launched in 2012, **Airbus** has sold 2,016 A320neo Family aircraft and more than 1,000 A320ceos. The A350 XWB won its first order from Japan, and the A380 continued to dominate the VLA-Very Large Aircraft market with 50 new orders. The first A350 XWB flew in 2013 and certification is targeted for the third quarter of 2014. The first production A350 will enter service by the end of the year. **Airbus** launched new longer range and regional variants of the A330 and is now building the venerable aircraft at a record high rate of 10 per month. **Airbus Military** delivered seven A330 MRTTs, two A400Ms (to the **French Air Force**) and 22 turboprop aircraft in 2013. **Airbus** President and CEO, **Fabrice Bregier**, said 2014 will be significant with the first flight of the A320neo and the Entry Into Service of the A350 XWB.

Airbus Raised its Average List Prices by 2.6 Percent across its product line, effective on January 1. Prices increased 2.6 percent above the published January 2013 prices. **John Leahy, Airbus** Chief Operating Officer, Customers, said, "Our new 2014 pricing reaffirms the unbeatable value of **Airbus'** modern, fuel-efficient aircraft family. We see continuing strong demand in all aircraft size categories." **Airbus** has sold nearly 14,000 aircraft to more than 360 customers worldwide, and delivered more than 8,000 of them. It is of interest that **Airbus** still offers the A318 although it delivered the 79th and so far last A318 in January 2013. The manufacturer is asking \$71.9 million for the A318, \$85.8 million for the A319, \$93.9 for the A320 and \$110.1 million for the A321. The A319neo will cost \$94.4 million; the A320neo goes for \$102.8 and the A321neo for \$120.5, an average of \$9.3 million extra for the new engine option. The standard A330-200 now lists for \$221.7 million while the slow selling A330-200F freighter is priced at \$224.8 million. The larger A330-300 will cost \$245.6 million to buy. The A350-800 will cost \$260.9 million, while the price tag on the A350-900 rose to \$295.2 million; the sticker on the stretched A350-1000 was stretched to \$340.7 million. The list price of the A380 was increased more than \$10 million to \$414.4 million. The A380 will be list priced at more than half a billion dollars by the end of the decade if **Airbus** keeps raising prices by 2.6 percent per year.

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Airbus Announced a 100-A320 Family Aircraft Order. On December 2, an undisclosed customer committed to buy seven standard A319s, 26 A320s and seven A321s, as well as eight A319neos (new engine option) 39 A320neos and 13 A321neos. The deal was disclosed during **Airbus'** annual results briefing in Toulouse in January. Chief Operating Officer for Customers **John Leahy** also said another undisclosed customer purchased 20 A320neos, and a third unnamed entity acquired four A330-200s. Mr. **Leahy** said the customers will be identified in the next two months or so.

Emirates committed to buy 50 more A380-800s at the **Dubai Airshow 2013**, and signed the firm contract on December 23. The Dubai flag carrier has 44 A380s in service and another 46 on order from previous contracts. The new deal was list priced at \$20 billion although it is assumed that **Emirates** won a substantial discount off the \$400 million list price. The airline now has purchased 140 A380s; more than 46 percent of the 304 A380s sold since the program was launched in December 2000. It received its first A380 in July 2008. **Emirates** President **Tim Clark** said, "The A380 is our flagship aircraft. It is popular with our customers and delivers results for us in terms of operational performance. That is why we have ordered these additional 50 aircraft, to add to our A380 fleet." The airline's current A380s are powered by **Engine Alliance** GP7200s, but it did not specify an engine type for the newest batch. **Emirates** will replace one 777-300ER it uses on one of its three daily flights to London's **Gatwick Airport** with the A380. This will increase capacity on the route by 38 percent and will make **Emirates** the first airline to operate an A380 to **Gatwick**.

European Aeronautical Defense & Space Co (EADS) became **Airbus Group NV** on January 2, in an effort to improve the group's image. The **EADS** acronym was considered to be too long and confusing for effective marketing. **Airbus Group NV** consists of three divisions: **Airbus**, which manufactures commercial airliners, **Airbus Defense and Space**, responsible for defense and space businesses, and **Airbus Helicopters**, formed from **Eurocopter**, which will build civil and military helicopters. In 2015, the Netherlands-registered holding company designation NV will be changed to the pan-European SE corporate designation, and **Airbus** will adopt a single management and reporting system. The name change reflected the supremacy of the commercial jet unit in the face of large defense spending cuts. French and German interests each now own around 12 percent of **Airbus Group**, and the Spanish government holds 4 percent. The group's shareholders are set to approve the name change at the **Annual General Meeting** scheduled for May.

Air Asia X Placed the Launch Ordered for 25 Extended-Range A330-300s on December 18. The airplanes are worth \$6 billion (\$240 million each) at list price, and the first will be delivered in 2015. They will operate non-stop service between the airline's base in Kuala Lumpur, Malaysia, and cities in Europe. **Airbus** said it was the largest single A330 order in its history and it nearly doubles the carrier's firm order total to 51 of the type. **Air Asia X** will also lease another six A330-300s from **International Lease Finance Corporation (ILFC)**. The carrier has 16 A330s in service and also has 10 A350 XWB aircraft on order. The **AirAsia Group** is one of **Airbus's** largest airline customers having now ordered 536 aircraft from the manufacturer. These included 475 A320 Family single-aisle aircraft for **AirAsia's** short-haul operations, plus the 51 A330s and 10 A350-900s for **AirAsiaX**. The twin-engined A330 won 1,313 orders as of December 31.

Air Caraïbes Atlantique Airlines, Guadeloupe and Martinique, signed a firm contract for three **Airbus** A350-1000s valued at \$996 million (\$298.8 million each) at list price. The airline will also lease three

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smaller A350-900s from **International Lease Finance Corp.** The A350s will be delivered from 2016 through 2022. **Air Caraïbes** operates routes between the Caribbean and France with one A330-200 and four leased A330-300s.

Zhejiang Loong Airlines, a Chinese start-up, announced in late December that it firmed up its order for 20 Airbus A320s. The airline will buy 11 A320ceo and nine A320neo aircraft worth around \$1.9 billion at list prices. It signed a Memorandum of Understanding (MoU) at the **Beijing Airshow** in September. **Zhejiang Loong Airlines** is based in Hangzhou, capital city of Zhejiang province in Eastern China. **Liu Qihong**, Chairman of **Zhejiang Loong Airlines**, said, "We are making efforts to play a more important role in building the four-hour transportation circle around Hangzhou, which is advocated by the **Zhejiang Government**. Today (December 29) is a special day for **Zhejiang Loong Airlines** as we start passenger operation and order 20 **Airbus** A320 Family aircraft, which demonstrates our ambition to contribute to the economic and social development of Zhejiang province by providing efficient transportation." The airline launched its operations with two ex-**Capital Airlines Beijing** A320-214s (SN 5008 & 5656). Another four more A320s will be acquired in the first and second quarters of 2014.

Airbus Rolled-Out its Third A350 XWB flight-test aircraft, (SN 002), from the paint shop in Toulouse, on January 2. This was another successful milestone on the path to entry-into-service in the fourth quarter of this year. The plane featured a distinctive "Carbon" signature livery to reflect its primary construction from advanced materials, and was the first of two A350 flight test aircraft to be equipped with a full passenger cabin interior. A350-900 SN 002 will join the flight test fleet in January and will be the first A350 to transport passengers when it undertakes the Early Long Flights (ELF) later in the year. **Airbus** aircraft have featured carbon-fiber composite materials since its introduction 32 years ago with the A310. Now 53 percent of the A350 XWB's airframe is made-up of carbon-fiber reinforced polymer (CFRP), and the plane has **Airbus'** first carbon-fiber fuselage.

The Airbus Final Assembly Line China (FALC) plant in China's northern port city of **Tianjin** has delivered 153 A320 aircraft since it began operation in 2008, according to **Airbus**. **Andreas Ockel**, general manager of **Airbus (Tianjin) Final Assembly Company, Ltd.**, said, "The Tianjin plant delivered 37 A320 aircraft last year. The production efficiency has improved this year with one aircraft being delivered every week." The Tianjin plant was expected to deliver 46 A320 aircraft in 2013. The **Tainjin FALC** completed its first jetliner in May 2009, and it was delivered in June to **Dragon Aviation Leasing** for lease to **Sichuan Airlines**. The 100th Chinese assembled A320 Family jetliner was completed during August 2012 and delivered in September to **Air China**. The Tianjin plant will push forward the assembly of A330 aircraft in 2014, which will be a new focus of **Airbus'** business in China in the next decade, said **Rafael Gonzalez-Ripoll**, **Airbus China** Chief Operating Officer.

Airbus Considering A350 XWB Stretches. The company is looking at increasing the capacity of its 350-seat A350-1000 to counter **Boeing's** newly launched 406-seat 777X aircraft. COO for Customers, **John Leahy**, said **Airbus** was in no rush to design a possible A350-1100 or -1200 model to compete with the 777X, but added, "There is plenty of time to study A350 stretched versions in the future," at the annual **Airbus** news conference in January. Mr. **Leahy** also said that **Airbus** may have to "right-size" the 276-seat A350-800 by adding several seat rows to better compete with the **Boeing** 787-9 in the 250- to 300-seat sector. The -800 is 197 feet (60 meters) long and 10 feet (3 meters) shorter than the A330-300, which it was intended to replace. The 787-9 is 63 meters long, approximately the same size of the

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A330-300. **Airbus** has not sold any -800s since 2009 and the backlog has fallen by two-thirds from its peak because customers converted to the larger -900 model. The -800 was scheduled for service entry in 2016, a year earlier than the -1000, but Mr. **Leahy** would ñlike to deliver [the -800] after the -1000. Mr. **Leahy** complained the -800 was ñnot selling because we're not selling it. The airframer is looking at enlarging the baseline -800 enough to accommodate an extra couple of seat rows ñto sit on top of the 787-9, said Mr. **Leahy**. The 300-seat sector may be a critical battleground, rather than the smaller 250-seat category, currently dominated by the 787-8. **Boeing's** smallest 787, the -8, is more popular than the similarly sized A350-800, with 494 orders. **Airbus** currently has only 56 -800s on backlog, while it has sold ten times as many A350-900s. **Boeing's** backlog of the larger 787-9 stands at 404, 163 fewer than the A350-900.

Airbus is Looking Askance at the possibility of re-engining the A330 to compete in the 250-300 seat market. CEO **Fabrice Bregier** said that re-engining was ñalways an option for our aircraft, but some customers put the idea to **Airbus**. He said ñwe don't implement every idea from our customers, and the A330's attraction is its availability, while a re-engined version would not be ready for some time. So far, **Airbus** has not put a proposal to airlines to create a re-engined A330neo, but **General Electric**, was very aggressive in proposing a GNex-powered A330. The re-engined A330 would dilute sales of the **Rolls-Royce**-powered A350.

Boeing Orders

Boeing Sold 319 New Aircraft in December, including 267 737s, seven 747s, two 767s, 25 777s, and 18 787s. **Flydubai** confirmed its commitment for 75 737 MAX 8s and 11 737-800NGs that was announced at the **Dubai Airshow** in November. The airline retains purchase rights for 25 more MAX aircraft. **British Airways** finalized its commitment for 12 newly launched 787-10s and six more 787-9s. **Cathay Pacific** bought 25 widebodies in December, including one more 747-8F; another three 777-300ERs and its launch order for 21 777-9Xs. **FedEx** announced its order for two more 767-300Fs that were listed as ñunidentified" earlier in the month. The airline has now ordered 48 767Fs and taken delivery of its first four. **Transaero Airlines** bought its first four 747-8I

Boeing December 2013 Orders, Deliveries

DEC ORD	DEC DEL	DEC CANX	TOTAL ORD	TOTAL DEL	BACK LOG
737					
267	42	-1	11,545	7,865	3,680
747					
7	6	-0-	1,537	1,482	55
767					
2	1	-0-	1,110	1,061	49
777					
25	8	-0-	1,544	1,164	380
787					
18	11	-0-	1,030	114	916
This Month			This Year		BL
319	68	-1	1,355	648	5,080

Boeing sold 24,296 aircraft and delivered 19,216 as of December 31, 2013.

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

Sales totals are net – minus 176 cancellations. Boeing sold 1,531 new aircraft in 2013.

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Intercontinentals. They will join a fleet of 20 747-400s. It is the only Russian airline to operate the passenger 747. Five **Unidentified Customers** ordered a total of 49 737 MAX aircraft. Four customers ordered a total of 124 737-800NGs, and one customer purchased eight 737-700NGs. One **Unidentified Customer** committed to buy two 747-8s and another customer ordered one 777-300ER. In 2013, **Unidentified Customers** purchased a total of 438 737s, two 747s, eight 777s and one 787.

Boeing lost only one 737 order in December, for a total of 162 737 cancellations. Customers also cancelled five 747s, eight 777s and one 787 during 2013. The manufacturer sold a total of 1,531 new aircraft this year, including 1,208 737s, 17 747s, two 767s, 121 777s and 183 787s, and lost 176 existing orders, for a net total of 1,355 orders as of December 31, 2013. Its backlog stood at 5,080, at the end of the year.

Boeing Delivered a Record 68 Aircraft in December, including 11 787s. It also handed over 42 737NGs, six 747s, one 767F, and eight 777s. The deliveries of 737s, 747s and 787s reached record highs.

Cathay Pacific Airways Was Asia's 777X Launch Customer with its order for 21 777-9X aircraft valued at \$7.5 billion at current list prices. The 777Xs will be powered by GE9X engines, and will be delivered between 2021 and 2024. The 777X program was launched at the **Dubai Airshow** where it garnered a record 259 orders and commitments worth \$95 billion at list prices. The 777-9X will seat 400 passengers in a three-class cabin. Hong Kong's flag carrier also ordered three more 777-300ERs. It now operates 38 777-300ERs, and has 15 more on order, five 777-200s, and 12 777-300s. It purchased another 747-8F freighter, adding it to its all-**Boeing** cargo fleet of 13 747-400Fs and 13 747-8Fs. The 777-300ERs and 747-8F were valued at \$1 billion at current list prices. The airline also signed a 15-year **OnPoint** solution agreement with **General Electric** to cover the maintenance, repair and overhaul of their GE90-115B and Genx-2B engines. **John Slosar**, CEO of **Cathay Pacific**, said, "Both the 777-300ER and the 747-8 Freighter offer a highly efficient solution on **Cathay Pacific's** ultra-long-haul routes, combining superb operating economics with a significant reduction in emissions. These two aircraft types will form the backbone of our long-haul passenger and freighter fleets through to the end of the decade." **Cathay** is in the midst of renewing its freighter fleet with newer, more efficient airplanes, while also looking to strengthen its position as a market leader in the air cargo business.

Flydubai finalized its order for 75 737 MAX 8s and 11 737-800NGs, valued at \$8.8 billion at list prices. The airline retained purchase rights for 25 more 737 MAXs. **Flydubai** announced the order as a commitment at the **2013 Dubai Airshow**. It was **Boeing's** largest single-aisle airplane order in the Middle East. **Flydubai's** Chief Executive Officer **Ghaith Al Ghaith** commented, "2013 has been a tremendous year for **flydubai**. We have launched 16 new routes, delivered profitability in just three years of operation and launched our Business Class service. The order signifies the maturing of the airline and the strength of our business model as well as support [for] **flydubai's** ambitious growth." To date, the airline has taken delivery of 34 Next-Generation 737-800s, from its prior order for 50 737-800NGs placed at the **2008 Farnborough Air Show**.

Development of the 737 MAX is on schedule with firm configuration of the airplane achieved in July 2013. First flight is scheduled in 2016 with deliveries to customers beginning in 2017. Already a market success, the 737 MAX has accumulated more than 1,700 orders to date. It will have 8 percent per-seat lower operating costs than the future competition, **Boeing** said.

GE Capital Aviation Services (GECAS) ordered 20 737 MAX 8s and 20 Next-Generation 737-800s, valued at \$3.9 billion at list prices. The order was booked in December 2013, and was originally attributed to an unidentified customer on **Boeing's Orders and Deliveries** website. The follow-on order increased the **GECAS** order book to 95 737 MAX aircraft and 387 Next-Generation 737s. The lessor bought 75 Boeing 737 MAX and 10 737-800NGs (plus 15 737-800 options) in October 2012. **GECAS** has ordered 638 airplanes directly from **Boeing**, including 737s, 747s, 757s, 767s, 777s and 787s, and has taken delivery of 459 of the airplanes. Leasing companies receive approximately 40 percent of the world's annual commercial jet deliveries worth about \$100 billion. To date, 32 customers have ordered 1,763 MAX airplanes, and **Boeing** has sold 6,660 737NGs.

Alaska Airlines ordered two more **Boeing** 737-900ERs in mid-January. This was the airframer's first firm order in 2014, and was announced during the delivery of **Alaska's** 100th Next Generation 737, also a 737-900ER. **Boeing** said the airplanes were list priced at \$96 million each. The new order raised the airline's 737-900ER order book to 45, with 14 of them in service. The airline also operates 17 737-700s, 61 737-800s and a dozen 737-900s. It has outstanding options for 31 737-900ERs and firm orders for 20 737 MAX 8s and 17 737 MAX 9s. **Boeing** has sold 52 -900s and 526 -900ERs to date.

Air Algeri  signed a contract in early January to buy eight Next-Generation 737-800s worth \$724 million at list prices. **Mohamed Salah Boulouf**, chief executive officer of **Air Algeri **, said, "The 737-800 continues to be the backbone of **Air Algeri 's** fleet. So far, we are pleased with these aircraft, and anticipate receiving all eight of these new units before the end of 2016." The 737s will feature the **Boeing Sky Interior**. The airline is based in **Houari Boumedi ne International Airport**, Algiers, and it currently serves more than 40 destinations across Africa, Asia, Europe, North America and the Middle East. The Algerian flag-carrier currently operates a fleet of 17 737-800NGs and five 737-600NGs. To date, 4,559 737-800s have been ordered by the world's leading airlines

SpiceJet, an Indian budget airline, agreed to buy 42 Boeing 737 MAX aircraft worth more than \$4.4 billion at list prices, industry sources said. The list price does not reflect standard industry discounts.

Boeing Flew the 787-9 Dreamliner to Auckland, New Zealand, marking the 787-9's international debut and its longest flight since the fast-paced test program began in September, 2013. **Boeing's** second of three test 787-9s (ZB002) took off from **Boeing Field** in Seattle on January 3, and landed at **Auckland International Airport**, some 13 hours, 49 minutes later. The airplane was examined by the management and staff of its launch customer, **Air New Zealand (ANZ)**, before it flew to Alice Springs, Australia, for hot weather tests. ZB002 is the only 787-9 test aircraft to be fitted with elements of the passenger interior, in addition to test racks and instrumentation. It is used to test the environmental control system and other aspects of aircraft performance, **Boeing** said. They chose Alice Springs Airport for this testing because the location meets specific requirements for both facilities and atmospheric conditions. Testing was contingent on favorable weather and was scheduled to last approximately one week. **Christopher Luxon**, CEO of **Air New Zealand**, said, "Having one of **Air New Zealand's** 787-9s touch down on Kiwi soil for the first time is hugely exciting. It's a real reminder that we will soon welcome the first of these more modern, fuel-efficient airplanes into our fleet." ZB002 will be reconfigured for delivery to **ANZ** in mid-2014, after the test program is completed. Twenty-six customers have ordered 402 787-9s, accounting for 39 percent of all 787 orders.

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The low cost carrier will also take options for up to 42 more jets. The options are based on the airline's ability to grow, the sources said. **SpiceJet's** spokesperson declined to comment. **Boeing** said unidentified airlines bought 164 737s by the end of December and it is speculated that the **SpiceJet** order was included in the latest commitments by un-named customers. The carrier is India's fourth-largest airline measured by domestic market share and it needs new aircraft and new investors to revive its fortunes. **SpiceJet** posted a record quarterly loss in November, due to high fuel costs and the weakening Indian rupee. The fleet renewal was seen as essential to attract a new investor, as the airline will be worth more if it holds valuable 737 MAX delivery positions from 2018 onwards. Indian billionaire **Kalanithi Maran's Sun Group** controls the airline, and it is now looking for a foreign airline partner, now that India has loosened restrictions on investment. **SpiceJet** recently announced a three-year inter-line partnership with Singapore's **Tiger Airways**, portending a closer co-operation between the airlines. Right now, **SpiceJet** needs between \$150 million and \$300 million to fund current operations and the down payments for the new jets. **Boeing** was eager for the deal in the world's fastest-growing aviation markets, where **Boeing** has only three major customers, **Air India**, **Jet Airways** and **SpiceJet**. The Indian media reported that **SpiceJet** was flirting with **Airbus**, which provides all the rest of the country's medium-range twinjets. **Boeing** must have sweetened its offer to keep from losing such a high-profile customer. **SpiceJet** operates 24 787-800s and six 737-900ERs and it has outstanding orders for 18 more -800s. The airline faces competition from new entrants such as **AirAsia India** and the new **Tata Group/Singapore Airlines** joint venture, in a super-heated, money-losing market.

The International Association of Machinists & Aerospace Workers District 751 (IAM) voted by

a tiny margin to approve **Boeing's** contract extension offer on January 3. The **IAM** rejected the prior contract by 2-to-1 in November. The eight-year contract extension requires for the manufacturer to build the 777X and its composite wing in the Puget Sound area by **Boeing** employees represented by the

Boeing Set a Company Record for the Most Commercial Airplane Deliveries in 2013, when it handed over 648 jets to airlines, lessors and governments. The unfilled commercial backlog of 5,080 also set new Boeing record. The 1,531 new aircraft sales in 2013, (1,355 net orders) was the second-largest number in company history. The company's 737 program reached a new high with 440 deliveries, the 777 program delivered 98 airplanes, and the 787 program delivered 65 Dreamliners, to 16 customers around the world. The manufacturer hit its stride by the end of the year, with an average of 8.3 787 deliveries per month in the fourth quarter, up from 5.3 per month in the second quarter. **Boeing** launched three new widebody models in 2013. It officially offered the 787-10 Dreamliner at the **Paris Air Show** in June (132 sales to date), and the 777X-8 and 777X-9 models at the **Dubai Airshow** in November with 259 firm orders and commitments, worth more than \$95 billion at list prices. Now that **Boeing** has decided where to build its 777X, the company plans to increase 737 production rates. It will deliver the first 787-9 to launch customer **Air New Zealand** in mid-year. **Boeing** seems poised for another big year in 2014. "The year ahead will be exciting as we prepare to deliver the first 787-9, continue the design work on our newest programs – the 737 MAX, 787-10 and 777X – while increasing our production rates on the 737," said **Ray Conner**, President and CEO of **Boeing's Commercial Airplanes Division**.

Boeing's Defense, Space & Security Programs delivered two C-17As in the fourth quarter and 10 of the airlifters in 2013. The company handed over four P-8s to the **Indian Navy** and the **U.S. Navy** in the fourth quarter, and 11 maritime surveillance aircraft in 2013.

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IAM. This work includes fuselage build, final assembly and major components fabrication such as interiors and wires, the company said. Prior to the vote, **Boeing** had proposed to move 777X production to the state that offered the best tax breaks, grants and other incentives. Twenty-two states bid for the opportunity to host the **Boeing** factory. "Thanks to this vote by our employees, the future of **Boeing** in the Puget Sound region has never looked brighter," said **Boeing Commercial Airplanes** President and CEO **Ray Conner**. "We're proud to say that together, we'll build the world's next great airplane—the 777X and its new wing—is right here. This will put our workforce on the cutting edge of composite technology, while sustaining thousands of local jobs for years to come." The assembly line and wing factory could be worth thousands of jobs and billions of dollars to the region. However the eight-year contract extension replaces the workers' pension plan with a 401(k)-style retirement savings account which raises their healthcare costs. **Boeing** sweetened its offer by \$1 billion to include a larger signing bonus and other concessions, but local union leaders refused to endorse the contract, saying the changes were insignificant. The national machinist union leaders overruled the local leaders and put the proposal up for a vote. The locals cried foul when the rank and file grudgingly voted to approve. The prize that Washington State won will be the construction of a 1.2 million square-foot factory to house production of the 777X wing. The technology to make the wing will likely be used in future **Boeing** aircraft. In spite of the loss of a defined benefit pension and increased health insurance contribution, the machinists will enjoy better pay and benefits than most other American manufacturing workers. The average wage is approximately \$29 per hour. The 49 percent that rejected the contract extension, thought the company was steamrolling them with the threat to move out of Washington to a non-union state, in spite of the cost and disruption the move would cause. "They held a gun to our head and our people were afraid," said **Lester Mullen**, a District 751 council delegate. The union argued that **Boeing** earned healthy profits, and its share price was at record highs, so the company should not be demanding that its workers give up past contract gains. On the other hand, price competition with **Airbus** is fierce and **Boeing** must offer deep discounts to sell its airplanes. The younger members tended to vote to protect their jobs while the older workers voted "no" to protect their pensions. The new contract expires in 2024, which ensures that machinists will not have an opportunity to strike until then. Washington's political leaders had pressured the union to approve the deal. The state legislators voted for \$8.7 billion in incentives to keep the 777X jobs in the state, and to keep **Boeing** from opening a second line in another state, which it did with the 787 production in South Carolina. Representative **Rick Larsen** said, "Washington has shown that we stand behind a strong aerospace industry. **Boeing** should make the same commitment to our state. It is time for **Boeing** to hold up its end of the bargain."

Regional Report

Bombardier started the New Year with the second CSeries aircraft's first flight. The company flew Flight Test Vehicle 2 (FTV-2) on January 3, from Maribel, Quebec, nearly three months after the CSeries flight test program began on September 16. The first flight test vehicle, FTV-1 is slowly making progress. It flew only four times by November 1, but the flight schedule is ramping up. **Bombardier** decided the flight test phase would require more time than originally anticipated, so it delayed

Air Algerié, one of the biggest North African airlines, purchased three new ATR 72-600s, valued at \$74.1 million at current list prices. The airplanes will enter service from the end of 2014 through 2015. The 68-seat -600s will join **Air Algerié's** existing fleet of 12 ATR 72-500s. They will fly primarily on domestic and short regional routes. The airline is the largest ATR operator on the African continent. The manufacturer has sold more than 200 -600 aircraft to 35 operators around the world.

the first CS100 delivery to launch customer **Malmo Aviation** until the second half of 2015. The manufacturer had hoped the CS100 would enter service this September, a year after its maiden flight. The CS300 will be ready for delivery in mid-2016. **Bombardier** President **Mike Arcamone** said, "While the process has taken more time than we had expected, our suppliers are aligned with the program's schedule and together we will continue to work closely to move the program steadily forward. With the first flight of FTV-2, the CSeries aircraft program will continue to gain traction over the coming months." **Bombardier's** flight team intends to fly five aircraft for a total of 2,500 hours before the type earns its certificate. Three of the test aircraft have yet to be completed. It is expected that FTV-2 will help **Bombardier** catch up with its test schedule. The data accumulated by FTV-2 will help validate the numbers for fuel efficiency and noise emissions gathered so far by FTV-1.

SaudiGulf Airlines, a newly launched Saudi Arabian carrier will acquire up to 26 **Bombardier** CSeries jets. Damman-based **Al Qahtani Aviation Co.**, signed a purchase agreement for 16 CS300s, and optioned another 10 CS300s. The deal will be worth \$1.99 billion (\$76.54 million each) at list price, if all options are exercised. Sheikh **Tariq Al Qahtani**, chairman and owner of **SaudiGulf Airlines** said more than 54 million passengers moved through Saudi Arabia's 27 airports last year. "This is an exciting time for the aviation industry in the Arab states and neighboring regions." The airline chose the CSeries due to its "clean-sheet design, modern technologies and competitive costs." **SaudiGulf** would "introduce a new, quality, premium airline and an economically sustainable business model in Saudi Arabia, serving the domestic market, the Gulf and Middle East. **SaudiGulf's** CSeries aircraft will offer wide and comfortable, leather seats, and in-flight entertainment in first-class, as well as economy-class seats," Sheikh **Tariq** said.

Bombardier Aerospace delivered 238 aircraft in 2013, up five units from the 233 aircraft it delivered in 2012. The company sold 388 aircraft, net of cancellations, compared to 481 orders in the previous year. **Bombardier** delivered 55 commercial aircraft in 2013, five more than in 2012, however it received 81 net orders down from the 138 in the previous year. One hundred eighty business jets were delivered, one more than in 2012, but it saw its sales fall to 305 net bizjet orders compared to 343 in 2012. **Bombardier** delivered 10 fewer business aircraft than it had planned, while its commercial aircraft deliveries hit the mark set early in the year. The company delivered 26 CRJs in 2013 (14 in 2012) and 29 Q400 Next Gens, down from 36 in 2012. It also delivered three Bombardier 415 amphibious aircraft last year, down one from the four delivered in 2012. During 2013, **Bombardier** sold 30 CRJ series aircraft, 34 CSeries jets, and 17 Q400 Next Gen turboprops. In 2012, it sold 73 CRJs, 15 CSeries and 50 Q400s.

COMAC (Commercial Aircraft Corporation of China) completed the final assembly of its first two ARJ21 regional jets on December 30. The type will receive certification in 2014, and the planes will be delivered to launch customer **Chengdu Airlines**. Another three will be assembled this year. **COMAC** has already started flight and maintenance training for its customers. **COMAC** built four test aircraft for ground and flight test work. The first test aircraft flew on November 28, 2008, and had completed 2,301 take-offs and landings and accumulated 4,345 flight hours. **Chengdu Airlines** hopes to start ARJ21 this year and it has 30 ARJ21s on order for delivery through 2018. The **GE CF34-10A** turbofan-powered regional jets will be fitted with 70 economy, and eight first-class seats. The ARJ21 project was launched in 2000 and has encountered problems in development and certification. **COMAC** has firm orders and commitments for 352 ARJ21s, mostly from Chinese airlines and leasing companies.

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Embraer S.A. delivered 32 commercial and 53 business jets during the fourth quarter, and a total of 90 E-Jets to the airline market and 119 to executive aviation (90 light Phenom and 29 large Legacy and Lineage jets) in 2013. **Embraer** met the estimated aircraft delivery guidance proposed for 2013, for both commercial jets and executive jets. As of December 31, the firm order backlog stood at \$18.2 billion. **American Airlines'** contract for 60 E175s and options for 90 more E-Jets was the highlight of the quarter.

AVIC Formally Launched the Xian MA700 program and expects the first 70-seat turboprop to enter service in 2019. The MA700 was designed to serve medium-sized markets within a 800km (500 mile) range. The aircraft will be able to operate in high temperature, high altitude environments and will be capable of frequent short take-offs and landings. Its fuel consumption, operation and maintenance costs are also expected to be lower than its peers in the same category, **AVIC** said. The aircraft will cruise at 320 knots (600km/h) and climb to its cruising altitude in 13 minutes. The Chinese manufacturer issued a tender to global suppliers for parts to be installed on the MA700 and will choose its suppliers by 2015. **AVIC** plans to offer stretched and shrunk versions of the aircraft, and it expects to win type certification of the base-line aircraft from the **Civil Aviation Administration of China (CAAC)** by 2018. **AVIC** will ensure that the MA700 meets international standards, by having the **Federal Aviation Administration** or European **EASA** certify the aircraft, as well. The MA700 will compete against the ATR 72-600 and **Bombardier** Q400NG in the world market. **AVIC** already builds the MA600 and sells it mostly to airlines in Asia and Africa.

Embraer December 31, 2013 Orders & Deliveries

Type	Total Orders	Total Options	Total Deliveries	Current Backlog
E170	188	26	187	1
E175	375	472	187	188
E190	569	169	496	73
E195	145	22	128	17
E175-E2	100	100	-0-	100
E190-E2	25	25	-0-	25
E195-E2	25	25	-0-	25
Total	1,427	839	998	429
Type	4th Quarter Deliveries		2013 Deliveries	
Light Exec Jets	38		90	
Large Exec Jets	15		29	
Embraer 170	1		4	
Embraer 175	12		24	
Embraer 190	14		45	
Embraer 195	5		17	
Total	85		209	

Air Cote d'Ivoire, the Ivory Coast's national carrier, will borrow \$114 million from **African Export-Import Bank**, Cairo, Egypt, to finance the purchase of two new aircraft. In December, the airline signed a firm order for two Q400 NextGen aircraft with **Bombardier**, and took options to purchase two more Q400s. **Air Cote d'Ivoire's Rene Decurey** said, "The cost of these two planes is \$120 million. We approached **Afreximbank**, which is in charge of financing and will pay 95 percent of this amount." **Bombardier** said in its press release that "the contract value for two firm-ordered Q400 NextGen aircraft is approximately \$69 million, based on list price. Should the two options be converted to firm orders, the contract value would increase to \$141 million." The Q400s will be delivered in September and October 2014. **Air Cote d'Ivoire** operates two **Airbus** A319s and one EMBRAER 170 to 13 regional destinations. It will use the Q400s on new domestic routes. The company recorded turnover of 28 billion CFA francs (\$58.36 million) in its first year and expects revenue of 52 billion CFA francs in

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2014. The airline is 65 percent state owned, with private investors holding 15 percent and **Air France** holding 20 percent.

Order Changes and Cancellations

Airbus Order Changes and Cancellations. **Kingfisher Airlines**, India's moribund carrier, cancelled 10 widebody orders, but retained firm orders for 67 A320 and 15 A330-200s. Its five A380s and five A350-800s were dropped in December. The airline said it is still trying to revive itself. **United Airlines** cancelled six A319s and six A320s. The U.S. carrier is still committed to buy 10 additional A319s, eight A320s and 35 A350-1000s. **BOC Aviation** dropped one A320 order and purchased another A321, for a total of 50. **Intrepid Aviation** cancelled orders for one of its last two A330-200Fs and one of seven A330-200s. It purchased two additional A330-300s, for a total of 13.

American Airlines decided to cancel its orders for 18 276-seater A350-800s and replaced them with an equal number of 315-seat A350-900s. Its merger partner, **US Airways**, originally purchased the 18 A350-800s and four A350-900s in October 2007 for delivery in 2015. **American Airlines Group** will accept its first -900s in 2017, the result of **US Airways'** two year delay that was announced in November 2009. Following the switch, and **Kingfisher's** cancellation of five A350-800s, **Airbus** has lost 61 -800 orders over the last few years, and has 56 orders remaining. The current orders include eight each from **Aeroflot** and **Asiana**, 12 from lessor **Aircraft Purchase Fleet**, two from **AWAS**, six each from **Hawaiian** and **ILFC**, four from **Libyan Airlines**, and 10 from **Yemenia**. The first A350-800 is scheduled for delivery in mid-2016.

Virgin Australia Regional Airlines (VARA) delayed the delivery of six new ATR 72-600s to the March 2014 – August 2015 period from its original schedule of November 2013 to December 2014. The carrier, formerly known as **Skywest Airlines**, is busy trying to integrate its operations with parent airline **Virgin Australia**. **Virgin** acquired **Skywest** in April 2013. A spokeswoman said, "In 2013 we made a decision to slow the airline's growth to allow time to complete the integration of new resources and to embed the new systems and processes. This included deferring the introduction of new aircraft and destinations to the regional network. This is only temporary whilst we complete the integration process and we anticipate this will be complete by middle of this year." **VARA** currently operates 12 ATR 72s and took delivery of a new ATR 72 in September, but it has not yet entered service. All the aircraft are leased from **Avation**, Singapore. It also has two A320s, 10 Fokker 100s, and eight Fokker 50s in its fleet.

Leasing Companies

AWAS announced in January that it was leasing another new **Boeing 737-800NG** to **Aeroflot** in Russia. **Aeroflot** will transfer the 737 to its **Dobrolet** low-cost carrier division. The aircraft

Boeing Changes in December. **Lion Air** changed four of its 737-900ER orders to the -800 model, leaving a total of 167 -900ER and 40 -800 orders. **United Airlines** exchanged two of its 13 outstanding 787-8 orders to the -9 model. The airline now has eight 787-8s in service, and 11 -8s, 26 -9s and 20 -10s on order. **Nakash Group** ordered two 787-9s in 2006 and transferred the orders to **MG Aviation Limited** in December. The Dreamliners will be leased to **Norwegian Long Haul**. One **Boeing Business Jet** operator cancelled the only outstanding order for a -900BBJ (BBJ3). It was placed in December 2008, and leaves the BBJ program with six BBJ3s in service and none on backlog.

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will come from **AWAS'** existing new order pipeline, and will be delivered in the second half of 2014. **Dobrolet** will be based in the Moscow region; the name was taken from the Soviet Union's first joint-stock airline company established in 1923 which preceded **Aeroflot**. The low-cost carrier will operate new 737-800NGs in one-class configuration, and launch in the spring of 2014. **Dobrolet** is intended to follow the well-established and disciplined low-cost model, and to service the domestic Russian market, as well as routes to Eastern Europe, Germany, Italy and the Middle East, **AWAS** said.

SMBC Aviation Capital signed lease agreements with **Aeroflot Russian Airlines** for three **Boeing** 737-800NGs, which are part of **SMBC's** direct order book. As of January, 2014, **SMBC** owned and managed 346 aircraft valued at over \$10 billion and placed them with airline customers in more than 40 countries around the globe. It has commitments to purchase a further 52 aircraft worth over \$3 billion from **Airbus** and **Boeing** in the coming years.

Air Lease Corporation (ALC) will long-term lease two new **Airbus** A321-200s to **Sichuan Airlines**, China. The aircraft will be fitted with Sharklet wingtip devices, powered by **IAE** V2533 engines, and will be delivered in May and October 2014. **ALC** announced a long-term lease agreement with **Air France** for one new **Boeing** 777-300ER in January. The airplane will come from **ALC's** order book, and is scheduled for delivery in the fourth quarter of 2015. This is **ALC's** fourth 777-300ER lease with the French flag carrier. **Air France** is replacing some of its older **Boeing** 747-400s with the new 777-300ERs.

Finnair will sell and leaseback three new **Airbus** A321s fitted with Sharklets, with U.S. leasing company **Jackson Square Aviation**. The airplanes will be leased for 12

AviaAM Leasing, a Vilnius, Lithuania-based global aviation holding company, engaged in commercial aircraft acquisition, leasing and sales, has successfully leased used aircraft to airlines from the CIS region. **AviaAM Leasing** recently leased one **Boeing** 737-500 aircraft to **Aurora Airlines**, two **Bombardier** CRJ200s and two **Airbus** A321-200s to **Yamal Airlines**, as well as one 737-800NG to **Orenburg Airlines**. **Aurora** is a newly established regional Russian airline formed by the merger of **SAT Airlines** and **Vladivostok Avia**, and it is a subsidiary of **Aeroflot**. It is leasing -5L9 (SN 28997) from **AviaAM** for five years. The airline operates another 737-5L9 (SN 28721) and two 737-200 Advs, and it leases three A319-111s (SN 2222, 3281 & 3298) from **GECAS**. **Aurora** also operates two **Bombardier** Q200s and four Q300s. **Aurora** plans to expand its fleet to 40 aircraft within five years. **Yamal Airlines**, Tyumen, Russia, leased two **Airbus** A321-231s (SN 1956 & 1967) from **AviaAM Leasing** in December. The airline also leased two more **Bombardier** CRJ200s earlier in the month. **Yamal Airlines** previously leased ten CRJ200s from **AviaAM**. It received the first of the CRJs in 2011. The airliners are used for the carrier's regular flights in the Yamal-Nenets Autonomous District and beyond. **Yamal** intends to expand its network of 30+ domestic and international destinations by adding more regional jets. **AviaAM Leasing** leased a used **Boeing** 737-800NG (SN 33602) to **Orenair – Orenburg Airlines** in December, 2013. It was the first 737-800 in **AviaAM's** portfolio and the 19th -800NG acquired by **Orenair** during its process of fleet renewal in order to increase the safety of its operations. The airline is based in **Orenburg Tsentralny Airport**, in southern Russia, and also operates two 737-400s and three **ILFC**-leased 777-200ERs. **Belavia**, the flag carrier of Belarus, leased one **Boeing** 737-300 (SN 24327) from **AviaAM Leasing**. The airline is based at **Minsk National Airport**, Minsk, Belarus, and now operates seven 737-300s, six 737-500s, as well as four CRJ100s and CRJ200s, two EMBRAER 175s and three TU-154Ms to more than 30 airports across Europe, the CIS and the Middle East.

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years. The A321s will be used for **Finnair's** leisure and scheduled services and will replace four **Boeing** 757 aircraft. The first aircraft included in this agreement was delivered to the Finnish flag carrier on December 20, 2013. Two more aircraft will be delivered in the first half of 2014. The airline also received two **Airbus** 321 Sharklet aircraft in the autumn of 2013.

GA Telesis Founded **GA Telesis Aviation Investments (GAIN)** with \$500 million raised by **Wafra Capital Partners** from institutional and private clients. **GAIN** is a new aviation investment vehicle focused on aircraft and engine investment opportunities. It will be managed by **GA Telesis'** wholly-owned subsidiary **GA Telesis Capital Management**. With the new funding, the company's own money, and existing credit facilities, **GAIN** will have up to \$1 billion to invest in commercial aircraft, engines and new-generation component inventories. **GAIN's** assets will be available for long-term or short-term lease. It will also acquire assets for the immediate disassembly and resale of the components and parts. **GA Telesis** currently owns and manages a fleet of 60 engines and 30 aircraft and has disassembled nearly 200 aircraft and 500 engines since 2002. A press release said **GA Telesis** "is a leader in providing worldwide support services to the commercial and defense aerospace industries," with a financial group, a supply chain selection, and a component and heavy jet engine MRO business that spans the globe. Its **Wafra Capital Partners** is "a U.S.-registered investment advisor that is beneficially majority-owned by an autonomous agency of the government of Kuwait. [It] provides investment advisory services to its clients and principally focuses on structuring and advising investment vehicles in the equipment leasing, structured finance and real estate arenas that generally are intended to comply with Shari'ah principles."

Airline News

Tigerair, Singapore, is selling its 40 percent stake in **Tigerair Philippines** to **Cebu Pacific Air**. **Cebu** is the country's largest airline, and it controls 51 percent of the domestic market. This leaves three main players in a market glutted with aircraft, but short on passengers. The purchase left **Cebu Pacific**, a unit of conglomerate **JG Summit Holdings**, with only **Philippines Airlines** (35 percent market share) and **Zest Airways** (nine percent market share) as competitors. **Lance Gokongwei**, President and CEO of **Cebu Pacific**, said he thought the pressure on air fares was a "reflection of the fierce competition within the Philippines," where the number of seats far exceeded the numbers of passengers. He said, "Our feeling is that the Philippine economy continues to grow at a pretty strong clip and if we have overcapacity at the moment, over time the growth of the market will more than compensate for this." In March, 2013, Malaysia's **AirAsia** bought 49 percent of **Zest Airways** and infused more cash in September to relieve the financial stress on the low-cost carrier. **Cebu** will buy **Tigerair's** stake for approximately \$7 million in cash and the 60 percent owned by its local partners for \$7.5 million. **Cebu Pacific** will not take on any of **Tigerair Philippines'** debt, but it will take control of **Tigerair's** fleet of two A319s and three

IATA Posts January Jet Fuel Prices. Fuel prices were remarkably stable in 2013. The association updates the world's average jet fuel price each week. On January 3, 2014, the average price of fuel was \$2.970 per gallon. The fuel price was \$2.975 per gallon on December 13. The January price was 0.99 percent lower than in December, and was 2.8 percent higher than in January 2013. The price of fuel is affected by location. It was only \$2.902 in the Middle East region and was as high as \$3.049 per gallon in Latin America. **IATA** estimated that the global airline industry's fuel bill totaled \$124.6 billion in 2013. This was a decrease of \$4 billion over 2012.

A320s, which were leased from **CIT Aerospace and MC Aviation Partners**. **Tigerair Philippines** has been losing money and it wrote off losses of Singapore \$84 million (\$66 million) from its Philippines operations since August 2012. It will also lose S\$13.5 million (\$10.6 million) from the sale. **Tigerair** is a subsidiary of **Tiger Airways**, which is 40 percent-owned by **Singapore Airlines**, and it lost millions of dollars since buying into **South East Asian Airlines (SEAir)** in February 2011, to form **Tigerair Philippines**. **Tigerair** will still collaborate both commercially and operationally with **Cebu Pacific** on domestic and international routes. **Cebu Pacific** said the alliance will enable it to fly to high-growth markets such as Australia and India, and jointly operate routes between Singapore and the Philippines. The agreement is subject to regulatory approvals, and it will see **Tigerair Philippines** operate under its brand until the completion of the deal. The **Tigerair** and **Cebu Pacific** websites will be used to distribute tickets for both carriers. The partnership will allow **Cebu** to create the largest budget airline network flying between the Philippines and East Asia. **Tigerair** also bailed out of the Australian market when it sold 60 percent of its unprofitable Australian unit to **Virgin Australia Holdings Ltd.** The sales have not dampened **Tigerair's** enthusiasm for expansion. It will launch **Tigerair Taiwan**, and will hold 10 percent of the new joint venture with **China Airlines**. It also formed an alliance with budget airline **SpiceJet** in India, and partnered with **Scoot**, Singapore's medium and long-haul low-cost carrier.

Etihad Regional was launched in Zurich, Switzerland on January 16. It will be operated by **Darwin Airline**, based at Lugano, and was founded in partnership with **Etihad Airways**. The first of 10 50-seat Saab 2000s in **Etihad Regional's** color scheme were unveiled at **Zurich Airport**, alongside an **Etihad Airways' A330-300**. All 10 will feature new cabin interiors and logos by the end of June. **Etihad Regional** said it heralded a new era of improved regional and international connections for travelers in Europe.

Etihad Airways is carrying out a several-week long due diligence on **Alitalia**. It is considering injecting up to €300 million (\$408 million) into the Italian flag carrier, which would give it approximately 40 percent of the shares, a stake large enough to influence management and strategy. **Alitalia** flies 25 million passengers a year to Europe's fourth-largest travel market, but it currently loses €700,000 a day and has net debt of more than €800 million (\$1.088 billion). **Alitalia's** main shareholders include the **Intesa Sanpaolo** and **UniCredit** banks, state-owned **Poste Italiane**, motorway group **Atlantia**, and conglomerate **IMMSI SpA**. **Air France-KLM** still holds seven percent of the airline. In January, **Alitalia** had to ask the banks to extend an existing loan agreement by €50 million euros (\$68 million), due to the continuing liquidity problem. **Intesa Sanpaolo** and **UniCredit** loaned **Alitalia** €200 million (\$272 million) in October as part of the €500 million government-engineered rescue package. The loans are intended to keep the nearly-bankrupt carrier in the air as it seeks a deal with **Etihad**. The Abu Dhabi flag carrier said it would not be rushed into making a decision about investing in **Alitalia**, the CEO **James Hogan** said to the press. "There are no plans to make any announcement at the end of this month [January]. What is important in any transaction is that you undertake your due diligence and ensure if you are going to invest, there is a clear plan to move to profitability. We will not be rushed into making a decision," Mr. **Hogan** said.

Air France-KLM received a firm offer from **Intro Aviation** to purchase the **CityJet** regional airline as well as its subsidiary **VLM**. **Air France-KLM** said the transaction would close in the first quarter of 2014. **Intro Aviation** was founded as an aviation consultancy in 1973 and is managed by **Hans Rudolf Woehrl**. It is based near Nuremberg, Germany. It acquired **Deutsche BA** from **British Airways** for one

euro in 2003. The airline was renamed **DBA** and sold to **Air Berlin** in 2006. Then **Intro Aviation** bought the majority share of Germany's **LTU** group, rehabilitated it and sold it to **Air Berlin** in 2007. **Air Berlin** is now Germany's second largest airline, after **Lufthansa**. **CityJet** is based in Dublin, has a fleet of 38 aircraft and offers more than 480 weekly flights across Europe. It is the biggest carrier at **London City Airport**. Mr. **Woehrl** plans to merge **CityJet** with his carrier **InterSky** to tap into demand for regional business flights beyond Europe's big airline hubs. "The aim is to create a new regional airline active across Europe that is big enough not to be pushed out by big carriers like **Lufthansa**," he told the German press. **Intro Aviation** owns 74.9 percent of **InterSky**, which operates two ATR 72-600s and three Q300s on services between Germany, Austria and Switzerland. "In Europe, there is a market for regional connections for business travelers who are not in the big economic centers of Europe," Mr. **Woehrl** said. "There will be a revival there, and more and more regions are suffering a lack of flight connections."

TATA SIA Airlines will lease 20 new A320s and launch its new full-service operations in the second half of 2014. The 20 A320s will be worth \$1.83 billion (\$91.5 million) at list prices, and will be sourced from leasing companies, rather than purchased directly from **Airbus**. Sources said the project team preferred the A320 over the **Boeing** 737NG. **Airbus** dominates the Indian single-aisle aircraft market. **IndiGo** has 74 A320s on hand and 191 additional A320s and A321s will be delivered over the rest of this decade. **GoAir** has 17 A320s in its fleet, and orders for another 70 of the updated A320neo variant. **Air India** operates the A320 Family, while its subsidiary **Air India Express** flies 21 737-800NGs. **Jet Airways** narrow-body fleet comprises 61 737-700/-800/-900s, and the other all-**Boeing** low-cost operator is **Spicejet**, with 42 737NGs. **TATA SIA Airlines** will operate full-service flights out of New Delhi on domestic routes and compete with two other full-service carriers **Air India** and **Jet Airways**, now that **Kingfisher** ceased flying. **Tata Sons** will also launch its joint venture with **AirAsia**, **AirAsia India**, in the low-cost market this summer.

Hawaiian Airlines and **Empire Airlines** are launching an inter-island regional **Ohana by Hawaiian**. The U.S. Federal Aviation Administration (FAA) is expected to complete the certification process by this month. **Empire** president and CEO, **Timothy Komberec**, said, "We are preparing the airplanes to be ferried to Hawaii in the next few days where we will commence our inter-island proving flights." The regional carrier's certification was delayed by the **Federal Government's** sequester budget cuts in March, which hindered the **FAA's** ability to send staff to Hawaii to oversee the flight test program. Commercial service will begin a month after **Ohana** receives **FAA** certification, **Hawaiian** said. The airline will initially operate three **Hawaiian**-owned 48-seat ATR 42-500s between **Honolulu International Airport** and the cities of **Lana'i** and **Moloka'i**. The airplanes will be operated by **Empire**. Later, **Ohana** will fly to **Hilo**, **Kahalui**, **Kona** and **Lihue**. **Ohana** is a Hawaiian term for "family" and the airline was conceived in 2012, but has taken a while to gestate.

Bankruptcy of the Month

Evergreen International Airlines, filed for Chapter 7 bankruptcy protection on December 31. This came two weeks after creditors asked a court to force the company to pay off its debts. The petition was filed in U.S. Bankruptcy Court in Wilmington, Delaware, and stated the air freight and military transport company owned up to \$100 million in assets, and owed as much as \$500 million in debt to more than 5,000 creditors. Some creditors filed papers on December 17, seeking to force the **McMinnville**,

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Oregon-based airline to pay its bills. **Evergreen's** six affiliates including **Supertanker Services**, **Evergreen Defense and Security Services**, **Evergreen Aviation Ground Logistics Enterprise**, **Evergreen International Aviation**, **Evergreen Systems Logistics**, and **Evergreen Trade** also filed for Chapter 7 protection. **Evergreen** provides air freight, maintenance and other services to air carriers, aviation companies, and governmental agencies worldwide, using a fleet of four **Boeing 747-400Fs**, and one 747-100SF supertanker, and it has 10 747-100SFs and nine 747-200Fs in storage. Last March, **Erickson Air-Crane** offered to buy **Evergreen Helicopters** with 65 rotor and fixed wing aircraft, for \$185 million in cash, \$17.5 million in unsecured promissory notes, and approximately four million newly-issued preferred shares. It closed the deal in May. The press reported that **Evergreen** ceased operations as of January 1, 2014.

Technical

Southwest Airlines ordered **Aviation Partners Boeing (APB) Split Scimitar Winglets** for 85 **Boeing 737-800NG** aircraft. **Southwest** intends to retrofit all of the 52 737-800s currently in its fleet, and the 33 737-800s that are scheduled for delivery in 2014. After **FAA** certification, **Southwest** will begin **Split Scimitar Winglet** retrofits at **Aviation Technical Services**, Everett, Washington, in the first half of 2014, and plans to complete all the retrofits by early 2015. **APB** estimates that **Southwest** will gain an average of two percent annual fuel savings using the **Split Scimitar** winglet upgrade over the three percent per aircraft fuel savings due to the installation of **APB Blended Winglets**. In addition to lowering **Southwest's** fuel costs, the **Split Scimitar Winglet** will reduce emissions. **APB's Split Scimitar Winglet** program was the culmination of a five-year design effort using the latest computational fluid dynamic technology to redefine the aerodynamics of the **Blended Winglet** into an all-new **Split Scimitar Winglet**. The unique feature of the **Split Scimitar Winglet** is that it uses the existing **Blended Winglet** structure, but adds new strengthened spars, aerodynamic scimitar tips, and a large ventral strake. **APB** expects to win **FAA** certification for **Split Scimitar Winglets** in January, the company said. Since launching the program early last year, **APB** has taken orders and options for 1,451 **Split Scimitar Winglet** systems. Over the last 10 years, **APB** has sold more than 7,000 **Blended Winglet Systems** and more than

Ethiopian Airlines' fire-damaged Boeing 787-8 Dreamliner (ET-AOP) flew again on December 21, after the repair of its upper aft fuselage. The airplane was substantially damaged by fire on July 12, while the plane was parked on a remote stand at **Heathrow Airport**. **Boeing's** and **Ethiopian's** engineers have been working on the repair since September. They removed the aircraft's vertical stabilizer and erected a temporary tent structure around the fuselage. **Boeing** cut out the damaged fuselage area, replaced it with a composite section that was bolted to the airframe and reinstalled the tail. **Boeing** spokeswoman **Kate Bergman** said, "The repair and refurbishment took approximately two months and has returned the airplane to full structural integrity, with no degradation to passenger safety or comfort." The plane operated a scheduled flight from Frankfurt, Germany, to **Ethiopian's** base in Addis Ababa on December 23. Investigators suspect the source of the fire was a small lithium battery inside an **Emergency Locator Transmitter (ELT)** which was installed in the upper rear fuselage. The fire caused intense heat damage above the ceiling at the back of the passenger cabin. It scorched a large area of the carbon-fiber skin on the crown of the fuselage in front of the vertical tail fin. **Boeing** fabricated a full rear fuselage barrel, and then cut out a large patch to replace the fire-damaged skin of the 787. Because it was the first major repair to an carbon-fiber-reinforced plastic composite aircraft, the method and efficacy were of intense interest to the airline industry and especially 787 operators.

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5,100 of them are now in service with over 200 airlines in more than 100 countries.

Associated Air Center (AAC) will install a new custom interior in a green **Boeing** 787-8 BBJ aircraft for an unnamed customer (probably the **Abu Dhabi Amiri Flight**, see 787 deliveries on Page 25). The interior design review is underway and **AAC** started detailed planning, staffing, training and facilitation ahead of the aircraft's delivery in mid-2014. The completion contract was signed late December, and was the culmination of months of discussions about special airframe training requirements, with **Boeing** engineers. The aircraft's interior was designed to create a comfortable and modern environment by **Associated Air Center's** in-house design team.

Jet Aviation Basel will complete the interior of an **Airbus** ACJ320 corporate jet for an undisclosed head-of-state. The green aircraft will be delivered to the **Basel Completions Center** in the third quarter of 2014. It will feature a luxurious bedroom, bathroom, lounge, and office area in addition to a large executive staff area. The aircraft will be handed over to the client at the end of 2015.

Cargo Pallet

PEMCO World Air Services formed a new **Boeing** 737 freighter conversion partnership with **COOPESA (Cooperativa Autogestionaria de Servicios Aeroindustriales R.L.)**, San Jose, Costa Rica. The expansion into Central America provides much needed additional freighter conversion capacity to meet demand for **PEMCO's** 737-300 and -400 freighters. They are the only 737 freighters designed, built, certified and supported utilizing **Boeing** design data to ensure the reliability and effectiveness of the cargo modification, the company said. Further, **COOPESA's** technical expertise and competitive financials, combined with its great location and culture makes the newest passenger-to-freighter conversion operation a compelling option, particularly for Latin American markets, **PEMCO** said.

Global Air Fleet reported the sale of two 737-400SFs to **Swiftair**, Spain. **Global** also purchased a 737-400F from **Swiftair** and leased it back. **PEMCO** will perform the cargo door conversions and redeliver the first of the 737-400Fs on February 10, 2014. **Global Air Fleet** also sold one **PEMCO**-converted 737-400SF to **Rio Air Cargo**, Brazil. The airplane will be redelivered on January 29. **Global** leased one 767-200ER (SN 23307) to **Asian Air**, Thailand, for three years, starting January 27.

Aeronautical Engineers (AEI) will perform a passenger to freighter conversion for **Vx Capital Partners. Commercial Jet**, Miami, Florida, will convert the 1994-model, standard gross-weight 737-400 (SN 25109) into a 737-400SF. The converted aircraft will be offered for sale or lease.

Ukraine and Russia to Restart Antonov An-124 Production. The two countries signed an economic co-operation agreement on December 17. Ukrainian Prime Minister **Mykola Azarov** said, "Ukraine and Russia are to restore series production of An-124 aircraft with Ukrainian engines. The total number to be built is 80 aircraft." He expects combined revenues of approximately \$80 billion from the sale of the aircraft, which, if correct, puts the per-unit cost at around \$1 billion each. The intended customers were not identified, but Mr. **Azarov** said this "will allow us to take leading position in the international transport of bulky cargo for a few decades." There are 26 An-124s in operation with five airlines, including **Antonov Airlines (7)**, **Libyan Air Cargo (2)**, **Maximus Air Cargo (1)**, **Polet Flight (6)**, and **Volga-Dnepr Airlines (10)**, and the **Russian Air Force (14)**.

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AWAS leased one 757-23APF freighter (SN 24566) to **Cargojet Airways**, a Canadian cargo airline that recently celebrated its 10th year of service. The aircraft was from **AWAS'** existing portfolio and was recently converted to cargo. The airline now operates two 757-200 Extended Range freighter aircraft, and will take delivery of another two 757Fs in the second quarter. **Cargojet** is phasing out its fleet of 11 older-generation 727-200F freighter aircraft on its domestic overnight network, as the newer 757Fs enter service. The airline also operates two 767-200ERFs.

Ethiopian Airlines is adding four new **Boeing 777-200** Freighters, starting in the autumn of 2014, to its cargo fleet. The **Eastern and Southern African Trade and Development Bank (PTA Bank)** is financing the pre-delivery payments. The flag carrier operates the largest cargo fleet in Africa, including two 757-200Fs, two **GECAS**-leased 777Fs and two MD-11Fs, on routes to 24 destinations in Asia, Europe, Africa and the Middle East. The airline's CEO **Tewolde Gebremariam**, said the new aircraft will support the carrier's newly established cargo hub in Lome, Togo, in partnership with **ASKY Airlines**. "We are phasing in the latest technology cargo aircraft with the aim of supporting Ethiopia's exports and the booming trade between Africa and the rest of the world," he said.

Atlas Air Worldwide Holdings, a cargo aircraft operator, acquired three **Boeing 777** Freighters (SN 37138, 38969 & 39286) for its dry-leasing subsidiary, **Titan Aviation**. The 2011-vintage aircraft were acquired from affiliates of **Guggenheim Aviation Partners**, and are currently on long-term lease to the European express carrier, **TNT Airways**.

Military Market

The **Indian Ministry of Defense** signed a contract to buy six **Lockheed Martin C-130J** Hercules tactical transports on December 27. The new aircraft will join the six C-130Js already in service with the **Indian Air Force's** 77th Squadron, that were part of a 2008 contract. India's **Defense Acquisition Council (DAC)** approved the \$1.2 billion purchase in September, which was later approved by the **U.S. Foreign Military Sales** program. The first aircraft will be delivered in 2016. The contract includes six spare **Rolls-Royce AE2100-D3** engines. **Indian Air Force** C-130Js are configured for special mission roles and are fitted with an infrared detection set, enabling precision low-level flying, airdrops and landing in blackout conditions. The aircraft are also equipped with air-to-air refueling capability and have been used extensively for humanitarian relief tasks, operating under austere field conditions.

Lockheed Martin delivered the 300th production C-130J aircraft in mid-December. The 300th Super Herc was an MC-130J Commando II and it was assigned to the **U.S. Air Force Special Operations Command**. The Commando II supports such missions as in-flight refueling, infiltration/exfiltration, and aerial delivery and resupply of special operations forces, **Lockheed Martin** said. The manufacturer delivered the **USAF's** 200th C-130J earlier in the month. Sixteen countries have

Boeing started to assemble the fourth and final KC-46A test aircraft at the **Everett** factory. The program is on track to deliver the initial 18 next-generation aerial refueling tankers to the **U.S. Air Force** by 2017. The four test aircraft will be ready for ground and flight testing later this year. The Engineering and Manufacturing Development KC-46 test aircraft will fly by midyear, but it will not have its aerial refueling systems installed. The first fully equipped KC-46A tanker will fly in early 2015. The factory will deliver the first production aircraft to the **Air Force** in early 2016. If all options are exercised, **Boeing** will build 179 tankers by 2027. The KC-46A is a derivative of the **Boeing 767** jetliner.

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chosen the C-130J Super Hercules to meet their air mobility needs, and taken delivery of 99 of them. In non-combat environments, C-130Js are often the first to support missions like search and rescue, aerial firefighting, and delivering relief supplies after earthquakes, hurricanes, typhoons and tsunamis around the world. **USAF** C-130Js were deployed in Afghanistan and Iraq where they operated efficiently and reliably at a very high tempo, the manufacturer said.

The **US Air Force** will transfer 14 of its **Alenia Aermacchi** C-27J Spartans to the **US Coast Guard**, under a complicated aircraft swap approved by the 2014 **US Defence Authorisation Bill**. The bill requires the **Coast Guard** to transfer the oldest seven of its 24 **Lockheed Martin** HC-130Hs to the **Air Force**, which will then convert them into fire-fighting tankers for use by the **U.S. Forest Service**. The **Air Force** took delivery of 38 C-27Js from 2008 through 2013, and has now parked most of them at the **309th Aerospace Maintenance and Regeneration Group (AMARG)**, at **Davis-Monthan AFB** near Pima, Arizona. Seven aircraft have been transferred to the **U.S. Special Operations Command**. This leaves another 17 C-27Js resting in the **Air Force's** boneyard. As per usual, the **Forest Service** is left with old, inefficient, expensive and maintenance intensive C-130s to fight fires. The **Forest Service** was interested in the C-27J because it was new, modern, fuel efficient and would not require costly overhauls before entering service.

AIRCRAFT DELIVERIES & SALES



Airbus A318 & A319. **American Airlines** leased one -112/W (SN 5327) from **Z/C Aviation Partners One** in December. The aircraft was the A319 Sharklet test aircraft and made its first flight in November 2012. **China Aircraft Supplies Import and Export Group (CASGC)** took delivery of -115 (SN 5907) and transferred it to **China United Airlines**. **CIT Aerospace** leased -132 (SN 3252) to **Air Serbia**. It was the first of several aircraft that **CIT** will place with the airline.

Airbus A320. **Airbus** delivered 34 A320s in December. **AirAsia** received six -216/Ws (SN 5866, 5888, 5897, 5905, 5908 & 5914) and leased the first (SN 5866) to **Thai AirAsia**. **Qantas Airways** took delivery of three -232/Ws (SN 5877, 5885 & 5894) and sold the middle one (-232/W SN 5885) to **Vueling**, Spain. The first -232/W (SN 5877) was leased to **Jetstar Japan**, and the last -232/W (SN 5894) went to **Jetstar Airways**. **AWAS** received four -200s and leased a second -216/W (SN 5901) to **Vanilla Air**, Japan. **AWAS** leased the fourth of nine -232/Ws (SN 5892) to **Thai Smile**, and the first of two -214/Ws (SN 5891) to a new customer **Air Blue**, Pakistan. A new client for both lessors, **Air Corsica** leased -214 (SN 5906) from **AWAS**, and leased -214 (SN

AWAS delivered the third A320-216 (SN 5926) from its order backlog to **Vanilla Air**, Japan, a low cost regional subsidiary of **ANA Holdings**. The plane will be joined by two more **AWAS** A320s later this year. The lessor sold **Vanilla Air's** second -216/W (SN 5901) to a third party investor as part of **AWAS's** strategy to trade highly valuable aviation assets, both through acquisition and disposition. Also in January, **AWAS** leased a used A320-214 (SN 3240) to a new customer **Lucky Air**. **AWAS** acquired the -214 from **TAM Linhas Aereas** in December. **Lucky Air** offers domestic services across China from its base in Kunming.

5887) from **CIT Aerospace**. **Tigerair**, Singapore, leased -232 (SN 5900) to **Tigerair Australia**, and kept -232/W (SN 5915) for itself. **IndiGo** accepted two -232/Ws (SN 5893 & 5898). **Airbus** delivered two -214/Ws (SN 5889 & 5903) to **Air Arabia**. **Tianjin FAL** delivered two -232s (SN 5750 & 5797) to **China Southern Airlines**, one -214 (SN 5771) to **Air China**, and one -214 (SN 5766) to **Shenzhen Airlines**. **Hong Kong Airlines** leased one **Tainjin-built** -214 (SN 5760) to **Tainjin Airlines**, and leased one **Airbus-built** -214/W (SN 5912) to **China West Airlines**. **GE Capital Aviation Services** leased new -214/W (SN 5911) to Japanese low-cost carrier **Spring Airlines**, and **SMBC Aviation Capital** delivered a new -214 (SN 5874) on lease to **Peach Aviation**. **LATAM Airlines Group** took delivery of two -214/Ws (SN 5883 & 5902). The first was leased to **TAM**, and the second was sold to **Avolon Aerospace** for lease to **Pegasus Airlines**. **Aerventure** leased -214/W (SN 5869) to **Air France**. **Spirit Airlines** accepted one -232/W (SN 5880), and **Cebu Pacific Air** received -214/W (SN 5917). **Etihad Airways** took delivery of -232/W (SN 5882) and sold it to **Avolon** for lease back. It was the second of two A320s that **Avolon** is leasing to **Etihad**. The first was delivered in October.

Airbus A330. **Airbus** delivered seven -200s and five -300s in December. **China Eastern Airlines** acquired two -243s (SN 1468 & 1479) for a total of 21, and **Air China** bought its 30th and last -243 (SN 1471). **Garuda Indonesian Airways** received its third and final -243 (SN 1474). **US Airways** accepted its 12th -243 (SN 1480), and **Afriqiyah Airways** took delivery of its fourth and final -202 (SN 1472). **Airbus Military** delivered the fourth A330-202 MRTT (SN 1379) to the **Royal Saudi Air Force**. **GE Capital Aviation Services Ltd. (GECAS)** leased the first of two new -302s (SN 1450) to **China Airlines** in December. The second is due in 2014, and the aircraft come from **GECAS'** existing order book with **Airbus**. **Saudi Arabian Airlines** accepted its 11th -343E (SN 1473), and **Turkish Airlines (THY)** acquired its 12th -303 (SN 1476). **Airbus** delivered -343Es (SN 1475) to **Philippine Airlines**, for a fleet total of 14 A330s. **Singapore Airlines** leased -343X (SN 1477) from **Meridian Aviation Partners**, and **Malaysian Airlines** leased -323X (SN 1470) from **Novus Aviation Capital**.

Airbus A321. **Airbus** delivered a record 12 A321s in December. **American Airlines** leased four -231/W Transcontinentals (SN 5860, 5884, 5895 & 5904) from **CIT Aerospace**, as part of its fleet renewal program. The A321Ts are powered by **IAE V2533-A5** engines, and equipped with a three-class cabin. They entered service on January 7 on trunk routes between New York and California. **CIT** will lease another five A321s to **American**; they are scheduled for delivery through the third quarter of 2014. **American's** merger partner, **US Airways** received its 91st -231 (SN 5899). The airline has 30 more on order. **Aeroflot** received two -211s (SN 5881 & 5913), and **UTair** took delivery of its fourth -211 (SN 5919). **China Southern Airlines** accepted one -231 (SN 5890), and **Vietnam Airlines** bought -231 (SN 5916). **Finnair** acquired its seventh -231/W (SN 5922). It was sold to **Jackson Square Aviation** and leased it back. The airplane is leased for 12 years. Another two A321s are on order and will be sold to **Jackson**. **JetBlue** received its fourth of 83 -231/Ws (SN 5909).

Airbus A380. **Airbus** delivered three A380-861s (SN 138, 139 & 140) to **Emirates Airline**, for a fleet total of 44. The last two were sold to **Novus Aviation Capital** and leased back. **Airbus** handed over 25 A380s this year, meeting its goal set in January.

Boeing

Boeing 737 NG. Boeing delivered a record 42 737s in December, including four -932ER/Ws (SN 31915, 31916, 31922 & 31923) to **Delta Air Lines**, for a fleet total of 12, with 88 more on order. After a brief interim, **American Airlines** took delivery of five -823/Ws (SN 31177, 33232, 33323, 33491 & 33492). **SMBC Aviation Capital** bought two -823/Ws (SN 31177 & 33232) and leased them back to **American**. **SMBC** has four pending sale/leaseback transactions with the airline, for a total of eight. **Avolon** purchased its 15th -823/W (SN 33323) from **American** and leased it back; the 15 -800s include aircraft that are managed on behalf of third party investors. **Aercap Leasing** is the owner of two **American**-leased -823/Ws (SN 33491 & 33492). **Southwest Airlines** acquired three -8H4/Ws (SN 36731, 36917 & 36919); it has 47 in its fleet and 52 more on order. **United Airlines** accepted two more -924ER/Ws (SN 42744 & 42821), for a total of 76. **Air Lease Corporation** leased one -8U3/W (SN 41312) to **Garuda Indonesia**, and one -89L/W (SN 41313) to **Air China**. **ILFC** delivered another new -85C/W (SN 41793) to **Xiamen Airlines**. **GECAS** leased -86N/W (SN 41256) to **Spring Airlines**, Japan. **WestJet** accepted -8CT/W (SN 39081), and **Boeing** delivered BBJ-7JW/W (SN 38408) to **Wuleen Investment Corp.** It was the only -700 to be delivered in December. **GOL Transportes Aéreos** took delivery of its 85th -8EH/W (SN 39629). In Europe, **Norwegian Air Shuttle** received four -8JP/Ws (SN 39025, 39026, 39027 & 39028), and has another 57 on order. **Air Berlin** took delivery of its 77th -86J/W (SN 37786), and **Russian Technologies** leased -8LJ/W (SN 41197) to **Aeroflot**. In West Asia, **Pegasus Airlines** accepted -82R/W (SN 40009), and **flydubai** acquired its 33rd and 34th of 61 -8KN/Ws (SN 40262 & 40282). The **Republic of Iraq** leased -81Z/W (SN 40105) to **Iraqi Airways**, and **Turkmenistan Airlines** acquired -82K/W (SN 43863). In East Asia and Oceania, **Boeing** delivered one -89P/W (SN 39730) to **China Eastern Airlines**, the 68th -84P/W (SN 39206) to **Hainan Airlines**, -86D/W (SN 39306) to **Shanghai Airlines**, and one -87L/W (SN 39139) to **Shenzhen Airlines**. **Air China** transferred new -89L/W (SN 40040) to **Shandong Airlines**. **Lion Air** received two -9GPER/Ws (SN 38742 & 38743), and leased them to **Batik Air**. **Qantas** purchased its 69th -838/W (SN 39366), and has five more on order. **Jet Airways** acquired -8AL/W (SN 39063), and **Malaysia Airlines** took delivery of -8H6/W (SN 40153).

Boeing 747. Boeing delivered a record six 747s in December, including three -867Fs (SN 43394, 43536 & 43825) to **Cathay Pacific Airways**. The 747-8F features the new **Performance Improvement Package (PIP)**. The 747-867F (SN) is equipped with performance-improved GEnx-2B engines, which is the first aspect of the **PIP**. **PIP** also features **Flight Management Computer (FMC)** software upgrades and reactivation of the horizontal tank fuel system on the 747-8 Intercontinental. **Nippon Cargo Airlines** accepted its fifth of 14 -8KZF (SN 36139), and **Korean Air** received -8B5F (SN 37656). **Volga-Dnepr UK Ltd** acquired its fifth -8HVF (SN 37670), and leased it to **AirBridgeCargo Airlines**, Russia. **AirBridgeCargo's** current fleet consists of five 747-400ERFs (Extended Range Freighters), three 747-400 freighters and five Boeing 747-8F freighters. The new aircraft will be used on ABC's existing route network linking Europe, Asia and the United States via the airline's hub in Moscow, **Boeing** said.

Boeing 767. Boeing delivered only one 767F in December, the fourth of 48 -3S2F freighters (SN 42708) to **FedEx Express**.

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Boeing 777. Boeing delivered one 777F and seven 777-300ERs in December, including the first of eight 777i FFTs (SN 44678) to **Air China Cargo**. **Cathay Pacific Airways** accepted two more -367ERs (SN 41430 & 41431), for a fleet total of 34. The first of the -367ERs was leased from **BBAM—Babcock Brown Asset Management**. **Saudi Arabian Airlines** took delivery of its 11th and 12th -368ERs (SN 41057 & 41059). Boeing delivered the 14th of 15 -333ERs (SN 43249) to **Air Canada**, and **American Airlines** received its 10th of 20 -323ERs (SN 31550). **Qatar Airways** acquired its 24th -3DZER (SN 41739), and has three more on order. **AWAS** acquired -3B5ER (SN 37136) from **Guggenheim Aviation Partners**. The aircraft is still on long-term lease with **Korean Air**.

Boeing 787. Boeing delivered a record 11 787-8s in December, including three -8s (SN 34924, 34928 & 34930) to **China Southern Airlines**. All three were delivered on December 24. The airline now operates eight -8s and has two on order. **Hainan Airlines** acquired its fifth and sixth -8s (SN 34941 & 34945). It has four more on order. **Qantas** accepted two -8s (SN 36228 & 36229) and leased them to **Jetstar Airways**. **Air India** acquired its 11th of 27 -8s (SN 36280), and **Japan Airlines** received its 13th -8 (SN 34846). **Jetairfly** leased its first 787-8 (SN 34425) from its parent company **TUI Travel PLC**, on December 3. The 787 began flying short and medium haul **Jetairfly** routes in early December and long haul routes after Christmas. **ILFC** leased the first VIP Dreamliner -8 (SN 35303) to the **Abu Dhabi Amiri Flight**.

Regional Jet

Bombardier delivered four CRJ900 NextGens (SN 15298, 15299, 15300 & 15301) to **Delta Air Lines** in December. They were leased to **Endeavor Air**, for operation under the **Delta Connection** brand. The airline now has 10 CRJ900NGs in its fleet, another 30 on order, and 30 on option. **China Express Airlines** received two CRJ900NGs (SN 15280 & 15281). Both airplanes were built for a now cancelled **Iraqi Airways** order and were stored since their first flight in March 2012. **Arik Air**, Nigeria, received CRJ1000NG (SN 19037) in January.

Embraer delivered EMBRAER 170-100 STD (E170) (SN 17000379) to **J-Air** in December. **Republic Airlines** took delivery of four EMBRAER 170-200 LRs (E175) (SN 17000381, 17000382, 17000383 & 17000384). The airplanes are operated for **American Eagle**. **Flybe** received two E175s (SN 17000357 & 17000359). **BOC Aviation** leased the second of six EMBRAER 190s (SN 19000654) to **KLM** subsidiary, **KLM Cityhopper**. The remaining E190s will arrive by April 2014. **Aeromexico Connect** leased the first of two E190s (SN 19000651) from **CIT Aerospace**. **Air Astana** took delivery of E190 (SN 19000653), and **Conviasa**, Venezuela, acquired its

Sukhoi delivered the fourth **Sukhoi Superjet 100-RRJ-95B** (SN 95036) to **Interjet**, Mexico, in December, after it was fitted out by **SuperJet International** in Venice, Italy. According to **Sukhoi**, the first three **Interjet** SSJ100s dispatch reliability was greater than 99 percent and their average daily utilization was more than 9 flight hours, with a maximum utilization of 11 flight hours. The fifth and the sixth Superjet for **Interjet** are currently being completed at **SuperJet International**. **Interjet** ordered 20 SSJ100 and optioned 10 more. **Sukhoi** handed over the third **Sukhoi Superjet 100** (SN 95031) to Indonesian airline **Sky Aviation** in mid-December. The third **Sukhoi Superjet 100** built to full contract specifications was delivered to **Aeroflot Russian Airlines** in mid-December. The aircraft (SN 95035) was named after **Pyotr Khmelnitsky**, an honored Soviet pilot, and veteran of **Aeroflot**. Twenty-two SSJ100s have been delivered to Russian and foreign customers as of December 2013.

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ninth and tenth E190s (SN 19000645 & 19000646). It has three more on order. **Azul Linhas Aereas Brasileiras** took delivery of two EMBRAER 190-200 IGWs (E195) (SN 19000650 & 19000652). **Saratov Airlines (Saravia)** leased two used E195s (SN 19000157 & 19000169) from **GECAS**. The planes entered service in January, and are the first E195s to operate in Russia.

Turboprop Aircraft

ATR. **Wings Air**, Indonesia, received three ATR 72-600s (SN 1104, 1106 & 1118) in December, for a total of seven. **Garuda Indonesian** leased the second of 20 -600s (SN 1132) from **Nordic Aviation Capital (NAC)**. **Malindo Air**, Malaysia, accepted two -600s (SN 1123 & 1130), and **Firefly** purchased its second -600 (SN 1128). **UNI Airways**, Taiwan, received its seventh -600 (SN 1125), and **Avianca** acquired its fourth -600 (SN 1126). **Aer Arann/Aer Lingus Regional** acquired its sixth -600 (SN 1129).

Nordic Aviation Capital leased one ATR 72-500 (SN 529) to **Blue Islands Limited**, Guernsey, and sold two ATR 72-212s (SN 345 & 434) to **Hawaii Island Air**. It also sold two ex-**American Eagle Airlines** -212s (SN 410 & 431) to **STS Component Solutions**. The aircraft are currently being disassembled by **STS**. **NAC** is the largest turboprop lessor in the world, and has more than 200 aircraft including, ATR 42, ATR 72, Dash 8, CRJ1000, 737, A320, Fokker 50 and Saab 2000 aircraft in its fleet.

Bombardier. **WestJet Encore** accepted its seventh and eighth 8Q-402 NextGens (SN 4460 & 4463), and **Horizon Air** received one -402 NextGen (SN 4459), in December.

Antiques and Other Junque

Delta Air Lines retired its last two **McDonnell Douglas** DC-9-51s (SN 48101 & 48107, delivered in 1979) on January 6. It was the last major U.S. carrier to operate DC-9s, and the jets were the oldest to be operated by a U.S. airline. The last flight was from Minneapolis to Atlanta. The DC-9 fleet was replaced with more fuel-efficient 737NGs and 717-200s on a "capacity-neutral basis," **Delta** said. In October, **Delta** put the first of its 100 ordered 737-900ERs into service. They are equipped with Wi-Fi connectivity and the **Boeing Sky Interior**. The airline recently ordered 30 narrow body A321-200s, which will be delivered in 2016. "The DC-9 has been a workhorse in our domestic fleet while providing a reliable customer experience," said **Nat Pieper**, **Delta's** vice president of fleet strategy. "The aircraft's retirement paves the way for newer, more efficient aircraft." Since 2008, the airline returned or retired more than 350 passenger planes from its fleet, including 50-seat CRJ200s, DC-9s and turboprop Saab 340s. It will soon retire its 117-strong MD-80 fleet.

Harbin Aircraft Industry Group (HAIG), a subsidiary of **Aviation Industry Corporation of China (AVIC)** delivered two Y12E aircraft to Colombian airline **SATENA** in December. This marks the first Y12 aircraft to enter civil aviation service in Latin America. The Y12 aircraft was designed and developed by **AVIC** as a light and general purpose aircraft. The high-wing, twin-turboprop aircraft can be used for passenger and cargo transportation, as well as parachute jumping and touring. **HAIG** has sold 130 Y12 series aircraft to more than 20 countries.

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VivaAerobus will begin phasing out its 19 737-300s, with four or five aircraft leaving the fleet this year. The airline will lease A320s to replace the outgoing 737s, starting in March. It ordered 52 new A320s with deliveries beginning in the second quarter of 2015. By mid-2016, the airline will operate an all-A320 fleet.

GA Telesis announced that it acquired one **Boeing** 737-800, one 757-200, two 777-200ERs, one 747-400, one 737-700, and three CF6-80C2B engines in the second and third quarters of 2013. The company also added three **Airbus** A320-200s, one 757-200, two 767-200ERs, two 747-400s, one CFM56-5B engine, and two additional **Rolls Royce** Trent 800 engines to its lease portfolio. There were several more acquisitions, and sale/lease agreements that were set to close in in the fourth quarter. **GA Telesis** leased or sold one 737-800, 747-400, nine CF34-3 engines, one CFM56-5C, three PW4400 engines, two CF6-80A engines, one CFM56-5A1, one CFM56-5B3, one CF6-80C2B1F, one PW4077, five JT8D-219s during this period.

KLM UK Engineering, a **KLM** subsidiary operating within the **AFI KLM E&M** network and based at Norwich, is a narrowbody aircraft maintenance and repair provider. It built a new facility for the dismantling and recycling of aircraft and opened it on December 11. The new recycling facility is unique to East Anglia and is one of a handful of aircraft recycling centers in Europe. It offers a cradle-to-grave service for a whole range of aircraft including **Boeing** 737s, **Airbus** A320s, **Fokker** F.50s, F.70s, F.100s and **BAe** 146/Avro RJs. **KLM UK Engineering** is now licensed to service aircraft from the day they commence operations, until they are removed from service, a potential time frame of 20 years or 18 million air miles, the company said.



From Aviation Safety Foundation

IRKUT Corporation Antonov 12 cargo plane (RA-12162, SN 3341509) crashed near the **Batareynaya** railway station, Russia, on December 26. All six crew members and three technicians were killed. The airplane was carrying spare parts for the **Irkutsk Aviation Plant** located at the **Irkutsk-2 Airport**. Russian investigators took fuel samples, retrieved the flight recorders and collected technical and maintenance documentation about the aircraft. The probe also gathered recordings of exchanges with air traffic control, crew medical data and information on radio-navigation services at the airport.

Saudi Arabian Airlines Boeing 767-3W0ER (HS-BKE, SN 28264) was damaged in a landing accident at **Madinah-Mohammad Bin Abdulaziz Airport**, Medina, Saudi Arabia, on January 5. The airplane carried approximately 315 passengers and 29 of them were injured during the evacuation. The right hand main gear failed to deploy, so the airplane came to rest on its Number 2 engine, left gear and tail, leaving the nose landing gear off the ground. The 17-year old 767 was sub-leased from **Orient Thai Airlines** in August, and is owned by **Air Lease Corp.**

Aeronaves TSM McDonnell Douglas DC-9-33RC freighter (XA-UQM, SN 47191) was damaged in a landing accident at **Saltillo Airport**, Mexico, on January 18. The 45-year-old airplane's nose gear collapsed after it veered off the runway. No one was injured but it seems likely that the DC-9 will be written off.

AVMARK CAPABILITIES

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

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

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

Sample of Avmark Publications

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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
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MARKET OVERVIEW

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

Airline Association (RAA):

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ATR 42-300

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

Specifications	
Accommodations	
Passengers*	46
Pilot	2
Cabin Attendants	1
Powerplant	
2 Pratt & Whitney PWC120 Turboprops	1,800 SHP / 1,342 kW
Hamilton Propellers	4 blades
External Dimensions	
Length	74 ft 8 in
Wing Span	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 / sq ft

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

Optional Equipment: KLN 900 GPS/W, FMS, Area Navigation (RNAV), Microwave Landing System, VLF Omega 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	\$906 \$833
Cost per Available Seat Mile - \$	12.33 8.65
Cost per Airplane Mile	\$5.67 \$4.44
Cost per Seat Block Hour	\$16.67 \$15.1

Note: Data from DOT Airline Reports.

ATR 42-300

PAYLOAD VS. RANGE

Range (nm)

Distance (nm)

ATR 42

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

The baseline aircraft is the ATR 42-300/320 powered respectively by PW120/121 engines. The latest version is the ATR 42-500 powered by PW127x engines and Hamilton six-bladed propellers. Thus increasing the payload to 12,015 lb and the cruise speed to 300 kts.

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

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

TYPICAL CABIN CONFIGURATION

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

US \$ 350.00

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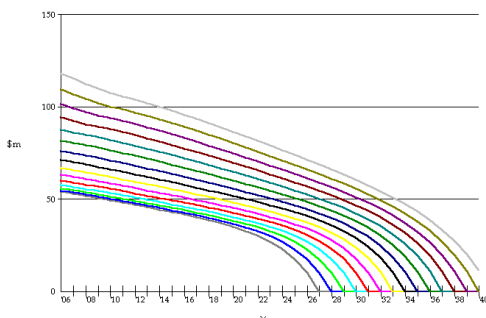
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CAVAS Graph



Profit & Loss Report

Aircraft Type	Period	1	2	3	4	5	6
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	8,826,673	8,816,110
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	58,844,626	58,774,411
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	29,776,631	29,706,814	29,636,997	29,567,180
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 & 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 A320-200
- 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 to \$118.00m

Estimated Life: 35 years

File No: 013

Search Term

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Aircraft: Airbus A340-300 - Widebody 4 Engine Passenger

CAVAS Figures

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
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	54.73	56.56	58.99	62.01	65.62	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	89.32	95.34	101.54	107.94
2011	49.28	49.99	51.28	53.11	55.51	58.47	62.03	66.28	71.20	76.70	82.36	88.24	94.34	100.62	107.09
2012	48.06	48.78	50.08	51.91	54.31	57.26	60.81	65.05	70.05	75.54	81.20	87.16	93.42	99.86	106.44
2013	46.83	47.56	48.87	50.70	53.10	56.05	59.60	63.83	68.82	74.30	80.04	86.02	92.24	98.69	105.31
2014	45.59	46.33	47.64	49.47	51.87	54.82	58.37	62.60	67.58	73.05	78.76	84.70	90.94	97.46	104.14
2015	44.34	45.08	46.39	48.22	50.62	53.57	57.12	61.35	66.32	71.79	77.50	83.52	89.84	96.43	103.10
2016	43.08	43.82	45.13	46.96	49.36	52.31	55.86	60.09	65.05	70.51	76.21	82.22	88.62	95.20	101.86
2017	41.81	42.55	43.86	45.69	48.09	51.04	54.59	58.82	63.77	69.22	74.91	80.91	87.30	93.96	100.69
2018	40.53	41.27	42.58	44.41	46.81	49.76	53.31	57.54	62.49	67.94	73.63	79.62	86.00	92.74	99.51
2019	39.24	40.00	41.31	43.14	45.54	48.49	52.04	56.27	61.22	66.67	72.35	78.33	84.70	91.43	98.19
2020	37.95	38.71	40.02	41.85	44.25	47.20	50.75	54.98	59.93	65.38	71.05	76.92	83.28	89.91	96.64
2021	36.66	37.42	38.73	40.56	42.96	45.91	49.46	53.69	58.64	64.09	69.76	75.73	82.08	88.70	95.41
2022	35.37	36.13	37.44	39.27	41.67	44.62	48.17	52.40	57.35	62.80	68.56	74.52	80.86	87.47	94.16
2023	34.08	34.84	36.15	37.98	40.38	43.33	46.88	51.11	56.06	61.51	67.26	73.21	79.54	86.14	92.82
2024	32.79	33.55	34.86	36.69	39.09	42.04	45.59	49.82	54.77	60.22	65.96	71.91	78.23	84.82	91.49
2025	31.50	32.26	33.57	35.40	37.80	40.75	44.30	48.53	53.48	58.93	64.67	70.71	77.02	83.60	90.26
2026	30.21	30.97	32.28	34.11	36.51	39.46	43.01	47.24	52.19	57.64	63.38	69.41	75.72	82.29	88.94
2027	28.92	29.68	30.99	32.82	35.22	38.17	41.72	45.95	50.90	56.35	62.08	68.11	74.42	80.97	87.61
2028	27.63	28.39	29.70	31.53	33.93	36.88	40.43	44.66	49.61	55.06	60.79	66.82	73.13	79.67	86.30
2029	26.34	27.10	28.41	30.24	32.64	35.59	39.14	43.37	48.32	53.77	59.50	65.53	71.84	78.37	85.00
2030	25.05	25.81	27.12	28.95	31.35	34.30	37.85	42.08	46.93	52.38	58.11	64.14	70.45	76.97	83.59
2031	23.76	24.52	25.83	27.66	30.06	33.01	36.56	40.79	45.74	51.19	56.92	62.95	69.26	75.77	82.38
2032	22.47	23.23	24.54	26.37	28.77	31.72	35.27	39.50	44.45	49.90	55.63	61.66	67.97	74.47	81.07
2033	21.18	21.94	23.25	25.08	27.48	30.43	33.98	38.21	43.16	48.61	54.34	60.37	66.68	73.17	79.76
2034	19.89	20.65	21.96	23.79	26.19	29.14	32.69	36.92	41.87	47.32	52.95	58.98	65.29	71.78	78.36
2035	18.60	19.36	20.67	22.50	24.90	27.85	31.40	35.63	40.58	46.03	51.66	57.69	63.99	70.47	77.04
2036	17.31	18.07	19.38	21.21	23.61	26.56	30.11	34.34	39.29	44.72	50.25	55.98	62.28	68.75	75.31
2037	16.02	16.78	18.09	19.92	22.32	25.27	28.82	33.05	37.90	43.33	48.86	54.59	60.89	67.35	73.89
2038	14.73	15.49	16.80	18.63	21.03	23.98	27.53	31.76	36.71	42.14	47.67	53.40	59.70	66.15	72.68
2039	13.44	14.20	15.51	17.34	19.74	22.69	26.24	30.47	35.42	40.85	46.38	52.11	58.41	64.85	71.37
2040	12.15	12.91	14.22	16.05	18.45	21.40	24.95	29.18	34.13	39.56	45.09	50.82	57.12	63.55	69.97
2041	10.86	11.62	12.93	14.76	17.16	19.91	23.46	27.69	32.64	38.07	43.60	49.33	55.63	62.05	68.46
2042	9.57	10.33	11.64	13.47	15.87	18.62	22.17	26.40	31.35	36.78	42.31	48.03	54.33	60.73	67.13
2043	8.28	9.04	10.35	12.18	14.58	17.33	20.88	25.11	30.06	35.49	41.02	46.74	53.04	59.34	65.73
2044	6.99	7.75	9.06	10.89	13.29	16.04	19.59	23.82	28.77	34.20	39.91	45.62	51.91	58.20	64.62
2045	5.70	6.46	7.77	9.60	12.00	14.75	18.30	22.53	27.28	32.91	38.62	44.31	50.59	56.87	63.20
2046	4.41	5.17	6.48	8.31	10.71	13.46	17.02	21.20	25.95	31.66	37.37	43.08	48.78	54.48	60.18
2047	3.12	3.88	5.19	7.02	9.42	12.17	15.72	19.95	24.68	30.39	36.10	41.81	47.51	53.22	58.92
2048	1.83	2.59	3.90	5.73	8.13	10.88	14.43	18.66	23.39	29.10	34.81	40.52	46.22	51.93	57.63
2049	0.54	1.30	2.61	4.44	6.84	9.59	13.14	17.37	22.12	27.83	33.54	39.25	44.96	50.66	56.37
2050	-0.75	-0.01	1.30	3.13	5.53	8.48	12.03	16.26	20.85	26.56	32.27	37.98	43.69	49.39	55.10



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