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WORLDWIDE AVIATION MARKETING AND MANAGEMENT SERVICE

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Newsletter

Market Comment

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Two Bubbles About to Burst? At the 2014 Singapore Airshow, **Airbus** announced **VietJet's** \$9 billion order for 92 A320 Family aircraft, and **Boeing** announced orders for nearly 100 737NG and 737 MAX aircraft, worth approximately \$10 billion, to be delivered to airlines in the fast growing Southern and Southeast Asian markets. In the last few years, there has been an arms race to become the biggest and baddest airline in the neighborhood. At this moment, low-cost carriers are flying high in Southeast Asia due to dramatic improvements in the nations' gross domestic products and a similar growth in air travel. By the end of 2014, it is estimated that airlines in Southeast Asia will have 1,800 aircraft and most will be single-aisle jets and these numbers do not include China or India, each with a billion + population. The Southeast Asian airlines have ordered another 2,000 new jets and Asia-Pacific region's (including Australia, China, India and Japan) 3,115 single-aisle orders make up 76 percent of the **Airbus** total. **Boeing** reported 240 737 orders from the region, less than 8 percent of the **Airbus** sale total. Most of the new jets are for expansion and not for replacing older jets. The buying binge is fueled by the new standards of fuel efficiency, cheap interest rates, which are backed by Western export credits (and their money-printing central banks). The low rates made it easier for airlines to fund the relatively small upfront deposit payments needed to place headline-grabbing aircraft orders. The majority of aircraft orders came from Malaysia's **AirAsia**, run by **Tony Fernandes**, and **Lion Air**, co-founded by Indonesian businessman **Rusdi Kirana**. **AirAsia's** backlog is 337 A320 Family aircraft worth approximately \$33.7 billion at list price and **Lion Air's** backlog is 234 A320 Family and 303 737 Family aircraft worth approximately \$53.7 billion. Those airlines serve a population of some 600 million people with a combined gross domestic product of \$1.867 trillion, while the United States has 315 million people and a GDP of \$16.241 trillion – half the people and nearly 10 times the GDP. The myriad of Southeast Asian carriers' business plans were to keep fares low to attract people to fly. However, now they have saturated their home market and as they expand into other markets the other budget carriers are encroaching into theirs. The region's low cost carriers (LCC) will take delivery of nearly 230 aircraft worth over \$20 billion this year alone, at approximately one new jet every business day. **AVMARK** has said in the past that the growth is not sustainable. Now other analysts agree. **Bertrand Grabowski**, the head of aviation finance at **DVB**, Germany said, "When you run an airline, for reasons which are both economic and prestige, you want a

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new kit, so you order an aircraft. If your neighbor orders aircraft, so you order [more] aircraft. I wouldn't call it irrational exuberance but clearly everybody in Asia is ordering aircraft more than they really need.

Now it looks like airlines may reach overcapacity as the deliveries accelerate. Problems could be exacerbated by currency fluctuation which could slow general economic growth. Faced with localized overcapacity, several airlines have retrenched. Recently, **TigerAir** agreed to sell its Philippine operations to **Cebu Pacific**, and **Philippines AirAsia** bought into **Zest Air**. Consolidation may solve some of the over capacity problem, but not soon enough. We saw a rapid expansion of capacity in India several years ago. Then there were too many airlines and airplanes chasing too few passengers, and overwhelming airport capacity and infrastructure. There was also a shortage of pilots and technical staff. The result was oceans of red ink for the airlines, some consolidation and the destruction of **Kingfisher** (now a zombie airline that refuses to die). Eventually the Indian economy caught up with capacity and fares have risen to sustainable levels, enough to where **AirAsia** is encroaching from the east and Gulf airlines to the west are buying into Indian carriers.

The Southeast Asian flag carriers are also expanding their single-aisle fleets to catch up with the LLCs. The airframers are shaving their prices to poach the other's customers. **Boeing** snagged **SilkAir** from **Airbus**, and it has been working hard to keep its existing customers happy. The airline bosses are dismissive of fears of the bubble bursting. **AirAsia's** Mr. **Fernandes** said competition in Malaysia and Thailand was "irrational" even though his airline's profits are shrinking due to a price war in the Malaysian home market, caused by competition from **Malaysia Airlines** and **Lion Air's Malindo Air**. **Lion Air's** Mr. **Kirana**, said consolidation in the sector is "inevitable" given the large number of companies in the low-cost market, but who will merge with whom? Every big player has a subsidiary in the other important markets. The small affiliates will certainly not merge with each other along national lines, considering the ownership structure, and the big players, **AirAsia**, **Lion Air**, **Jetstar** and **Tigerair** currently cannot perform a cross-border merger, because of each nation's airline ownership rules. Competition will be a big melee with only one or two big winners and lots of losers, which will include little airlines, the airframers and the financiers.

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Even **Boeing**, the smaller player in the market sees a change. **Dinesh Keskar**, Vice President for Asia-Pacific and India Sales at **Boeing Commercial Airplanes**, said, "Nobody is going to place a future order unless they know that whatever they are taking in today is being absorbed in the market at a reasonable yield and a reasonable load factor level. I wouldn't say the party is ending in the near-term but the rate of growth will slow down."

At the Airline Economics Lessor's Conference, the mood was ebullient. The aircraft finance industry is booming as yield-hungry investors gamble on growing demand for air travel. There are concerns over emerging markets, but bankers and lessors eagerly fund the \$100 billion-per-year jetliner industry. Several years ago, governments enacted tough capital regulations which caused European banks to cut back financing of new aircraft. The Irish financiers said new money was pouring into the promising sector in their wake, and Asian banks filled the gap. Since the recession ended, U.S. airlines have recovered and oil prices are relatively calm. This prompted long-term investors such as insurers and pension funds, to jump into the market to reap higher returns than can be gained from next to zero interest rates. **Daniel Hartnett**, a partner at law firm **Kaye Scholer** said, "We've seen the pensions [and] endowments looking to make up lost investment time, and more hedge fund investors looking for stable spread over time, but not necessarily a super-sized return to make it work." They are now using sophisticated investment tools such as **Enhanced Equipment Trust Certificates (EETC)** (a secured corporate bond structure used by U.S. airlines)

Boeing Does Not Worry About Its 737 Backlog. It is cushioned against currency market turmoil in developing nations such as India and Indonesia, **Boeing** Vice President and 737 General Manager **Beverly Wyse**, said. The airframer is "not seeing a bubble in the single-aisle market," she said, because "Boeing has a backlog of 3,675 orders that is strong in terms of quantity, financial strength of customers and its global reach." More than half its backlog of 3,675 737s are from airlines in North America (1,370), Europe (721) and the Middle East (167), where currencies are more stable. About 47 percent of **Boeing's** total backlog is from North America and Europe and 58 percent of the 2014 deliveries will go to airlines in those regions. Several large economies in Asia are in a tailspin due to the **U.S. Federal Reserve Bank's** change in monetary policy, i.e. "qualitative easing" where the **Fed** is slowly cutting back on the number of bonds that it is buying. Investors and analysts are starting to pay closer attention to the record purchases placed by low-cost carriers. They started questioning whether there will be a correction after four years of growth in the aerospace market. **Bank of China's** leasing company, **BOC Aviation** is still bullish. Its Senior VP for Aircraft Sales **Terry Cooke** said, "If we could get more 737 Next Gens, we would have them because we're constantly getting pinged" by airlines looking for the narrowbody jet. Ms. **Wyse** said that aerospace manufacturers are doing a "much better job of monitoring production versus demand," not like the previous boom-and-bust cycles. **Ray Nadol** at **JP Morgan** was more circumspect. "Economic dislocation in emerging market could pressure aircraft demand and potentially even bring the cycle to an end," he said. **Steve Rimmer**, CEO of **Guggenheim Aviation Partners** is still officially optimistic. He said the large volume of orders headed for Asia may test the manufacturers' ability to manage its production, so far there are no signs that airlines have overindulged on new jet purchases. "There are no white tails," he said, where the airframers complete aircraft that have been cancelled by their original purchaser. **Guggenheim's** actions may speak louder than Mr. **Rimmer's** words. The lessor had in excess of \$2.7 billion of commercial aviation assets under management in 2012. Since then, it sold off all of the six 747-400EFs and three 777Fs that it bought new from **Boeing**.

to fund foreign airlines because of a recent treaty to protect lenders. Investors are also placing funds privately with airlines to avoid dilution when public offerings are over-subscribed. Leasing firms, which own or manage 40 percent of the world airline fleets, are still very active. With all the money floating around, fewer airlines need to use Export Credit Agencies (ECA) in Europe or the U.S., which recently raised their fees. The surplus of funding options for new aircraft means yields are falling and so investors are now looking at funding older aircraft. This market is much more risky and the unwary will be burned, like they were in the 1980s, when the bottom of the used aircraft market collapsed. Financiers expect interest rates will rise as the Western central banks slow their economic stimulation. Cheap money boosted the manufacturers' sales, but may have encouraged weak airlines to over-order new aircraft. Still the airframers think strong airlines will step in and pick up the white tails. The conference goers recognized that the emerging markets, which dominated traffic growth this decade, were becoming unstable. At the **World Economic Forum** in Davos, the buzz was that the "gold rush" of upstart economies was over. The Turkish lira fell to a new low and political instability in Turkey, Thailand and the Ukraine, were cited as risks, and the currencies in Argentina, Brazil, India and Venezuela were red flags. Even China is seeing its growth slump. The bright spot in the industry is the U.S. airlines effective management of capacity, coupled with fares that are high enough to cover costs. This is the first time since the era of the **Civil Aeronautics Board** (ended in 1979) that most U.S. airlines are profitable. The burgeoning airlines in Asia have not shown such restraint. One attendee summed up the consensus, "The margin for error is non-existent. A lot of things can go awry. Cheap money can sustain the industry, but things can get very different when it turns." **AVMARK** thinks the best way to escape a bursting bubble is to be the first entity to leave the market. Like the housing market of 2007, when everyone else was jumping into the market, the smart money was jumping out. Aircraft finance is risky, and lots of companies will be stuck with distressed assets during the next downturn, which may not come this year, but will come eventually.

Airbus Orders

Airbus sold 10 new aircraft in the first month of 2014 and delivered 39 aircraft ranging from the A319 to the A380. Last month, **American Airlines** acquired seven A321ceo aircraft, raising its A321 commitments to 137. The airline took delivery of its first ordered A321 in January, and it also operates 15 leased A319s and seven leased A321s. **Tibet Airlines** purchased another A319ceo for a total of 10. **Libyan Airlines** placed a repeat order for two A350s. The airline also switched its four A350-800 orders to the -900 type when it added two new A350-900s. The manufacturer lost existing sales for three A319s and two A320s during January, leaving **Airbus** with a positive balance of five net orders. The company delivered 39 aircraft, up four from the 35 deliveries in January 2013. This illustrates the manufacturer's higher production rates. Thirty customers received 29 A320 Family aircraft, nine A330s and one

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) tests 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.

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A380. At the end of the month, **Airbus** backlog stood at 5,525 aircraft comprised of 4,272 A320 Family jetliners including 2,610 of the A319/A320/A321neo (new engine option) versions, 258 A330s, 814 A350s, and 181 A380s.

VietJetAir, Vietnam, finalized a major order for the A320 Family in February, to meet its future expansion plans. The contract covers firm orders for 14 A320ceo, seven A321ceo, and 42 A320neo aircraft. The airline took 30 purchase rights, and will lease eight A320ceo Family aircraft from third party lessors. The contract was signed at the **Singapore Airshow**. The Memorandum of Understanding between **VietJetAir** and **Airbus** was announced in September. **VietJetAir** took to the skies in December 2011 as the first private airline in Vietnam to operate domestic and international flights. Today it flies 11 leased A320s on 20 routes, including domestic destinations, Bangkok, Seoul and Kunming, China. The airline's 92 **Airbus** aircraft were valued at \$9 billion (an average of \$100 million each) at list prices. The aircraft will

be delivered over the next 10 to 12 years, and the first few aircraft will arrive in the last quarter of 2014. The planes will compete with **AirAsia** and **Lion Air** in the fast-growing low-cost market in Southeast Asia. Vietnam is one of the world's three fastest-growing markets, and it is currently dominated by state-run flag carrier **Vietnam Airlines**.

BNP Paribas and **VietJetAir** reached a mutual agreement at the **Singapore Airshow**, where **BNP Paribas** will be the adviser and financing arranger for **VietJetAir's** aircraft order. The bank will arrange financing for the first three A320 Family aircraft that the airline will receive in 2014. They are valued at \$270 million (\$90 million each). **BNP Paribas** will be **VietJetAir's** strategic partner in other aircraft financing plans in the future. The international bank serves 128 airlines and aircraft leasing firms. In 2012 and 2013, the bank helped to arrange financing for 125 aircraft that were worth \$7.4 billion in 2012.

Airbus Orders, Deliveries and Backlog January 2014

JAN ORD	JAN DEL	JAN CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			A318		
-0-	-0-	-0-	79	79	-0-
			A319		
1	2	-3	1,524	1,397	127
			A320		
-0-	21	-2	6,609	3,565	3,044
			A321		
7	6	-0-	1,984	883	1,101
			A330		
-0-	9	-0-	1,313	1,055	258
			A350		
2	-0-	-0-	814	-0-	814
			A380		
-0-	1	-0-	304	123	181
This Month			This Year		BL
10	39	-5	5	39	5,525

Airbus sold 13,820 aircraft and delivered 8,295 as of January 31, 2014. Five orders were cancelled. Total orders, deliveries and backlog include cancellations and order changes.

Doric Lease Corp. renamed itself **Amedeo** in February, simultaneously with signing its firm contract for 20 A380s worth \$8.3 billion at list price. The lessor said the rebranding initiative was part of a vision to build a dedicated and actively managed widebody aircraft acquisition and leasing platform that is independent from the larger **Doric GmbH (Doric Group)** financial operation. It will continue focusing on the widebody leasing sector, acting in a principal investment capacity with respect to both aircraft acquisitions and sale and leaseback transactions. The company announced its intention to buy the 20 A380s at the **50th Paris Airshow** in June 2013. **Amedeo** and **Airbus** officials signed the final agreement at the biennial **Singapore Airshow**, Asia's largest aerospace event. The Dublin-based company has made progress in placing the world's largest airliner with new customers, but declined to give details. The A380s will be delivered between late 2016 and 2020, and the engine type has not been selected. **Mark Lapidus**, **Amedeo's** chief executive officer, said, "The aircraft is unrivaled in terms of its economic performance. This will help the airlines that are perhaps shy in a difficult financial environment." **Amedeo's** A380s can be fitted with 11-abreast seating in economy, which will add another 35 seats in tourist class. The current A380s feature 10-across seating and 19 inch seat pitch. The A380 can easily carry 525 people in the standard three classes, but most operators have fitted the plane with opulent cabins and market the aircraft as a luxury flagship. **Air Austral** is the only airline to order the extra-high-density version of the A380 to date. Its two A380s will carry 840 passengers in all-tourist seating, more than twice the capacity of **Korean Air's** 407-seat super jumbo jets. **Airbus** launched a new marketing strategy last year, which called for increasing the three-class configuration from 525 seats to 558 by moving all premium seating to the upper deck. The **Amedeo** A380s can be configured to carry more than 600 passengers. Mr. **Lapidus** said, "Airbus miss-sold the A380 as a luxury airplane, then they allowed people to move things on the aircraft too much. With the A380, Airbus started with 'a big piece of real estate do what you want to do' That has not helped with the key factors that are great on this aircraft which are the lowest seat cost economics of anything flying today or in five years." **Amedeo** is marketing to operators outside the existing customer base and is concentrating on simpler, higher density configurations, which will lower reconfiguration costs and ease the transfer between operators.

The Indian Ministry of Civil Aviation recently approved the operation of **Airbus A380s** in India. **Dr. Kiran Rao**, **Airbus** EVP Strategy and Marketing said, "This is good news for Indian airports and the Indian flying public." The fuel-efficient A380 has the lowest operating costs per seat and offers the highest revenue generating potential, which benefits the airlines and the travelling public. Further, he said the booming economy, a growing middle class, migration, urbanization and tourism are all pushing India to become one of the world's fastest growing aviation markets. "Larger aircraft like the A380 combined with higher load factors make the most efficient use of limited airport slots and contribute to rising passenger numbers without additional flights to capture this growth." Indian Civil Aviation Minister **Ajit Singh** said, "The operations of A380 aircraft would be subject to overall traffic entitlements within the bilateral **Air Service Agreements (ASAs)** with different countries." A380s will serve the country's four main airports, New Delhi, Mumbai, Bangalore and Hyderabad. India had banned the A380 due to concerns that foreign carriers may further hurt state-run **Air India** by grabbing a larger share of international traffic. Lifting the ban will now benefit **British Airways**, **Emirates**, **Lufthansa** and **Singapore Airlines** which currently operate the super-jumbo and fly to India too. When **Etihad** and **Qatar Airways** take delivery of the aircraft, they will be able to use it on their Indian routes. No Indian airlines have purchased the A380, except **Kingfisher**, which cancelled its

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“We have agreements with **Airbus** [about the cost of reconfigurations] if we are starting from the right configuration in the first place, and that broadly is all-economy downstairs and premium configurations upstairs,” he says. “That makes reconfigurations no more costly than on an A330.” **Amedeo** is marketing the A380 to airlines that want several aircraft to serve their international routes, but want to avoid the large upfront financial commitments necessary to order the planes. The lessor will also target customers that are “large network carriers” – the world’s top 10 airlines – who do not have the A380.” He said, **Amedeo** needs to sign up three or four carriers to make the order work, and expects to announce the first leases within a year.

Aerolíneas Argentinas signed a purchase agreement for four **Airbus** A330-200s to renew and consolidate their widebody fleet. The airline selected **GE’s** CF6-80E1 engines to power the A330s. The new A330s will be deployed on medium and long-haul routes from **Aerolíneas’** Buenos Aires hub to destinations throughout Latin America, Europe and the United States. The flag carrier currently operates eight A340-300s, four A340-200s and four A330s.

Kuwait Airways, the national airline of Kuwait, confirmed its order for 25 aircraft, including 10 A350-900 and 15 A320neo Family aircraft in February. The new planes are part of the airline’s fleet renewal strategy; it already operates three A320s, three A310s, five A300s and four A340s. **Kuwait** will use the A350-900s on its long haul routes, while the A320neo operate its regional route network. The A320neos will be fitted with new more efficient engines and Sharklet wing tip devices, which will deliver up to 15 percent in fuel savings over the standard A320. The A350 XWB (Xtra Wide-Body) will accommodate **Airbus’** 18-inch economy seat-width and will also bring a 25 percent improvement in efficiency compared with existing aircraft in this size category.

Airbus’ Latest Global Market Forecast (GMF) stated that airlines in the Asia-Pacific region will lead global demand for larger and more eco-efficient aircraft over the next 20 years. Airlines in the region will operate approximately 10,940 new passenger and cargo aircraft from 2013-2032, worth \$1.8 trillion at list prices. These numbers represent 37 percent of all new deliveries worldwide in the next two decades. The region will account for 42 percent of the global market in terms of aircraft value, reflecting the higher proportion of widebody aircraft required in Asia-Pacific. The region’s passenger fleets will more than double, from 4,960 aircraft today to over 12,130 jets in 2032, due to the area’s higher than average annual traffic growth of 5.8 percent. The airlines will replace nearly 3,770 aircraft that are in service today. Growing urbanization means that there will be 90 airports serving more than one million passengers per year by 2032. Traffic will concentrate around these cities, so larger aircraft will meet demand without straining airport capacity. As a result, **Airbus** forecasts that carriers will acquire 4,130 widebody aircraft (46 percent of worldwide demand) over the next 20 years. The airlines will need 3,350 twin-aisle, twin-engined aircraft, and 780 very large aircraft (+400 seats) to serve the largest and in some cases most capacity-constrained airports. The growth of new low-cost airlines stimulated demand for single-aisle aircraft. In the next 20 year, the region will need 6,810 new narrowbody aircraft accounting for a third of the world total. The average aircraft capacity operated by low-cost carriers has grown by nearly 50 percent since 2000. The Asia-Pacific region will dominate the global cargo market. **Airbus** forecasts the freighter fleet will triple from 300 today to approximately 970 by 2032, equaling a third of the global freighter fleet. Many of the aircraft will be converted from passenger models, but around 270 will be new. Thirty percent of the new freighters will be in the 45 to 70 ton, mid-size widebody aircraft.

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Airbus' A350 XWB (SN 003) Development Aircraft completed cold weather trials at Iqaluit, Canada, where the temperatures reached down to -28°C. The scope of the trials included: APU and engine starts after cold soak; verifying system behavior; low-speed taxi and rejected take-offs. It also performed a local flight as planned. The test aircraft had just completed the high altitude tests in Bolivia. It was then flown to Doha's new **Hamad International Airport**, on its way to the **Singapore Airshow**. The airplane was presented to the A350 XWB launch customer, **Qatar Airways**, which will take delivery of its first A350-900 in the fourth quarter of this year. During the visit, the aircraft was welcomed by **Qatar Airways CEO Akbar Al Baker** as well as government officials, who were eager to see the aircraft perform. **Airbus** integrated testing and pilot demonstrations as part of the A350s flight to Singapore where it was shown to the general public for the first time. **Airbus** performed some warm weather tests at Doha and let two **Qatar Airways** pilots fly the aircraft. During the airshow, two **Singapore Airlines** pilots spent some time at the controls. All of the pilots were current on **Airbus** equipment and they found the transition to the A350 to be straightforward, **Airbus** said. After the airshow, the A350 will operate its longest flight to date when it flies non-stop from Singapore to Toulouse in approximately 14 hours. Since the A350 XWB's (SN 001) first flight on June 14, 2013, the two test aircraft have flown more than 900 hours during close to 200 test flights. The total A350 XWB flight test campaign will accrue around 2,500 flight hours with five aircraft. The flight testing will lead to the certification of the A350-900 by the European EASA and US FAA airworthiness authorities, by the last quarter of this year.

Boeing Orders

Boeing Sold 38 New Aircraft in January. **Alaska Airlines** ordered two more **Boeing 737-900ERs** in mid-January. The deal 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. **Alaska** has ordered 45 737-900ERs and taken delivery of 14 of them. The airline has outstanding options for 31 737-900ERs and firm orders for 20 737 MAX 8s and 17 737 MAX 9s. **Air Algérie** signed a contract in early January to buy eight Next-Generation 737-800s worth \$724 million at list prices. All eight will be delivered by the end of 2016. The Algerian flag-carrier currently operates 17 737-800NGs and

Boeing January 2014 Orders, Deliveries

JAN ORD	JAN DEL	JAN CANX	TOTAL ORD	TOTAL DEL	BACK LOG
			737		
33	35	-3	11,575	7,900	3,675
			747		
-0-	-0-	-0-	1,537	1,482	55
			767		
-0-	-0-	-0-	1,110	1,061	49
			777		
4	6	-0-	1,548	1,170	378
			787		
1	4	-0-	1,031	118	913
This Month			This Year		BL
38	45	-3	35	45	5,070

Boeing sold 24,331 aircraft and delivered 19,261 as of January 31, 2014.

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

Sales totals are net – minus three cancellations.

Boeing sold 38 new aircraft in 2013.

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five 737-600NGs. **Jackson Square Aviation** purchased three 737-800NGs. At nearly the same time, **Boeing** reported three 737-800 cancellations by **Aeromexico**. One **Unidentified Customer** ordered 20 737 MAX aircraft. Another **Unidentified Customer** committed to buy four 777F freighters. A **Business Jet/VIP Customer** purchased one 787-8 executive jet.

Boeing Delivered 45 Aircraft in January, including four 787s. It also handed over 35 737NGs and six 777s. The manufacturer lost three 737 orders last month.

LAM – Linhas Aereas de Mocambique announced its order for three Next-Generation 737-700 airplanes. The order is valued at \$228 million (\$76 million each) at list prices, and includes purchase rights for three more 737NGs. The firm order will be filled in 2015, 2016 and 2017. The order was formally signed in November 2013 and listed as “unidentified” on the **Boeing Orders & Deliveries** website. The purchase was part of the Mozambique flag-carrier’s long-term strategy to provide greater route flexibility to and from the southern African nation. **LAM’s** new 737-700s will be fitted with **Boeing’s** latest **Performance Improvement Package (PIP)**, delivering two percent greater fuel efficiency and the **Boeing Sky Interior**. The 737s will be fitted with 126 seats in a two-class configuration. **LAM** is based at **Maputo International Airport** and currently operates domestic and regional flights across southern Africa with one 737-500, one 737-200Adv, two EMBRAER 190s, one ERJ-145 and three Dash 8Q-400s. It reportedly will lease a new 737-700 from an un-named source this year.

SpiceJet, an Indian budget airline controlled by billionaire **Kalanithi Maran**, agreed to buy 38 737 MAX jets valued at about \$3.9 billion. The airline ordered 30 new aircraft and will swap eight of its 17 existing 737-800NGs orders for the upgraded MAX model. The carrier will also take options for up to 42 more jets. The first MAX jets will be delivered in 2018. **Boeing** was eager to sell the first MAX jets in the world’s fastest-growing aviation market, and where **Airbus** is providing medium-range twinjets to most of India’s airlines. **Boeing** said unidentified airlines bought 164 737s at the end of December and it is possible that the **SpiceJet** order was included. **SpiceJet** operates 25 787-800s and six 737-900ERs. The MAX development is on schedule and it will fly in 2016 and the first deliveries are due in 2017. **Boeing** has sold more than 1,700 737 MAXs, according to its website. **Boeing** forecast that India will need 1,450 planes in the next 20 years, including 1,201 single-aisle airplanes.

Cargolux Airlines ordered its 14th 747-8 Freighter at the **Singapore Airshow**, in February. The order was valued at \$357.5 million at list prices. **Cargolux’** interim president and CEO **Richard Forson** said, “The **Cargolux Board of Directors** approved the order of our 14th 747-8 Freighter almost 35 years to the day that the airline took delivery of its first 747 Freighter. This shows how pleased we, as an all-747 cargo operator, are with the performance and economics of this new generation aircraft.” **Cargolux** took delivery of the first production 747-8 Freighter in October 2011 and now has nine 747-8Fs in service. It was also one of the launch customers for the 747-400F Freighter and received the first 747-400F in November 1993. The all-**Boeing** carrier also operates 10 747-400Fs and -400SFs. **Boeing** started delivering 747-8Fs with performance-improved engines last December as part of the **Performance Improvement Package (PIP)** program. The engines increase the airplane’s fuel efficiency by 1.8 percent.

SunExpress, Turkey, finalized an order for 25 Next-Generation 737-800s and 15 737 MAX-8 airplanes in February. The order was valued at more than \$3.8 billion at list prices, and it includes options for 10

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additional 737 MAX-8s. The first of the new -800NGs will arrive next year. The airline started services in October 1989 with new 737-300s and began to operate 737-800NGs 10 years later. It currently flies 44 737-700s and -800s. The order is the largest in the airline's 24 year history, and brings the total number of 737 MAX orders to date to nearly 1,800.

The U.S. Navy is purchasing 16 more P-8A Poseidon Maritime Patrol and Reconnaissance aircraft. The contract is valued at \$2.4 billion, and will grow the maritime patrol fleet to 53. The order marks a transition from the preliminary low-rate production to full production. **Boeing** has delivered 13 P-8As to the Navy to date. The first patrol squadron was deployed to Kadena, Japan in December 2013. The P-8A is based on **Boeing's** Next-Generation 737-800 commercial airplane, and the **Navy** plans to purchase 117 P-8As to replace its **Lockheed** P-3 fleet.

Boeing delivered a record number of jets to China in 2013 and plans to hand over a similar number of aircraft this year. The manufacturer supplied 143 units to Chinese airlines last year and intends to deliver at least 140 aircraft in 2014. **Boeing** won orders for more than 230 new aircraft from Chinese airlines and lessors. Both **Boeing** and **Airbus** forecast that China will pass the U.S. as the world's largest market by 2032. China's economic expansion is making air travel affordable to more people, which is increasing demand for airplanes. Worldwide, airlines are take advantage of low-cost financing to replace their older models with new, fuel-efficient ones, so aircraft orders and production are at record highs. **Boeing** sold 1,355 new jets in 2013, up from the 1,338 in 2012.

An **Unidentified Customer** ordered nine 737s in mid-February, and an existing customer cancelled nine 737orders.

Thai Budget Carrier, Nok Air, committed to order eight Next-Generation 737-800s and seven 737 MAX 8 aircraft valued at \$1.45 billion at list prices. **Nok Air** will be the first airline in Thailand to operate the 737 MAX. The deal was announced at the **Singapore Airshow**. This was the first major aircraft deal for **Nok Air**, which is expanding domestic and international routes in a crowded market. The airline is 39.2 percent owned by **Thai Airways**, and competes with **Thai AirAsia**, **Thai Lion Air** and **Bangkok Airways**. **Nok Air** currently operates 14 leased 737-800NGs and four ex-**Thai** 737-400s. The purchase marks the airline's first direct order with **Boeing**. The order will be listed on **Boeing's Orders and Deliveries** website after the firm contract is signed.

Jet Airways, India's second-largest airline by market share, may place an order for 50 Boeing 737 MAX aircraft worth \$2.5 billion (\$50 million each), the local press reported. The airline reportedly ordered the MAX jets in September, 2013, and will take delivery of the first ones in 2017. **Jet** has 31 outstanding orders for the 737-800NG and has 32 737NGs in service. The new airplanes will enable Mumbai-based **Jet Airways** to expand and start more routes ahead of impending competition with the **TATA Group's** joint-effort airlines with **Singapore Airlines** and **AirAsia** which will start this year. Abu Dhabi's **Etihad Airways** bought a 24 percent stake in **Jet** last year, in the first cross-border deal for Indian carriers since rules were eased in 2012.

Boeing Starting Building 42 Next-Generation 737s per Month in February. The manufacturer has increased 737 production by about 33 percent, from 31.5 to 42 airplanes a month since 2010. On February 5, technicians will load the first parts of the wing spars into the automated spar-assembly

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machine at the Renton, Washington, factory. The wing spar is the foundation of the wing and the first piece of the aircraft to be assembled. The first Next-Generation 737 built at the new rate is scheduled to be delivered in the second quarter. As previously announced, the 737 production rate is scheduled to increase to 47 airplanes a month in 2017.

Boeing is Planning to Build 52 737s per Month by the end of the decade, up from the current 42 it started to build in February 2014. The company forecasts continued strong demand for the current Next Generation 737 models, and their MAX replacements, which come on line in 2017. The backlog for the 737 is large enough to keep factories busy for seven years, **Boeing** said. It said the strong demand for the 737 will lessen the risks of order cancellations if the markets in developing nations in southern and Southeast Asia falter.

Boeing Commercial Airplanes fourth-quarter revenue increased to \$14.7 billion and full-year revenue increased to a record \$53 billion due to the record number of 648 deliveries. Fourth-quarter operating margin improved to 10.3 percent and full-year operating margin grew to 10.9 percent on the higher volume, and continued strong operating performance. The company launched the 777X with 259 orders and commitments during the fourth quarter. Last year, **Boeing** flew the first 787-9 test aircraft, launched the 787-10 and began building 10 787s per month. The company delivered 737s at a record production rate of 38 per month and sold nearly 1,800 737 MAX aircraft since the program was launched. In January 2014, **Boeing** and the **International Association of Machinists & Aerospace Workers District 751 (IAM)** extended their contract through 2024. **Commercial Airplanes** booked 465 net orders during the quarter and 1,355 during the year. The backlog as of December 31 stood at 5,080 airplanes valued at a record \$374 billion.

Chinese Airframer Comac will start final assembly of its first test C919 aircraft by the end of the year. **Dang Tiehong**, Deputy General Manager for Sales and Marketing for **Comac**, said the suppliers will start shipping parts to Shanghai later this year. The main airframe structures are already being manufactured. "We aim to finish airframe assembly of the first test aircraft by year end, and next year to start assembly of the systems," he said. Most of the aircraft's systems have gone through the critical design review, and that manufacturing has started. The airframer built the iron bird platform and has started testing it. **Comac** wants to fly the first C919 toward the end of 2015. It will build five flight test aircraft, and three for ground tests. The manufacturer is also performing systems integration tests, air-worthiness verification and other relevant work this year.

United Aircraft Corporation's Irkut Corporation has started assembly of the first **Irkut** MS-21 twinjet at its plant in Irkutsk. The program progressed past the solid modelling and test phase to the production of the first airframe structures for two flying prototypes. **Irkut** vice-president and MS-21 production plant director **Alexander Veprev** said, "Of 56 segments, we've received eight. Their assembly is already under way, along with the manufacture of other structural parts." **Aviastar** in Ulyanovsk, is supplying many MS-21 components, including empennage torsion boxes and fuselage panels made of titanium alloys and composite materials. They will ship the first parts for final assembly by March.

Boeing Estimates the Asia-Pacific Region's Airlines Will Need an Additional 12,820 Airplanes Valued at \$1.9 trillion, representing 36 percent of the world's new airplane deliveries over the next 20 years. **Randy Tinseth**, **Boeing Commercial Airplanes'** Vice President of Marketing said, "Asia-Pacific economies and passenger traffic continue to exhibit strong growth," at the opening of the **Singapore**

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Airshow. Over the next 20 years, nearly half of the world's air traffic growth will be driven by travel to, from or within the region. The Asia-Pacific fleet will nearly triple, from 5,090 airplanes in 2012 to 14,750 airplanes in 2032, to support the increased demand. Passenger airlines will rely on single-aisle airplanes, representing 69 percent of the new aircraft in the region. That growth is driven by demand from new low-cost carriers. Large intercontinental twin-aisle airplanes will account for 28 percent of new airplane deliveries.

Boeing Hopes to Sell the 777X to British Airways (BA) as the carrier looks to replace its 747 jumbos. **International Consolidated Airlines Group (IAG)**, the parent of **BA Boeing Commercial Airplanes**, has already purchased a dozen A380s, 18 A350-1000s and 42 787s for delivery by 2021. **IAG CEO Willy Walsh** said, "We see aircraft like the A350-1000 and 777X as being natural replacement aircraft for the 747s that we have. We've not made any commitment." However, he said the 777X "is a competitive aircraft", and **BA** needs more planes for delivery after 2019 [when the 777X will be ready]. **British** still needs to replace about 25 747s, which has four engines that consume more fuel, he said. The A350-1000 is in the running and **BA** has more on option. The first A350-1000s will be delivered in 2018.

Regional Report

Bombardier Aerospace announced at **Singapore Airshow** that an unidentified customer signed a Letter of Intent to purchase up to 12 CRJ900 NextGen regional jets. Based on the list price, a firm order for the dozen CRJ900 NextGen aircraft will be worth approximately \$563 million (\$49.4 million each). An existing **Bombardier** CSeries customer who chose not to be named ordered three more CS300s. The sale boosted the airframer's CSeries firm order backlog to 201 aircraft. The new order is worth \$228 million (\$76 million each) at list prices. The delivery dates were not announced. As of mid-February, **Bombardier** has recorded firm orders for 1,812 CRJ Series aircraft, including 339 CRJ900 and CRJ900 NextGen aircraft.

Bombardier's third CSeries test aircraft, FTV-3, was handed to the flight test team in early February and it will start flying soon. **Bombardier** spokeswoman **Haley Dunne** said, "As of today, we have more than 10 aircraft in various stages of testing and production, and together with the key components being manufactured at our partner sites for aircraft that follow, the CSeries aircraft program is progressing steadily."

Abu Dhabi-Based Charter Operator Falcon Aviation Services ordered two Bombardier Dash 8Q-400s, worth \$61 million (\$30.5 million) at list prices at **Singapore Airshow**. **Falcon** is based at **Al Bateen Executive Airport** and operates a fleet of corporate jets conducting VIP charter flights, and a fleet of helicopters serving the offshore oil and gas industry. The company also conducts search and rescue, aircraft management, maintenance, repair and

Bombardier will lay off 1,700 employees in its aerospace division, mostly in Montreal. The staff reductions are part of a cost-cutting push that began in 2012. Three hundred of the jobs were eliminated before Christmas, but **Bombardier** said it would try to match employees a "few hundred" positions that it is currently trying to fill. The cuts will be made in the manufacturing, engineering, sales and support sectors. **Bombardier** spokeswoman **Haley Dunne** said, "This is all with the goal of assuring our long-term success. It's just part of the overall continued focus we're putting on managing our costs prudently so that we can support our investments." The company employs 22,200 people in Canada and 16,150 in its several international plants in Mexico, Northern Ireland and the United States.

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overhaul, as well as consulting operations, **Bombardier** said. The Q400 NextGen turboprops will be fitted with a 78-passenger cabin

Also at Singapore Airshow, Palma Holding signed a firm purchase agreement for four dual-class Q400 NextGen aircraft. The agreement includes options for an additional four Q400 NextGen aircraft. The lessor signed a letter of intent to acquire the aircraft in November 2013. **Palma** intends to lease the four Q400 NextGens to **Ethiopian Airlines** as part of a joint venture with **Ibdar Bank BSC**. The contract for the eight airplanes is valued at \$282 million (\$35.25 million each) based on list price. **Ethiopian Airlines** currently operates 13 Q400 NextGen airliners. **Bombardier** has sold or delivered more than 200 Dash 8Q-Series turboprops, CRJ regional jets and CSeries single-aisle, mainline aircraft to the Middle Eastern and African markets.

Bombardier Aerospace's revenues rose to \$2.9 billion for the three-month period ended December 31, 2013, up \$300 million from the \$2.6 billion in the same period last year. The year's revenues totaled \$9.4 billion, compared to \$8.6 billion in 2012. In the quarter, Earnings Before Interest & Tax (EBIT) rose to \$93 million, or 3.2 percent of revenues and \$94 million, or 3.3 percent before accounting for special items. This compared favorably to the \$84 million (3.2 percent) recorded in the same quarter of 2012. EBIT totaled \$418 million or 4.5 percent of revenues for 2013 and \$390 million, or 4.5 percent the previous year. Free cash flow dropped precipitously to \$87 million at the end of the fourth quarter of 2013, compared to \$277 million in the same period the previous year. For full year 2013, free cash flow usage totaled \$1.2 billion compared to a usage of \$867 million in 2012. The CSeries program has cost \$3.9 billion so far, and is eating up the company's cash on hand. **Bombardier** delivered 238 aircraft in 2013, compared to 233 in the prior year, mostly in line with guidance. The company expects to deliver approximately 200 business and 80 commercial aircraft in 2014, representing a combined increase of close to 20 percent above last year's deliveries. The manufacturer won 388 net orders in 2013, for a book-to-bill ratio of 1.6. **Bombardier Business Aircraft** sold a net of 305 aircraft, including a firm order for 85 Learjets and 30 Challengers from **Flexjet**, valued at \$2.4 billion at list prices. The company optioned 150 additional aircraft. An undisclosed customer purchased 28 Global family aircraft and 10 Challenger 605 jets worth \$2.2 billion, based on list prices. **Bombardier Commercial Aircraft** received 81 firm orders during the year for a book-to-bill ratio of 1.5 in 2013. **Ilyushin Finance Co. (IFC)**, Russia, placed the largest firm order in the quarter, for 32 CS300 aircraft valued at \$2.6 billion (at list price) and optioned another 10 aircraft. **American Airlines Group** purchased 30 CRJ900 NextGen aircraft list priced at \$1.4 billion, with options for an additional 40 CRJ900 NextGens. In 2014, **Al Qahtani Aviation Company**, the Kingdom of Saudi Arabia, bought 16 CS300 aircraft, and optioned 10 more. That deal is valued at \$1.2 billion at list price. **Bombardier Aerospace** has received 201 firm orders for the CSeries aircraft, and

Nok Air, a Thai low-cost carrier, confirmed two options for the Dash 8Q-400 NextGen aircraft at **Singapore Airshow** and placed two more options. The first aircraft will be delivered in July. **Nok Air** will use the aircraft on routes to smaller Thai and regional cities. If the services are profitable, the low-cost carrier will order more Dash 8s. The Q400s will be delivered in high-density, single-class, 86-seat configuration which features a 29-inch seat pitch. The additional seating is made possible through the removal of a forward baggage cabin and the conversion of the forward cargo door into a passenger door. **Nok Air** became the launch customer for the type when it placed a firm order for two at the **Dubai Airshow** in November. At the time, it took options for two more Q400s and purchase rights for four others. That deal was worth \$258 million (\$32.25 million each). The airline will replace its two ATR 72-200s and two ATR 72-500s. It also operates four 737-400s and 14 737-800NGs.

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commitments for another 244 aircraft from 17 customers and operators in 14 countries. The manufacturer's backlog reached a record \$37.3 billion as at December 31, 2013, compared to \$32.9 billion at the end of 2012. **Bombardier** reported that its aircraft development programs are progressing well. The CSeries aircraft program's ground and flight test performance results are in line with our expectations. The CS100 is scheduled to enter into service in second half of 2015, and the first CS300s will be delivered approximately six months after.

ATR Ended 2013 by breaking its previous annual records, having delivered 74 aircraft during the year. This represented an increase of 16 percent over the 2012 deliveries of 64 aircraft, and 37 percent above the deliveries of 54 ATRs in 2011. **ATR's** revenues rose to \$1.63 billion, up 13 percent from the \$1.44 billion revenue recorded in 2012. **ATR** continued to increase the pace of its deliveries to keep up with its robust firm sales of 89 firm orders and 106 options, up 20 percent from the previous year. The company's backlog was 221 firm aircraft orders, worth \$5.3 billion, as of December 31, 2013. The orders represent nearly three years of production. For over the past five years, **ATR** has accounted for nearly 85 percent of the under-90-seat market in Latin America and Southeast Asia. Since the program began in 1981, **ATR** has sold 1,328 aircraft, including 443 ATR 42s and 885 ATR 72s, and has delivered 429 ATR 42s and 678 ATR 72s, by the end of 2013. **ATR** plans to build more than 80 aircraft in 2014. **Filippo Bagnato**, **ATR's** CEO, said that it would have reached that goal in 2013, but suppliers were not able to deliver the requisite number of parts, causing **ATR** to miss its delivery plan. Handing over 80 planes this year is a minimum requirement, he said, as he seeks to lift revenue to \$1.8 billion in 2014 on the way to \$2 billion in 2015.

Avions de Transport Regional—**ATR** wants to build a 90-seat aircraft, but it must seek approval from its parent companies, **Airbus Group** and **Finmeccanica SpA**. Both own equal shares of **ATR**. It is possible that the owners must create a new ownership structure to support the \$2 billion

ATR Orders 2013			
COMPANY	ATR 42-600	ATR 72-600	OPTIONS
Nordic Aviation Capital	5	46	80
GECAS		5	5
Air Lease Corporation		5	
Avation		5	5
Garuda Indonesia		5	10
Air Algérie		3	
LIAT	3		
Alpha Star		1	1
Air New Zealand		1	
UNI AIR		1	
TransNusa	1		3
Air Antilles	1		
Undisclosed		7	2
TOTAL	10	79	106
Deliveries 2013			
COMPANY	ATR 42-600	ATR 72-600	
AZUL		6	
Aer Arann		6	
UNI AIR		5	
Lion Air - Malindo		5	
Lion Air - Wings Abadi		5	
Avianca		4	
Alenia / Turkish Navy		3	
Avation / Virgin Regional		3	
GECAS / AZUL		3	
NAC / Air KBZ		2	
GECAS / Villa Air		2	
Air New Zealand		2	
ALC / Aeromar		2	
GECAS / LIAT		2	
MAS - Firefly		2	
ALC / Kalstar		2	
Taimyr	2		
ALC / LIAT		2	
LIAT	2		
NAC / Jet Time		2	
NAC		2	
NAC / Garuda Indonesia		2	
MAS - MASwings		1	
NAC / Johnlin	1		
GECAS / Jet Airways		1	
Lao Airlines		1	
InterSky		1	
Air Tahiti	1		
Avation / Mann Yadanarpon		1	
Air Antilles Express	1		
TOTAL	7	67	

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development program. CEO **Filippo Bagnato** forecasts a need for 1,300 airplanes in 90-seat market. **ATR** is seeing a resurgence in demand for its 50-seat and 70-seat turboprops because they are more fuel efficient than regional jetliners. Fuel burn is now more important to airlines than higher speed, although the new plane is expected to fly as fast as 300 knots. He said, "I have a list two pages long of airlines asking us to build this plane," and most of the demand comes from Southeast Asian carriers. If **Airbus Group** balks, **Giuseppe Giordo**, the head of **Finmeccanica**, said in June that the company would consider pursuing a larger plane without **Airbus**.

Binter Canarias, based in Spain's Canary Islands, purchased six ATR 72-600s worth nearly \$150 million (\$25 million each), at list prices. The airline will use the -600s to replace some of its three ATR 72-200s and some of its 14 ATR 72-500s. The first of the -600s will be delivered in 2015.

Dubai Aerospace Enterprise (DAE), a state-owned leasing firm based in the United Arab Emirates is purchasing 40 ATR 72-600s. **DAE** placed firm orders for 20 aircraft and optioned another 20 at the **Singapore Airshow**. The 20 firm aircraft are scheduled for delivery between 2015 and 2018. The deal represents **DAE's** first order for regional aircraft, and reflects a growing demand for regional turboprops. The lessor currently manages a portfolio of A320s, A330s, 737s and 777s worth more than \$3.3 billion.

Embraer Commercial Aviation forecast that airlines in Asia/China/India/Pacific region will take delivery of 1,500 new jets in the 70 to 130-seat segment over the next 20 years. The new planes are valued at \$70 billion at list prices and represent nearly 20 percent of the worldwide demand for that segment. Sixty-five percent are needed for market growth while the other 35 percent will replace ageing aircraft that need to be retired. The Asia/China/India/Pacific market is becoming more affluent, competitive and liberal, which further stimulates airlines to seek system efficiencies, brand differentiation and improved service levels, **Embraer** said. The urban middle class will have more discretionary income and will want to spend it traveling by air. Air transport demand in the region will increase 6 percent annually by 2032, and it will become the world's largest market accounting for 34 percent of total revenue passenger kilometers. **Embraer** said, "The E-Jets family has logged more than 1,400 orders and over 1,000 deliveries to date. In the 70 to 130-seat segment, **Embraer** has a global market share of 51 percent of orders and 62 percent of deliveries since 2004. **Embraer** currently has more than 80 percent market share in its segment."

Embraer expects to sell as many as 150 planes through 2015 as carriers seek more economic upgrades, said CEO **Frederico Curado**. The manufacturer forecasts that U.S. airlines will replace 600-800 50-seater regional jets with larger and more fuel-efficient planes. **Embraer** is investing about \$1.7 billion in its second-generation E-2 jet program with the intention of capturing that market. The E-2 program is on schedule and the first plane is expected to enter service in 2018. **Embraer** sold 150 of its new jets and had options for 150 more at year's end. **Embraer** is the biggest seller of regional jets and it sold 327 current and second generation jets to U.S. airlines last year. Mr. **Curado** said deliveries and revenue should see "a little growth" in 2014 compared to last year, when the company delivered 90 commercial jets and 119 executive jets.

India's Air Costa placed a firm order for 50 E-Jets E2s and took an additional 50 purchase rights. The acquisition is a mix of 25 E190-E2s and 25 E195-E2s and the estimated value of the deal is \$2.94 billion (\$58.8 million each) based on 2014 list prices. The airline reserved purchase rights for 25 E190-E2s and

25 E195-E2s, bringing the total potential order up to 100 aircraft and the cost to \$5.88 billion if all rights are exercised. This transaction raised total E-Jets E2 orders to 200 firm and 200 options/purchase rights since the launch of the E2 program, in June 2013. **Air Costa** is the first customer of E-Jets E2 in the Indian market and will take delivery of the E190-E2 in 2018. The E195-E2 is scheduled to enter service in 2019. Today, the airline flies two E170s and two E190s. **Air Costa** is based at Vijayawada, Andhra Pradesh. It currently connects cities in southern India such as Bangalore, Chennai, Hyderabad and Vijayawada, as well as key secondary cities in the North and Northwest of the country. The airline plans to link underserved markets with more direct flights, increasing frequencies and routes, thus serving growing metropolitan areas, as well as key secondary and tertiary business centers. **Ramesh Lingamaneni**, Chairman of **Air Costa**, said, "The E2s will give us right-sized seat capacity and unit costs that are competitive with larger re-engined single aisle aircraft." The E190-E2s will be configured with 92 tourist class seats and six seats in first class, and the E195-E2 will be fitted with 106 tourist seats, and 12 seats in the first class cabin.

Order Changes and Cancellations

Airbus Order Changes and Cancellations. **CIT Leasing** cancelled one A319 and two A320s in January. The leasing company retained firm orders for 36 A319s and 127 A320s. The number of 27 A321s was unchanged, as were the 35 A330-200, 16 A330-300s and 15 A350-900s. **Gulf Air** dropped two of its three A319 orders.

Libyan Airlines and Lessor ILFC have each converted their A350-800 orders to the larger -900, taking the -800 backlog down to 46. **ILFC** exchanged six -800s for -900 orders and now has 20 in backlog. **Libyan** switched its four -800 orders and purchased another two -900s under its revised contract with **Airbus**. The changes were revealed in January 2014. **ILFC** was an early customer for the original A350 and a launch customer for the A350 XWB family in October 2007. It originally placed orders for 12 -800s and eight -900s, but eventually converted all the -800s to the larger variant, which will enter service with **Qatar Airways** late this year.

Libyan Airlines contracted for four A350-800s in January 2008, and announced the purchase of two A350-900s in January. Its first -900s will be delivered in 2017. As of February 1, **Aeroflot** retains eight A350-800 orders, **Aircraft Purchase Fleet** will lease 12 -800s to **Alitalia**, **Asiana** has eight -800s on order, **AWAS** has two -800s for lease, **Hawaiian Airlines** is expected to receive its first of six -800s in 2017 and **Yemenia** has 10 -800s in backlog.

Boeing Cancellations and Changes. **Aeromexico** cancelled three of its four outstanding 737-800NG orders in January. **Shenzhen Airlines** took delivery of one unannounced 737-800 order in January and is believed to be the customer for six more

Lion Air said it plans to cancel its existing order for five **Boeing** 787-8s, and will replace them with bigger widebody aircraft. The Indonesian low-cost airline announced the \$1 billion order (at list prices), in June 2012 and the 787s were to be operated by its premium-service subsidiary **Batik Air**. Sources said the five **Lion Air** 787 Dreamliners would have been early production models which were sold at 50 percent discounts due to their extra weight and the modifications carried out after leaving the production line. As of February 1, the cancellation had not been confirmed by **Boeing**. **Lion Air** intends to buy larger widebodies, saying that the 250-seat 787-8s would be too small. It is accepting tenders from **Airbus** and **Boeing** for A350s and 777s. A firm order is expected in the first quarter of 2015. The widebodies will serve domestic, high-frequency routes. **Lion Air** said it plans to purchase more 737s as well.

undisclosed 737-800s that were ordered in September 2007. **Hainan Airlines** reportedly is the customer for 11 737-800s that were ordered in November 2007. One was recently delivered. **Xiamen Airlines** took delivery of the first of 20 737-800s that it reportedly ordered in May 2008. All of the Chinese orders are still listed as for "Unidentified Customers". The 50 737NGs ordered by **Rostec—Russian Technologies Corp.** in October 2010 were transferred to **Avia Capital Leasing** in January. So far, four have been leased to **Aeroflot** and the rest will go to the flag-carrier in due course. **GECAS** was revealed to be the previously unidentified customer for 20 737-800s and 20 737 MAX aircraft ordered in December, 2013. **British Airways** ordered two 777-300ERs in July 2012 and took delivery of one of them. The order was posted as "Unidentified". The Unidentified Customer that ordered two 787-8s in December 2008 is now known to be **Boeing Business Jets**. The VIP 787-8s were delivered in January and February 2014.

Embraer lost four EMBRAER 170 orders placed by **ETA Star Aviation**, and **Virgin Nigeria** cancelled its last EMBRAER 190 order in December.

Leasing Companies

Myanma Airways will lease six **Boeing** 737-800NGs and four 737 MAX-8s from **GE Capital Aviation Services (GECAS)**. The planes will be used to expand the **Myanma's** fleet as the country opens up to business and tourism, and will be delivered from June 2015 to 2020. **GECAS** said the aircraft were worth \$960 million at list price, and will come from **GECAS'** existing order book. The state-owned airline flies domestic routes and owns 20 percent of flag carrier **Myanmar Airways International**. The airline operates a mixed fleet of two **GECAS**-leased EMBRAER 190s, one ATR 42 and three ATR 72s. It flew three **Xian** MA-60s, but grounded them in 2012 after two were damaged in accidents.

BOC Aviation, the Singapore-based leasing company, looks poised to supply up to 20 A320s to India's latest airline, **Tata-SIA**. **Tata Sons** and **Singapore Airlines** intend to set up a full-service airline to compete in India's crowded airline market. **Tata-SIA's** service will be a step above the low-cost model and will distinguish the airline from the budget carriers. The airline may source A320s from other lessors as well. **Tata-SIA**, and the **AirAsia-Tata** low-cost joint venture will start

Controladora Vuela Compania de Aviacion—Volaris signed a letter of intent to lease 10 A320neos and six A321neos from a leading aircraft lessor. The neo aircraft will be powered by **Pratt Whitney** PW1100G engines and delivered between 2016 and 2018. **Volaris** will take two A320neos in 2016 and four in 2017 and 2018. Two A321neos will be delivered in 2017 and the remaining four will arrive in 2018. **Volaris** CEO **Enrique Beltranena** said, "These 16 aircraft together with the existing orders underpin the **Volaris** growth strategy by having a young, efficient and uniform fleet. Early delivery of next generation, fuel efficient Airbus A320neo and A321neo will allow us to maximize the use of airport slots in key markets and continue to further reduce our operating costs." The airline has outstanding orders for 46 A320s scheduled for delivery between 2014 and 2020 and plans to return 20 A319s to lessors during that time. The Mexican low-cost carrier will return two A319s this year, one next year, five in 2016, three in 2017, seven in 2018 and two in 2019. They will be replaced with seven A320s in 2014, four in 2015, and five in 2016, two A320neos in 2017, six in 2018 and in 2019, and the last 12 A320neos in 2020. **Volaris** currently has 20 A319s and 24 A320s in its fleet and will operate 80 A320s and six A321s by 2020.

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flying their leased A320s in the second half of 2014.

International Lease Finance Corporation (ILFC) completed a total of 281 lease transactions in 2013, including new leases and extensions of leases of aircraft from **ILFC's** portfolio. During the year the company ordered 165 new aircraft, and purchased 38 new aircraft through sale and leaseback agreements. **ILFC** sold 40 aircraft and parted out 14 aircraft. The lessor expanded its offices in Dublin and Singapore and bought **AeroTurbine** which handles **ILFC's** sale and part-out of old aircraft. The company serves approximately 200 customers in more than 80 countries.

FLY Leasing signed agreements to lease 36 aircraft, and it purchased one A320, eleven 737NGs, one 777-300ER and one 787-8 in 2013. It sold 10 aircraft with an average age 13.6 years, for a net gain of \$6.3 million. **FLY Leasing** secured \$1.1 billion of debt financing and raised \$173 million of new equity capital. The company's portfolio increased to 113 aircraft at year end. The lessor bought one 737-700 and one 737-800 in February 2014.

Norwegian Long Haul signed a letter of intent to add four more **Boeing** 787-9 Dreamliners to its fleet of 10 aircraft. **Norwegian** said it would lease the new 787s, upon delivery in 2017 and 2018.

Aircastle will purchase eight **Boeing** 777-300ERs from **LATAM Airlines Group S.A.** and lease them back. The leases of the first four aircraft, built in 2012, will start in the second quarter of 2014, and the average lease term will be 60 months. **Aircastle** will purchase four 2008-model 777s once their existing loans are paid off. They will be leased back to **LATAM** until 2017 or 2018.

Airbus' lease rates for single-aisle aircraft have recovered from the collapse of **Spanair** and **Kingfisher**. **Nigel Taylor, Airbus'** aircraft-finance chief, said recently, "Rates have substantially recovered, after an earlier overhang with the ex-**Kingfisher** and **Spanair** planes." The improvement in A320 Family lease rates has helped **Airbus** sell to lessors the 130 A319 and A321s that **American Airlines Group** ordered in 2011. **American** is buying another 130 A320neo Family for delivery at the end of the decade. All 20 single-aisle planes **Airbus** delivered to **American** were sold to lessors or investors, and it has already sold forward many of the 35 A319s and A321s that will be delivered to **American** this year. Mr. **Taylor** said there was no increase in customer-finance exposure within **Airbus's** finance business, though the manufacturer had to take back some A319s and A340s that **Airbus** has to sell off. **Airbus** offered residual value guarantees on its four-engine A340s, but no longer does that. "Residual value guarantees given in the past often were linked into financing structures that don't exist anymore," he said. "Access to capital is relatively easy today. There's a huge amount of liquidity in the market." This relieves **Airbus** of the responsibility to back stop its sales.

Engines

Lion Air, Indonesia, purchased **CFM International** engines worth \$1.2 billion for 60 new standard-model **Airbus** A320s it ordered in March 2013. The privately-owned, low-cost carrier will taking delivery of the first of six the CFM56-5B-powered A320s in the middle of this year. The other 54 A320neos will follow from 2015 onwards. The airline said in a statement that it had not decided on the engines for the 109 A320neo and 65 A321neo aircraft that it purchased last March. **Lion Air** will set up a heavy-maintenance operation at Batam, Indonesia. Concurrently, it will increase the number of

domestic routes linking Batam to 20 cities and boost the frequency of these services. **Lion** plans to make Batam an international transit hub and its second major Indonesian hub after Jakarta. It plans to launch services to southern China, as well as Bangkok, Jeddah and New Delhi and Mumbai in India. This will relieve the congestion at Jakarta. **Rusdi Kirana**, the president director of **Lion Group** said, "The distance is actually shorter if you transit in Batam rather than flying south to Jakarta. The shorter flying time makes flying more convenient for passengers and it means aircraft burn less fuel, leading to significant cost savings." Batam is an island located 12 miles off Singapore's south coast, and a part of the Indonesia-Malaysia-Singapore Growth Triangle and a free-trade zone within Indonesia.

General Electric (GE) sold more than 470 CF34 engines in the last 12 months as airlines replaced their regional jet fleets. The CF34-8 is standard equipment on **Bombardier** CRJ and **Embraer** E-Jet aircraft. Due to the rising order book, **GE** is raising its production rates for the engine. They will deliver more than 330 engines in 2014, nearly 400 engines in 2015 and more than 475 engines by 2016. **GE** has delivered more than 5,900 CF34 engines to date and it has continuously enhanced the product since it entered service in 1992. The engines have accumulated more than 100 million flight hours and 80 million cycles and are used by 200 operators in more than 70 countries.

Aerolíneas Argentinas ordered **General Electric** CF6-80E1 engines for the four new **Airbus** A330-200s it bought in February. "GE and **Aerolíneas Argentinas** have a strong relationship with the majority of their fleet powered by **GE** or **CFM** engines," said **Doug Izarra**, **GE's** Vice President for the Americas Sales.

VietJetAir, Vietnam, selected **CFM International's** CFM56-5B engines to power 14 **Airbus** A320neo (current engine option) and seven A321neos. The agreement was valued at more than \$800 million at list price. Furthermore, Thailand's **Nok Air** announced a commitment to order eight 737-800NGs powered by CFM56-7B engines and seven 737 MAX-8s that will be powered by the LEAP-1B engines.

BOC Aviation selected **Pratt & Whitney** PurePower PW1100G-JM engines to propel 15 new **Airbus** A320neo family aircraft. **Pratt & Whitney** will supply the engines starting in 2017.

Turkish Airlines is buying **IAE International Aero Engines** V2500 engines to power 25 new standard A321 aircraft. The engine deal is valued at \$560 million. Deliveries will start in 2015 and continue through 2017. **Turkish** will then operate 110 V2500-powered A320 Family aircraft.

Rolls-Royce completed a long-term agreement with **Lockheed Martin** to deliver approximately 600 engines to power future C-130J Super Hercules aircraft. The deal is worth up to \$1 billion. The agreement secures the **Rolls-Royce** AE 2100 as the exclusive engine for all variants of the C-130J until 2025. The new engine agreement will service **US Government** and international contract requirements between 2014 and 2018. All C-130Js are fitted with AE 2100 engines, while the **Rolls-Royce/Allison** T56 engines power the legacy C-130 fleet. **Lockheed Martin** announced its intent to obtain certification for its new civil variant - the LM-100J from the **Federal Aviation Administration**. More than 300 of the four-engine C-130Js have been delivered to customers in 16 countries, and **Rolls-Royce** has already delivered more than 1,500 AE 2100 engines to **Lockheed Martin's** Marietta, Georgia, facility. AE 2100 engines are manufactured, assembled and tested in Indianapolis, Indiana.

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Nepal Airlines Corporation (NAC) signed its first order with **IAE International Aero Engines** to supply V2500-A5 SelectOne engines to power two firm A320ceo aircraft and two optioned aircraft. The A320s were ordered in June 2013. The aircraft will be fitted with winglets and delivered in 2015.

IAE International Aero Engines AG completed and shipped its 6,000th V2500 engine from the **Pratt & Whitney Middletown Engine Center**, in Connecticut. The engine was sent to **Airbus** and will be installed on an A321ceo aircraft for delivery to **JetBlue Airways** in March. **JetBlue** started operations in February 2000, and is now the largest operator of V2500-powered A320 Family aircraft. It has 132 V2500-engined A320-232s and four A321-231 in service, and 35 more on order. **JetBlue** also received the 2,000th V2500 engine in 2002. **IAE** delivered its 4,000th engine to **TAM** in 2009, the 5,000th engine to **SilkAir** in 2012. **Cyprus Airways** was the first airline to operate the **IAE** V2500 engine when its A320 was delivered in 1989. **JetBlue** was also the first North American operator to order A320neo and A321neo aircraft powered by **Pratt & Whitney** PurePower PW1100G-JM engines. To date, 6,000 V2500 engines have been delivered to nearly 200 customers around the world.

Pratt & Whitney PurePower Geared Turbofan (GTF) engines will power the 50 firm **Embraer** E-Jets E2 aircraft that **Air Costa** ordered in February. The airline has reserved 50 purchase rights as well. Deliveries are scheduled to begin in 2018. The GTF family has more than 5,000 orders and commitments, including options.

CDB Leasing (CLC) will be the first customer to take delivery of **Pratt & Whitney** PurePower PW1500G engines in mainland China. The lessor ordered 15 **Bombardier Aerospace** CSeries aircraft in July 2012. **CLC** purchased five CS100s and 10 CS300s and took options for another five CS100s and 10 CS300s.

Airline News

Etihad Airways and **Alitalia** entered the final phase of a due diligence process about **Etihad's** possible investment in **Alitalia**. During February both companies will determine a common strategy which meets the objectives of both parties. They will resolve any issues that may prevent the establishment of a business plan to move **Alitalia** to sustainable profitability. The Abu Dhabi flag carrier will decide in March whether to buy shares in the ailing Italian airline. **Etihad** wants a vehicle to funnel traffic through its hub in the Middle East, and will consider a cash contribution of about €300 million (\$405 million). **Air France KLM Group** will consider reinvesting in **Alitalia** if its conditions for restructuring are met. The group still owns around 7 percent of **Alitalia**, and wants the airline to restructure its €800 million (\$1.1 billion) debt, cut costs more aggressively and be willing to come under the Franco-Dutch group's full control. If **Etihad** buys 40 percent of the Italian airline, the last condition will not be met. The group wrote off its investment in **Alitalia** and refused to help with the airline's emergency fund-raising in December, allowing its stake to shrink from the original 25 percent. **Lufthansa** asked the **European Commission** to block repeated subsidies of European airlines and their partial nationalization, including through state-owned foreign rivals, the German carrier said in a statement. It asked the European governments to insure a level competitive playing field. **Alitalia** desperately needs the **Etihad** deal and may founder if the rescue plan fails.

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JetBlue Airways and Etihad Airways intend to codeshare and provide customers with enhanced travel options worldwide. The agreement will see **Etihad** place its code on 40 **JetBlue** routes in the U.S. originating from New York's **JFK International Airport** and Washington's **Dulles International Airport**. The codeshare services will expand once **Etihad** starts daily flights to Los Angeles in June 2014. Later **Etihad** will codeshare on **JetBlue** flights to the Dominican Republic, Jamaica and Colombia. The agreement is subject to U.S. and foreign government approval.

Republic Airways will retire 15 44-seat **Embraer** ERJ-140s that are operated for **American Airlines** and a dozen 50-seat ERJ-145s that are flying for **United Airlines**. The airline lacks enough qualified pilots to operate its full services. The aircraft will leave the Indianapolis-based regional carrier's fleet by the third quarter. The early retirement will cost **Republic** between \$18 million to \$22 million in lost revenue. The airline said the "significant reduction in qualified pilots who meet the congressionally mandated 1,500 hour pilot experience rule" is behind the decision to remove the aircraft. New **Federal Aviation Administration (FAA)** flight and duty regulations went into force on January 4. Pilots must have 1,500 hours flying experience up from 250 and the **FAA** also restricted duty time. The airline will continue to operate 14 ERJ-145s for **Delta Air Lines** and intends to extend the contracts after they expire this year.

Hong Kong Express Airways, backed by **HNA Group**, plans to double its fleet to 11 A320s and expand its network to 20 Asian cities this year. The budget carrier will add 12 new destinations this year, including Seoul, South Korea, in March. It already flies to eight cities including Osaka, Kunming and Phuket. The low-cost carrier is challenging **Cathay Pacific** and carried almost 200,000 passengers since becoming a budget airline in October.

National Air Services -Nas Air rebranded itself as **Flynas** in November 2013. The airline is Saudi Arabia's only private airline to date. It operates domestic and international low-cost services and is based in the Saudi capital of Riyadh. The airline launched commercial flights on February 18, 2007. It currently operates 19 leased A320s and six EMBRAER 190s and has 20 A320s on order.

GOL Linhas Aéreas Inteligentes, the largest, low-cost and low-fare airline in Latin America, signed an exclusive long-term strategic partnership with **Air France-KLM**. The agreement expands their code sharing, and will enhance joint sales activities. It will benefit the customers by aggregating their

The Civil Aviation Authority of China approved the establishment of two new low cost airlines. The first airline, **Fuzhou Airlines**, will be launched by **Hainan Airlines**, the fourth-largest carrier in China. **Hainan** will invest 1.2 billion yuan (\$198.4 million) and will own 60 percent of the new low-cost carrier. The full-service **Juneyao Airlines**, a member of the Shanghai-based **Juneyao Group**, will found the Guangzhou-based low-cost **Jiu Yuan Airlines**. The airline will be capitalized with 600 million yuan and will operate A320 aircraft.

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 February 21, 2014, the average price of fuel was \$3.005 per gallon. The fuel price was \$2.970 per gallon on January 3, 2013. The February price was 2.5 percent higher than in January, and was 6.5 percent lower than in February 2013. The price of fuel is affected by location. It was only \$2.927 in the Middle East region and was as high as \$3.129 per gallon in Latin America. **IATA** estimated that the global airline industry's fuel bill will total \$124.7 billion in 2014. This was a decrease of \$4 billion over 2013.

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frequent flyer programs in the Brazilian and European markets. **GOL** and **Delta Airlines** signed a strategic cooperation agreement in 2011 and the pact with the Europeans should add value to the **Skyteam** alliance. **Air France-KLM** will invest \$100 million in **GOL**, including buying preferred shares for \$52 million at \$12.23 per share. The Europeans will also fund \$48 million to enhance the effectiveness of the strategic commercial partnership. The share sale must be approved by **GOL's Board of Directors**, and the deal is subject to the approval of **CADE—the Administrative Council for Economic Defense**, the Brazilian antitrust authorities.

Southwest Airlines won 54 slots at **Washington National Airport (DCA)**, enough for 27 additional daily flights. The acquisition is subject to final approval of the **Department of Justice**. The carrier plans to announce destinations, schedules, and fares for the additional flights in March, and expects to begin flying in the third quarter of 2014. **JetBlue Airways** won 24 slots at Washington's popular, downtown airport. Once approved by DOJ, **JetBlue** expects to add 12 new roundtrip flights to cities it does not currently serve from **DCA**, expanding to more communities, as well as adding more flights on some existing routes.

United Continental, the world's second-biggest airline, is dropping Cleveland as a hub for connecting flights and will cut 470 jobs at the city. The airline will drop 60 percent of its daily departures by June. **United** will eliminate most of its regional flights at the airport. Only one of its 26 mainline jet flights will be halted. **United** has been losing money at Cleveland since the airline acquired the hub from its merger partner, **Continental** in 2010. The hub in Cleveland has not been profitable for over a decade, and has generated tens of millions of dollars of annual losses in recent years, the airline reported. **United** expects to eliminate 430 airport-operations employees and 40 catering workers while keeping pilot and flight attendant bases. Cleveland was **Continental's** smallest domestic hub and under the 2010 merger agreement, most Cleveland flights were to be retained for at least two years, so **United** exceeded the terms of the merger.

Technical

Aviation Partners Boeing (APB) received a Supplemental Type Certification (STC) from the **FAA** for its **Split Scimitar Winglets** for installation on **Boeing 737-800** aircraft. **APB** spent five years to design and redefine the aerodynamics of the **Blended Winglet** into an all-new **Split Scimitar Winglet**. It used the existing **Blended Winglet** structure, but adds new strengthened spars, aerodynamic scimitar tips, and a large ventral strake. **APB** will develop and certify the **Split Scimitar Winglet** modification for all of the **Boeing 737-700, -800 and -900** series aircraft, including the Boeing Business Jets. **APB** expects to start certification flight testing on the 737-900ER in mid-February, and achieving certification by late July 2014. **United Airlines** was the launch customer for the Split Scimitar Winglet, and **Southwest** placed the largest order for the modification. Since launching the program in early 2013, **APB** has taken orders and options for 1,461 **Split Scimitar Winglet** systems. Over the past decade, **APB** has sold more than 7,000 **Blended Winglet Systems**, and delivered more than 5,100 of them to more than 200 airlines. **APB** estimates that **Blended Winglets** have saved airlines worldwide over 4 billion gallons of jet fuel to-date.

Aeromexico (Aerovías de México, S.A. de C.V.) ordered **Split Scimitar Winglets** for its 19 **Boeing Next-Generation 737-800** aircraft. **APB** expects that **Scimitar Winglet Systems** installed on a 737-800 will save **Aeromexico** more than 55,000 gallons of jet fuel per aircraft per year, resulting in a corresponding reduction of carbon dioxide emissions of 530 tons per aircraft per year. Additionally,

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Aeromexico can realize incremental payload on several of its long haul 737-800 operations, such as Mexico City to Lima, Peru and Caracas, Venezuela.

Hong Kong Aircraft Engineering Company (HAECO) completed its previously announced acquisition of **TIMCO Aviation Services (TIMCO)**, making **TIMCO** a wholly-owned subsidiary of **HAECO**. The deal created one of the world's leading airframe MRO service providers based on scope of services and products offered, **HAECO** said. **Augustus Tang**, Chief Executive Officer of **HAECO** said that the two companies will provide customers with an enhanced range of capabilities and will be uniquely positioned to capitalize on significant growth opportunities, particularly in the aircraft interiors engineering and manufacturing market segments. "TIMCO's strong reputation for quality aircraft care and customer services fits well with the **HAECO** family of companies. We are looking forward to continuing to grow **TIMCO's** capabilities and reach, especially in the delivery of aircraft interiors products and services."

Cargo Pallet

Aeronautical Engineers (AEI) delivered the second 737-400 freighter to **Sideral Air Cargo**, Brazil. The aircraft was a high-gross weight 737-400SF (SN 24808) which was built in 1990 and was converted at **Commercial Jet's** Miami, Florida facility. **Sideral Air Cargo's** fleet now consists of one 737-300SF and two 737-400SF freighters. **AEI** completed the first of four 737-400SF freighters to **FarnAir Europe** based in Switzerland. The aircraft was a high-gross weight 737-400SF (SN 28492) built in 1996 and was converted by **Commercial Jet**. These were the first and second of 30 freighters that **AEI** is scheduled to deliver in 2014. **Aloha Air Cargo** contracted for **AEI** to convert 737-300 (SN 27904) from passenger to freighter. The aircraft was built in 1995 and is currently being modified by **Commercial Jet**. **Aloha Air Cargo's** 737-300SF will be completed in May, 2014.

Southern Air signed a new Flight Services Agreement with **DHL Express**, continuing the operation of four 777 freighters. This contract extends **DHL's** 777F lease agreement and **Southern Air's** operation of the freighters for 10 years.

Ethiopian Airlines Enterprise will set up its fourth hub in Kinshasa, the Democratic Republic of Congo. The flag carrier will also found a startup carrier based in the Congolese capital later this year. Chief Executive Officer **Tewolde GebreMariam** said the DRC's 65 million people, coupled with \$17 trillion in natural resources and an improving political situation make the country the ideal location for a central African base. **Ethiopian** built bases in its capital Addis Ababa, in Togo and Malawi to compete with Africa's Number 1 carrier, **South African Airways** and **Kenya Airways**, which are also building pan-African networks. The Congo is seen as a halfway point for services linking Brazil with China. "The Congo is a large country and a large market and while peace has been a problem there seems to be a better situation developing. We think it's going to attract a lot of foreign direct investment, and it is right in the middle of central Africa," Mr. **GebreMariam** said. The airline offers long-haul flights from Addis Ababa to New York via Togo, Sao Paulo and Rio de Janeiro via Kinshasa and even Australia via Malawi. The Congo hub could also serve the mostly oil-rich nations of the **Central African Economic and Monetary Community (Cemac)** including the Congo, Gabon, Cameroon, Chad, the Central African Republic and Equatorial Guinea. **Ethiopian** operates one 737-400SF, two 757-200PF freighters, two 777Fs, and two MD-11F freighters.

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Atlas Air Worldwide and **British Airways (BA)** terminated an ACMI-lease agreement ahead of schedule. **British** will return three 747-87UFs (SN 37561, 37568 & 37569) to **Atlas's** U.K. subsidiary **Global Supply Systems** on April 30, 2014, and **BA** will pay a penalty for the early termination. **British** will then use **Qatar Airways'** 777F freighters. **Global** will return the 747-8Fs to **Atlas**, which is actively looking for new clients for the freighters.

Lockheed Martin launched its civilian version of the C-130J Super Hercules transport on January 21, 2014, and expects to win its first order later this year. The company started the certification process with the **Federal Aviation Administration**. **Lockheed** expects the LM-100J Super Hercules to fly in 2017 and it will be certified by 2018. The flight test program should take one year. The company wants to diversify from its dependence on military spending. The new civilian LM-100J is an attractive source of potential non-military Super Hercules revenue, the company said. The new aircraft is part of **Lockheed's** broad effort to diversify revenue. The LM-100J is provisionally priced at around \$65 million. **Lockheed** sold 115 of the civilian L-100 Hercules from 1964 and 1992, and they are approaching the end of their life cycles. The new LM-100Js offer better reliability, better capability and better maintainability, safety and performance, **Lockheed** said. The new Herc will offer digital avionics, new **Rolls-Royce** AE2100D turboprop engines with six-bladed props and a series of design changes that improve performance and reduce operating costs. The company describes the LM-100J as a "civil multi-purpose air freighter, which will have a digital back end" that will assist the loadmaster with loading and weight and balance. The cargo compartment will be 15 feet longer than in the L-100, allowing the carriage of two additional pallets. The updated aircraft will be able to carry 33 percent more cargo for 2,500 nautical miles (4,630 kilometers). The LM-100J will carry a 40,000 pound (18,200 kilogram) payload, for 2,200nm, which is about 50 percent farther than the L-100. Two pilots can handle the Hercules and the airplane is 15 percent more fuel efficient than its predecessor. **Lockheed** estimates it can sell 75 to 100 LM-100J's over 20 years to customers who need rugged aircraft that can operate from austere, unpaved runways, **Lockheed** said.

PEMCO World Air Services (PEMCO) announced the redelivery of a 737-400 Combi aircraft to **First Air**, Canada. This was the first of two conversion projects for the Ottawa-based carrier. The combi will be used primarily within Northern Canada, providing a unique combination of cargo and passenger services, **PEMCO** said. The 737-400 Combi can carry four and a half pallets of freight and 72 passengers. The functional capability of this converted aircraft makes it ideal for accomplishing unique and difficult missions for **First Air**.

PEMCO finished its first 737-400F for **Air Incheon** in late 2013. The conversion was completed by **PEMCO's** partner and major MRO provider **STAECO**, China. **Air Incheon** specializes in transporting heavy equipment for the oil and gas industries between Korea and Russia. The airline focuses on underserved markets such as Khabarovsk region in Russia's Far East, but also flies to China, Japan and Ulan Bator, Mongolia.

Military Market

The Turkish Armed Forces (TAF) took delivery of its first advanced airborne surveillance and battle management aircraft in February. **Boeing** delivered the Airborne Early Warning and Control (AEW&C) 737 to **Konya Air Base**. Two more AEW&C aircraft are due this year, and the fourth will arrive in 2015. The **Peace Eagle** program includes ground support segments for mission crew training, mission support and system maintenance. The airplane is based on the civilian **Boeing** 737-700, and is operated

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by Australia and South Korea. The program took 11 years to complete, and the first aircraft was originally due in 2007. **Boeing Integrated Defense Systems** installed the mission suite in the first aircraft, while the other three will be modified by **Turkish Aerospace Industries (TAI)**.

Airbus Defence & Space started the final assembly of Germany's first A400M tactical transport and plans to deliver it in November 2014. The aircraft (SN 018) is the first of 53 Atlas airlifters for the German **Luftwaffe**. So far **Airbus** has delivered only two production A400Ms to France, and has completed Turkey's first Atlas. The first A400M for the U.K. **RAF** is on the assembly line. **Airbus** has orders for 174 A400Ms from **NATO** countries and Malaysia.

Boeing delivered the **Kuwait Air Force's** first C-17 Globemaster III airlifter in February. The aircraft expands the **Air Force's** capabilities in military and civilian operations, including humanitarian aid and disaster relief. The plane features a custom paint design that distinguishes the **Kuwaiti** C-17 from the 259 others that have been delivered. **Air Force** Colonel **Abdullah** said, "When this C-17 arrives to deliver humanitarian aid or disaster relief anywhere in the world, people in need will know that the aid came from Kuwait." **Boeing** will support Kuwait's C-17 fleet through the **C-17 Globemaster III Integrated Sustainment Program**, a proven multinational performance-based logistics program.

AIRCRAFT DELIVERIES & SALES



Airbus A319. **China Eastern Airlines** took delivery of **Tainjin** FAL-built -132/W (SN 5826) in January. **Germanwings** received the only other A319 delivered last month, -132 (SN 5941).

Airbus A320. **Airbus** delivered 21 A320s in January. **AWAS** leased a third -216/W (SN 5926) to **Vanilla Air**, Japan, the fifth of nine -232/Ws (SN 5951) to **Thai Smile**, and the second of two -214/Ws (SN 5943) to **AirBlue**, Pakistan. **Qantas Airways** took delivery of two -232/Ws (SN 5928 & 5940). The first one was stored, and the second one (-232/W SN 5940) was leased to **Vueling**, Spain. **Vueling** also leased -214/W (SN 5925) from **Aviation Capital Group (ACG)**. **ACG** leased -214/W (SN 5933) to **Interjet**. **Thai AirAsia** leased -216/W (SN 5959) from **AirAsia**. **ICBC** leased -214 (SN 5921) to **Aeroflot**, and **CIT Leasing** leased -232/W (SN 5937) to **Sichuan Airlines**. **China Southern Airlines** leased -214 (SN 5945) from **China Aircraft Leasing Ltd. (CALC)**. **Iberia** sold newly delivered -232 (SN 5948) to **British Airways**. Elsewhere in Europe, **Lufthansa** received -214/W (SN 5935), and

Airbus delivered the 1,000th aircraft to China in December 2013. **Air China** received the A320 (-214 SN 5771) at a delivery ceremony where **Airbus China** CEO and President **Eric Chen** said, "I couldn't have imagined that we could have 1,000 **Airbus** aircraft in service in China when I joined the company 20 years ago." **Airbus** delivered its first jetliner to China in 1985, and the fleet grew slowly for the first decade. Deliveries to Chinese customers now account for over 20 percent of total **Airbus** production. The company is forecast to deliver 170 aircraft per year from 2014 to 2020, and **Airbus China's** goal is to grow the country's **Airbus** fleet to 2,000 by 2020.

easyJet acquired -214/W (SN 5927). In the U.S., **Spirit Airlines** accepted -232/W (SN 5954). In Asia, **Tianjin FAL** delivered -214 (SN 5816) to **Spring Airlines**, and -232 (SN 5817) to **China Southern Airlines**. **Starflyer** received -214/W (SN 5931), **IndiGo** accepted -232/Ws (SN 5923), **Etihad Airways** acquired -232/W (SN 5924), and **Cebu Pacific Air** purchased -214/W (SN 5934).

Airbus A321. **Airbus** delivered six A321s in January, including two -231/W Transcontinentals (SN 5932 & 5938) to **CIT Leasing** for lease to **American Airlines**. **American** took delivery of its first of 137 ordered A321-231/Ws (SN 5946). **American's** merger partner, **US Airways** received its 92nd -231 (SN 5939). The airline has 29 more A321s on order. **China Southern Airlines** leased one -231 (SN 5949) from **Air Lease Corp.**, and **TAM Linhas Aereas** purchased -231/W (SN 5947). The airplane was sold to **SMBC Aviation Capital** and leased back.

Aeroflot, the Russian flag carrier, took delivery of its first A320-214/W (SN 5967) equipped with Sharklets in February. The airline's A320s are powered by CFM56 engines, and fitted with a two-class cabin, with eight business class and 150 economy seats. The aircraft was named after a famous Russian chemist **Alexander Butlerov**, and was leased from **SMBC Aviation Capital**. **Aeroflot** leased the sixth of eight A320s, a -214/W (SN 5974) from **AWAS** from its new order pipeline. This was **Aeroflot's** third A320 to have factory-fitted Sharklets wingtips installed. The second A320 was -214/W (SN 5970) which was leased from **ICBC**. **Aeroflot** was the first airline in Russia to operate the A310, in 1992, as well as the first to operate the A320 Family in 2003. The airline currently has the biggest **Airbus** fleet in the region, with 90 A320 Family aircraft and 22 A330 Family aircraft.

Airbus A330. **Airbus** delivered three -200s and six -300s in January. **China Eastern Airlines** acquired one -243 (SN 1484), for a total of 22, and **Hawaiian Airlines** bought its 11th of 18 -243s (SN 1488). **Etihad Airways** received the 13th of 14 ordered -243s (SN 1486). **Turkish Airlines (THY)** acquired its 13th -303 (SN 1487), and **Philippine Airlines** accepted -343E (SN 1482), for a fleet total of 15 A330s. **Singapore Airlines** leased -343X (SN 1485) from **Aercap Ireland**, and **Malaysian Airlines** accepted -323X (SN 1489). **Airbus** delivered -343 (SN 1481) to **AirAsiaX**, and -302 (SN 1490) to **Iberia**.

Airbus A380. **Airbus** delivered one A380-841 (SN 144) to **British Airways**, for a fleet total of four. The airline has eight more on order.

Boeing

Boeing 737 NG. **Boeing** delivered 35 737s in January, including two -932ER/Ws (SN 31924 & 31925) to **Delta Air Lines**, for a fleet total of 14, with 86 more on order. **United Airlines** accepted two more -924ER/Ws (SN 42175 & 43530), for a total of 78. **Alaska Airlines** received its 14th -990ER/W (SN 36354). **American Airlines** took delivery of two -823/Ws (SN 31185 & 33233). Both were sold and leased back. **Aercap Leasing** purchased the first (SN 31185) and **Avolon** bought the latter (SN 33233). The **United States Navy** took delivery of its 23rd -8FV-P-8A Poseidon (SN 42251). **Air Lease Corporation** leased one -89L/W (SN 41314) to **Air China**, and one -81B/W (SN 41315) to **China Southern Airlines**. **China Southern** leased two -86N/Ws (SN 41245 & 41265) from **GECAS** and will lease eight more new -800s in 2014. The planes come from **GECAS'** order book with **Boeing**. **GECAS** also leased one -86N/W (SN 41266) to **SAS – Scandinavian Airline System**. **GOL Transportes Aéreos** took delivery of three -8EH/Ws (SN 39631, 39632 & 41163) from its own backlog. It sold the

first to **JSA-Jackson Square Aviation**, the second to **GECAS** and the third to **BOC Aviation** and leased them back. **ILFC** leased -8U3/W (SN 41794) to **Garuda Indonesia**, and **SMBC Aviation Capital** leased -89P/W (SN 39933) to **Shanghai Airlines**. **Aerolineas Argentinas** leased -81D/W (SN 39436) from **AWAS**, and -8BK/W (SN 41560) from **CIT Leasing**. **Aeroflot** leased -8LJ/W (SN 41198) from **Avia Capital Leasing**. **Norwegian Air Shuttle** received two -8JP/Ws (SN 39029 & 41121), and has 55 on order. **Air Europa** accepted -85P/W (SN 36595), and **Luxair** acquired -8C9/W (SN 41190). **Malaysia Airlines** added two -8H6/Ws (SN 40154 & 40155) to its fleet of 26. The aircraft were sold to **GECAS** and leased back. The airline will do a similar transaction with **GECAS** for two more -800s when they are delivered in March and April. **Lion Air** received two more -8GPER/Ws (SN 38744 & 38745) for a total of 23. Elsewhere in Asia, **Boeing** delivered -89L/W (SN 40023) to **Air China**, one -85C/W (SN 39907) to **Xiamen Airlines**, one -87L/W (SN 39140) to **Shenzhen Airlines**, one -87L/W (SN 41111) to **Kunming Airlines**, and one 84P/W (SN 39207) to **Hainan Airlines**. **SpiceJet** received its 25th -8GJ/W (SN 41397).

SilkAir took delivery of its first Next-Generation 737-8SA/W (SN 44217) in February. The delivery marked the start of the Singapore-based airline's transition to an all-**Boeing** fleet. **Boeing** will deliver 23 -800NGs and 31 MAX-8s to **SilkAir** over the coming years. **SilkAir** offers full-service amenities on flights to Malaysia, Thailand and Indonesia, and it will launch services to Cambodia, Vietnam, India and the Philippines starting in March. The airline is the regional wing of **Singapore Airlines** and currently flies more than 350 weekly flights to 45 destinations in 12 countries.

Norwegian Air Shuttle ASA took delivery of the 1,000th 737 fitted with the **Boeing Sky Interior**. It features modern sculpted sidewalls and window reveals, LED lighting that enhances the sense of spaciousness and larger pivoting overhead stowage bins. **Norwegian** was one of the launch customers for the **Boeing Sky Interior**, and this was the airline's 48th -8JP/W (SN 41125) with the new interior. The first one was delivered in October 2010, and more than 60 customers have ordered the new interior. It will be standard on **Boeing's** 737 MAX family of single-aisle airplanes.

Boeing 747. **Boeing** did not deliver any 747s in January, but **Lufthansa's** tenth 747-830 Inter-continental (SN 37836) landed at **Frankfurt Airport** on February 7, 2014. The **Lufthansa Group** will take delivery of seven new airliners in February and March, including one **Airbus** A380, one A330 and two A320s for **Lufthansa**. **Germanwings** will receive an A319 and **Lufthansa Cargo** will take delivery of a **Boeing** 777F freighter. The **Group** expects to receive 23 commercial aircraft in 2014.

Boeing 767. **Boeing** did not deliver any 767s in January.

Boeing 777. **Boeing** delivered six 777-300ERs in January. **Air China** received its 17th -39LER (SN 41442) and has two more on order. **Aeroflot** accepted -3MOER (SN 41687), and **British Airways** bought -336ER (SN 43702). **GE Capital Aviation Services Limited (GECAS)** leased -36NER (SN 42102) to **Ethiopian Airlines**. It came from the lessor's existing order book and is part of the airline's ambitious fleet expansion plans. **Ethiopian Airlines** has been a **GECAS** customer since 1993, and currently leases two 777F freighters, two 737-700s and a 757-200 from the company. **Emirates** acquired its 60th -31HER (SN 41359), and it has 60 more on order. **Thai Airways International** received its first of six -3D7ER (SN 42110).

Boeing 787. Boeing delivered four 787-8s in January. **Air India** acquired its 12th of 27 -8s (SN 36279). **All Nippon Airways** accepted its 24th -8 (SN 42247), and has a dozen more on order. **United Airlines** took delivery of -8 (SN 34827), and has nine in its fleet. **ILFC** leased the first VIP Dreamliner -8 (SN 35309) to **Jet Aviation Flight Services**. This was the first of two **Boeing Business Jets** BBJ 787-8 deliveries of 2014. The second Dreamliner (SN 40053) was delivered to the **Saudi Arabian Ministry of Finance and Economy** in February. The first VIP Dreamliner (SN 35303) was leased to **Abu Dhabi** by **ILFC** in December 2013. All three aircraft are stored and awaiting the fitting of an executive interior. **Boeing** said it would deliver three more BBJ 787s this year, and the manufacturer said customers had ordered 13 BBJ 787s, to be delivered through 2018.

Boeing has rolled out the first 787 Dreamliner built at the rate of 10 airplanes per month in February. The 787-8 (SN 35311) and the 155th Dreamliner built, will be delivered to **International Lease Finance Corp.** for operation by **Aeromexico**. To date, 115 787s have been delivered to 16 customers. The program has 1,030 total orders from 60 customers worldwide **Boeing** said the new 10 per month rate is the highest ever achieved for a twin-aisle airplane. The 787 program has now increased its production rate three times in just over a year, including to five airplanes per month in November 2012 and seven per month in May 2013.

Regional Jet

Bombardier delivered two CRJ900 NextGens (SN 15302 & 15303) to **Delta Air Lines** in January. They were leased to **Endeavor Air**, for operation under the **Delta Connection** brand. The airline now has 13 CRJ900NGs in its fleet, another 27 on order, and 30 on option. **Lufthansa Cityline** scrapped two CRJ700s (SN 10012 & 11034) at Blytheville, Arkansas, in December.

Embraer delivered one EMBRAER 170-200 LR (E175) (SN 17000385) to **Republic Airways** for operation on behalf of **American Eagle**. **BOC Aviation** leased the third of six EMBRAER 190s (SN 19000655) to **KLM** subsidiary, **KLM Cityhopper**. The remaining E190s will arrive by April 2014. **Air Astana** took delivery of its ninth E190 (SN 19000657).

GE Capital Aviation Services (GECAS) leased two EMBRAER 190s (E190) (SN 19000593 & 19000608) to **Air Costa**, in December. The regional Indian airline was founded in 2012 and leased its first two E170s (17000278 & 17000293) from **Embraer's EEC Leasing** in June 2013. It started operations in October 2013, and flies to six cities in India. **Air Costa** is a part of the **LEPL Group** a major urban infrastructure player in India. The airline ordered 50 **Embraer** E-Jets E2s in February. The first ones will be delivered in 2018.

Sukhoi. Sukhoi Civil Aircraft Company (SCAC) will replace all light specification Sukhoi Superjet 100 aircraft in **Aeroflot's** fleet with full specification aircraft in the

Sukhoi delivered the fourth of 20 **Sukhoi** Superjet 100-RRJ-95Bs (SN 95036) to **Interjet**, Mexico, in December. The aircraft was financed through a multilateral export credit guaranteed by **Coface**, **SACE** and **VEB** for the French, Italian and Russian partners, respectively. It represents one of the first financing transactions wholly guaranteed by **Coface**, the French export credit agency (ECA), for a regional aircraft. It is a first also for **SACE** acting as a direct guarantor for an aircraft with a 100 percent guarantee. It is also a first for the Russian government's **VEB** and follows **OECD** international rules for aircraft export credit financing, **Sukhoi** said.

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first half of this year. The manufacturer will continue to deliver full-spec SSJ100s thereafter, filling the contract for 30 aircraft. The airline has already obtained six full-spec SSJ100s to date. **Aeroflot** will trade back the 10 flight SSJ100s to **SCAC** and they will be sold to other airlines which had expressed interest in acquiring the aircraft. In 2005, **Aeroflot** and **SCAC** signed a contract for 30 Sukhoi Superjet 100 aircraft in standard specification, with a single class cabin of 98 passenger seats. Later, the airline decided to improve the aircraft specifications including the passenger cabin equipment, and avionics, which required some aircraft modifications. The parties agreed that the first 10 SSJ100s would be delivered to **Aeroflot** in the originally-contracted flight specification to avoid delivery delays and that they would be replaced by full contract specification aircraft. The fifth (SN 95041) and sixth (SN 95043) full specification Sukhoi Superjet 100 aircraft were delivered to **Aeroflot** in late January. On December 31, 2013, **Aeroflot** received its fourth SSJ100 (SN 95039) in full configuration. The aircraft was put into commercial operations in the beginning of January this year. The enhanced SSJ100s are being delivered to the airline in 87-seat configuration and they can fly up to 3,048 kilometers. The full specification aircraft includes an upgraded **Flight Management System (FMS)** and weather radar equipped with a wind direction detection function. Further, the full specification features additional video control cameras, separate lighting controls for both economy and business class and an additional working position for a flight attendant at the wall of the galley at the back of the aircraft. Individual ventilation vents over each passenger seat were also installed, thus improving passenger comfort. The full aircraft is equipped with three lavatories with diaper boards, and each three-seat-block in the cabin has an additional oxygen mask. Instead of three galleys, the aircraft contains four, one of which is equipped with two ovens. There is additional space to fit a baby cot, **Sukhoi** said.

Turboprop Aircraft

ATR. **LIAT** took delivery of its second ATR 42-600 (SN 1008) in late December, and **Air Antilles Express** received its first ATR 42-600 (SN 1010) in early January. The airline also operates three ATR 42-500s. **TransAsia Airways**, a Taiwanese full service airline, took delivery of its first new ATR 72-600 (SN 1133) in January. The airplane is the first of 12 ATR 72-600s ordered by **TransAsia Airways** as part of its fleet renewal and growth program. The other 11 -600s will gradually replace the airline's current fleet of eight ATR 72-500s over the next two years. **Mann Yadanarpon**, a new Myanmar-based airline, took delivery of ATR 72-600 (SN 1127).

Bombardier. **WestJet Encore** accepted its ninth 8Q-402 NextGen (SN 4462) in January.

Malawian Airlines of Lilongwe, Malawi, leased its first Q400 NextGen turboprop (ET-AQB, SN 4419) from its co-owner **Ethiopian Airlines**. **Malawian** launched domestic and international flights in January. The airline was founded in July 2013 and is the 15th operator of the type in Africa. It is a public-private partnership between the **Government of Malawi**, **Ethiopian Airlines** and Malawian institutional and individual investors.

Saab. **Skyworld Aviation** arranged the sale of three Saab 340Bs (SN 176, 215 & 221) to **NextJet**, Sweden, on behalf of **Sverigeflyg Leasing AB**. The airplanes were leased to **NextJet** since 2010 and the sale was concluded in December. **Skyworld Aviation** had previously leased or sold three Saab 340 aircraft and two CT7 engines on behalf of **Sverigeflyg Leasing AB**. The specialist leasing company is owned by **Braathens Aviation** and intends to change its name to **Braathens Leasing Sweden AB** to reflect its ownership.

Antiques and Other Junque

Air Transat, in collaboration with **Aerocycle**, an aircraft dismantling and recycling specialist, recently dismantled two **Airbus A310s** in an environmentally responsible and sustainable manner, and recovered 87 percent of their components. The two **Air Transat A310-304s** (SN 485 & 527) were dismantled at **Montréal-Mirabel International Airport** in July 2013 in compliance with an international standard established by the **Aircraft Fleet Recycling Association (AFRA)** and using an environmental management system introduced by **Aéroports de Montréal (ADM)**, the Montreal airports authority), with co-ordination provided by sustainable-development consulting firm **Eko-Conseil**. While there are currently no North American environmental standards for aircraft dismantling, the project initiated by **Air Transat** and **Aerocycle** succeeded in recovering some 83 tons of aluminum from the two aircraft, with all recycled materials processed locally. In choosing to dismantle locally, **Air Transat** ensured better control of environmental impacts and mitigated the hazardous materials management risk. With this project, the company is also helping create expertise in green recycling in Quebec, while supporting the local recycling economy. **Ron Haber**, President and CEO, **Aerocycle** said, "Over the next 20 years, about 12,000 commercial aircraft will need to be dismantled around the world. Quebec is already an aerospace hub, and our objective is to make Montreal a center of excellence for aircraft dismantling and recycling."

Universal Asset Management will disassemble three aircraft at its Tupelo, Mississippi, facility. An ex-**Monarch Airlines Airbus A300B4-605R** (SN 556), an ex-**Malaysia Airlines A330-322** (SN 100), and an A340-311 previously operated by **Lufthansa**, will be inducted into **UAM's End-of-Life Recycling Process**. The components that are removed from the aircraft will be added to **UAM's Airbus** aftermarket parts inventory. **Lufthansa** is storing four 1993/94-era A340-311s (SN 024, 027, 028 & 052) at Tupelo, which suggests that all four will be scrapped. **Malaysian Airlines** has also stored six more early-model A330-322s (SN 069, 073, 077, 107, 110 & 119) at Tupelo. Another two (SN 067 & 116) are stored elsewhere. **Monarch's A300B4-605R** (SN 540) was scrapped by **UAM** in 2013, and the airline flew -605R (SN 604) to Tupelo in February. **Monarch** has one last A300 (SN 605) in its fleet. Their A300s averaged 23 years of age.

Accidents and Safety

From Aviation Safety Foundation

Pacific Air Express Boeing 737-3B7SF freighter (ZK-TLC, SN 23705) was damaged at **Honiara International Airport**, Solomon Islands, when its right main landing gear collapsed upon landing on January 26. The airplane was substantially damaged but the crew escaped injuries. **Pacific Express** leased the 737 from **Airwork NZ**.

Lion Air Boeing 737-9GPER (PK-LFH, SN 35710) suffered a hard landing at **Surabaya-Juanda Airport**, Indonesia, on February 1. The airplane struck its tail and bounced several times which damaged the underside of the rear fuselage, engines and undercarriage. None of the crew nor passengers were injured.

British Airways Boeing 747-436 (G-BNLL, SN 24054) struck a building at Johannesburg when the pilots taxied for departure to London on December 22, 2013. The aircraft's starboard wing, outboard of

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the engines, was damaged as was the building. South Africa's **Civil Aviation Authority** is investigating the incident. **British** and **Boeing** estimated the cost of repairing of the aircraft, but the airline chose to write off the plane after some deliberation. It was more cost effective to scrap the airplane in South Africa than to fix it. The **Rolls-Royce** RB211-powered plane was built in 1990 and was one of the oldest 747s in **British's** fleet. It has flown more than 109,000 hours.

Algerian Air Force Lockheed C-130H-30 Hercules (7T-WHM, 4919) crashed in a mountainous area 30 kilometers south of **Constantine Airport**, Algeria, on February 11. All 99 passengers and four crew members were killed when the C-130 hit high ground. An **Air Force** spokesman said that bad weather and gusty winds were probably the cause of the crash.

An Unidentified Ukrainian Antonov An-28 crashed en route to Sana, Yemen, from Entebbe, Uganda, on January 20. The crew tried to make an emergency landing at **Addis Ababa International Airport**, but the plane crashed on approach. Both pilots survived the wreck.

Chukotavia Viking Air DHC-6-400 Twin Otter (RA-67282, SN 861) left the runway at Anadyr, Russia, and its nose gear collapsed on February 6. The airplane was caught by a wind gust. None of the nine people on board were seriously injured.

Nepal Airlines de Havilland Canada DHC-6 Twin Otter (9N-ABB, SN 302) crashed en route between Pokhara and Jumla, Nepal, on February 16. All 18 occupants were killed.

Air Greenland de Havilland Canada DHC-8-200 (OY-GRI, SN 477) left the runway at **Ilulissat Airport**, Greenland, on January 29. The airplane went off the left side of the runway and down a 30 to 45 foot dropoff. The aircraft was substantially damaged and three passengers were taken to the hospital.

Joy Air Xian MA60 passenger plane (B-3455, SN 0803) landed at **Zhengzhou-Xinzheng International Airport** on February 4, and its nose gear unexpectedly retracted. The nose of the plane was damaged, but there were no injuries to the 44 occupants.

An International Organization for Migration (IOM) leased **British Aerospace BAe-748-371 LFD** (5Y-HAJ, SN 1776) crash-landed at **Rubkona Airport**, South Sudan, on February 17. One crew member was killed and the other three were seriously injured when the plane struck two vehicles parked on the runway and burned out. The airplane was chartered **748 Air Services**, which leased it from **Global Airlift**. The **IOM** was carrying humanitarian goods.

The U.S. Federal Aviation Administration (FAA) ordered U.S. airlines to inspect the elevator flight control surfaces of the more than 400 **Boeing** 767s in their fleets. The **FAA** said the controls may jam and possibly cause some pilots to lose control of the aircraft. The order was published in the **Federal Register**, and called for enhanced inspections of the elevator flight control mechanism. So far, no elevator malfunctions have been identified as causing an accident. The **FAA** became aware of the potential problem in 2000, and it ordered enhanced inspections at that time. **Boeing** eventually designed a permanent fix, and the **FAA** now wants airlines to replace suspicious parts within six years.

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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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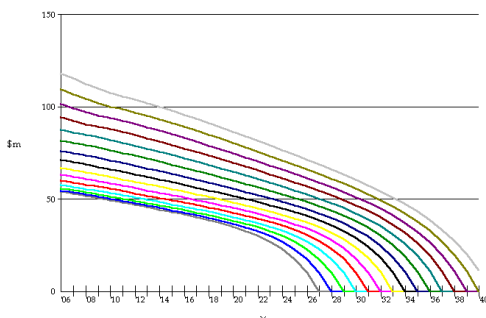
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CAVAS Graph



Profit & Loss Report

Aircraft Type		Airbus A340-300				
Period		1	2	3	4	5
REVENUES (US\$)						
Passengers	49,328,754	49,270,739	49,212,559	49,154,213	49,095,701	49
Freight & Mail	8,879,176	8,868,733	8,858,261	8,847,758	8,837,226	8
Other Revenue	986,575	985,415	984,251	983,084	981,914	1
TOTAL OPERATING REVENUE	59,194,505	59,124,887	59,055,070	58,985,055	58,914,841	58
VARIABLE EXPENSES						
Fuel	6,918,975	6,917,340	6,915,470	6,913,177	6,910,455	6
Landing Fees	3,021,823	3,021,823	3,021,823	3,021,823	3,021,823	3
Enroute Charges	392,440	392,440	392,440	392,440	392,440	3
Pax Commissions	7,399,313	7,399,313	7,399,313	7,399,313	7,399,313	7
Freight Commissions	1,331,876	1,331,876	1,331,876	1,331,876	1,331,876	1
Food & Supplies	3,993,194	3,993,194	3,993,194	3,993,194	3,993,194	3
Passenger Liability Insurance	379,590	379,590	379,590	379,590	379,590	3
TOTAL VARIABLE COST	23,443,212	23,443,212	23,443,212	23,443,212	23,443,212	23
SEMI-VARIABLE EXPENSES						
Crew Salaries & Expenses	5,177,760	5,177,760	5,177,760	5,177,760	5,177,760	5
Maintenance & Engineering	587,650	587,650	587,650	587,650	587,650	5

Profit & Loss Report

Aircraft Type		Airbus A340-300				
Period		1	2	3	4	5
FIXED EXPENSES						
Station Overhead	346,597	345,923	345,249	344,575	343,901	1
Maintenance Burden	176,295	176,295	176,295	176,295	176,295	1
Other Overhead	0	0	0	0	0	0
TOTAL FIXED COST	522,892	522,218	521,544	520,870	520,196	1
TOTAL OPERATING COST	31,464,497	31,464,497	31,464,497	31,464,497	31,464,497	31
General and Admin. Allocation	1,573,225	1,573,225	1,573,225	1,573,225	1,573,225	1
TOTAL COST	33,037,722	33,037,722	33,037,722	33,037,722	33,037,722	33
OPERATING PROFIT OR LOSS	26,156,782	26,156,782	26,156,782	26,156,782	26,156,782	26
D-CHECK ADJUSTMENT						
Cumulative Hours	4,830	9,660	14,490	19,320	24,150	2
Cumulative Dollars	315,000	0	0	0	0	0
ADJUSTED CASH FLOW	25,841,782	25,841,782	25,841,782	25,841,782	25,841,782	25
AIRCRAFT LIFE ADJ. CASH FLOW	25,841,782	25,841,782	25,841,782	25,841,782	25,841,782	25

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 \$118.00m

Estimated Life: 35 years File No. 013

Search Term

Add Modify Delete OK

Aircraft: Airbus A340-300 - Widebody 4 Engine Passenger

CAVAS Figures

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
2006	54.00	54.61	55.83	57.66	60.10	63.14	66.80	71.07	75.94	81.43	87.52	94.23	101.54	109.47	118.00
2007	52.85	53.49	54.70	56.56	58.99	62.01	65.62	69.95	74.86	80.37	86.52	93.18	99.12	106.73	115.25
2008	51.68	52.36	53.61	55.43	57.85	60.84	64.42	68.69	73.65	79.18	84.76	90.48	96.97	104.20	112.39
2009	50.49	51.19	52.46	54.29	56.70	59.67	63.24	67.50	72.44	77.95	83.52	89.23	95.06	101.00	107.00
2010	49.28	49.99	51.27	53.10	55.50	58.46	62.01	66.24	71.16	76.65	82.22	87.93	93.76	99.70	105.70
2011	48.06	48.78	50.06	51.89	54.28	57.23	60.77	64.98	69.85	75.34	80.92	86.68	92.51	98.41	104.40
2012	46.83	47.55	48.83	50.66	53.04	56.00	59.53	63.73	68.58	73.96	79.44	85.00	90.61	96.27	101.97
2013	45.59	46.31	47.59	49.42	51.80	54.75	58.27	62.46	67.30	72.66	78.12	83.67	89.21	94.74	100.34
2014	44.34	45.06	46.34	48.17	50.54	53.49	57.00	61.18	65.91	71.25	76.69	82.12	87.54	92.95	98.34
2015	43.08	43.80	45.08	46.91	49.28	52.23	55.74	59.92	64.64	69.88	75.29	80.70	86.09	91.46	96.81
2016	41.81	42.53	43.81	45.64	48.00	50.95	54.46	58.63	63.34	68.56	73.95	79.32	84.67	89.99	95.28
2017	40.53	41.25	42.53	44.36	46.72	49.67	53.18	57.35	62.05	67.25	72.62	78.00	83.36	88.69	93.98
2018	39.24	39.96	41.24	43.07	45.42	48.37	51.88	55.97	60.65	65.83	71.19	76.54	81.87	87.18	92.46
2019	37.95	38.67	39.95	41.78	44.13	47.08	50.59	54.67	59.34	64.50	69.74	75.06	80.36	85.64	90.90
2020	36.65	37.37	38.65	40.48	42.83	45.78	49.29	53.37	58.03	63.17	68.39	73.69	78.96	84.21	89.45
2021	35.35	36.07	37.35	39.18	41.53	44.48	48.00	52.07	56.73	61.86	67.06	72.32	77.56	82.77	87.96
2022	34.04	34.76	36.04	37.87	40.22	43.17	46.68	50.75	55.40	60.51	65.68	70.81	75.91	81.00	86.07
2023	32.73	33.45	34.73	36.56	38.90	41.85	45.36	49.43	54.07	59.17	64.32	69.42	74.49	79.54	84.58
2024	31.42	32.14	33.42	35.25	37.59	40.54	44.05	48.12	52.75	57.94	63.07	68.15	73.19	78.21	83.22
2025	30.11	30.83	32.11	33.94	36.28	39.23	42.74	46.81	51.44	56.62	61.74	66.81	71.84	76.85	81.84
2026	28.80	29.52	30.80	32.63	34.97	37.92	41.43	45.50	50.12	55.29	60.40	65.46	70.47	75.46	80.43
2027	27.49	28.21	29.49	31.32	33.66	36.61	40.12	44.19	48.81	53.96	59.05	64.08	69.06	74.00	78.92
2028	26.18	26.90	28.18	30.01	32.35	35.30	38.81	42.88	47.50	52.64	57.71	62.71	67.66	72.57	77.45
2029	24.87	25.59	26.87	28.70	31.04	34.00	37.51	41.57	46.19	51.32	56.39	61.39	66.34	71.25	76.12
2030	23.56	24.28	25.56	27.39	29.73	32.68	36.19	40.25	44.87	49.99	55.06	60.06	65.01	69.92	74.78
2031	22.25	22.97	24.25	26.08	28.42	31.37	34.88	38.94	43.56	48.67	53.72	58.71	63.65	68.55	73.41
2032	20.94	21.66	22.94	24.77	27.11	30.06	33.57	37.63	42.24	47.35	52.40	57.39	62.33	67.22	72.07
2033	19.63	20.35	21.63	23.46	25.80	28.75	32.26	36.32	40.93	46.03	51.07	56.06	60.99	65.87	70.71
2034	18.32	19.04	20.32	22.15	24.49	27.44	30.95	35.01	39.61	44.71	49.74	54.71	59.62	64.48	69.29
2035	17.01	17.73	19.01	20.84	23.18	26.13	29.64	33.70	38.30	43.39	48.42	53.39	58.31	63.17	67.96
2036	15.70	16.42	17.70	19.53	21.87	24.82	28.33	32.39	36.99	42.07	47.09	52.06	56.98	61.84	66.63
2037	14.39	15.11	16.39	18.22	20.56	23.51	27.02	31.08	35.68	40.75	45.76	50.71	55.61	60.46	65.24
2038	13.08	13.80	15.08	16.91	19.20	22.15	25.66	29.72	34.32	39.39	44.40	49.35	54.25	59.09	63.87
2039	11.77	12.49	13.77	15.60	17.84	20.79	24.30	28.36	32.95	38.01	43.01	47.96	52.85	57.68	62.45
2040	10.46	11.18	12.46	14.29	16.53	19.48	22.99	27.05	31.64	36.69	41.68	46.61	51.49	56.31	61.07
2041	9.15	9.87	11.15	12.98	15.22	18.17	21.68	25.73	30.32	35.36	40.34	45.27	50.15	54.97	59.72
2042	7.84	8.56	9.84	11.67	13.91	16.86	20.37	24.42	29.00	34.03	38.96	43.87	48.74	53.55	58.30

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