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## ENGINES SPECIAL EDITION

Getting to grips  
with spare engine leasing

Interview - ELFC

Company Profile

Aviation Management (AMI)

MRO News

from around the world

People on the Move

latest appointments

ICF Analysis



# Need for cockpit safety review

The European Commission just recently announced that a special task force is being set up to review cockpit safety rules after the germanwings crash in which co-pilot Andreas Lubitz deliberately brought down an A320.

According to a statement the taskforce would examine "the cockpit door-locking system and cockpit access and exit procedures, as well as the criteria and procedures applied to the medical monitoring of pilots." The French investigators confirmed that Lubitz deliberately crashed the German plane into the Alps after practising the manoeuvre on the outbound

trip from Düsseldorf to Barcelona.

The case has brought to light the issue of pilots and mental health, depression and how this is monitored. A BBC reporter recently spoke to pilots attending a mental health clinic in Portugal. The pilots complained about the mounting pressures put on them by airlines to do more and meet tight turnaround times. Pilots then fail to complain due to fear of being dismissed.

After the germanwings crash, German investigators discovered that Lubitz, had been

signed off sick by his doctor on the day of the tragedy. He had suffered from severe depression in the past and a computer found at his home showed he had used the internet to research suicide methods in the days leading up to the crash.

Concerning, very very concerning!

Keith Mwanalushi  
Editor



Leasing engines has become an economically attractive solution.  
Photo: Rolls Royce

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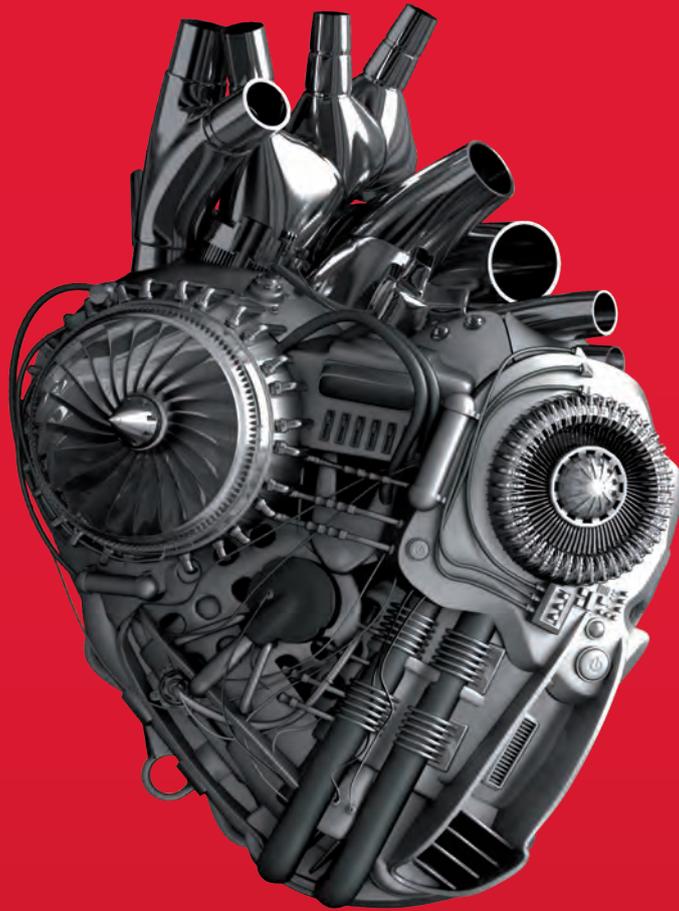
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**Opinion**

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OUR EXPERIENCE DRIVES YOUR EXCELLENCE.



When what matters is finely tuned, everything works. Iberia's merger with British Airways has made us stronger. Our technicians have more than 85 years of experience and are experts in their field. With our extended product range and joint resources we can offer you the high quality service that you demand.

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## Andrea Luebke, Vice President Purchasing MRO, MTU Maintenance speaks on solutions to dispose of surplus inventories.

*The value of surplus spare parts inventory is often overlooked by owners. What strategies should airlines be looking at to best monetise their excess inventories?*

Only recently, MTU Maintenance has added material and asset management services to its portfolio. The aim is to help customers get the most of their asset at the end of its life cycle. Under the motto asset value maximisation, engines can be either leased out to third party operators or be sold as a whole or as a sum of its parts. Besides engine teardown, MTU is now also focusing on integrated and modular solutions which can be put together individually according to the customer's requirements. The portfolio ranges from the analysis and evaluation of the engine's residual value, the sale or re-lease of the entire engine up to comprehensive parts management, including engine teardown, parts repair as well as storage and re-marketing of useable parts either for the customer's own use or to third party operators. The parts management is particularly interesting for customers with surplus inventory.

*Acquisitions and mergers within the airline industry are increasingly common - new owners have to make decisions on thousands of jet spares after the merger or acquisition. In such situations what should the main considerations be in terms of stock disposal and/or relocation?*

MTU Maintenance has expanded its leasing business, a demand which came from our customers which are increasingly interested in leasing engines to save costs

for own spares. In that context, we have established a so-called lease engine pool which consists of MTU engines as well as third party engines. These engines are then made available to other pool members for a predefined monthly membership fee. Pool members thus have access to spare engines that cover their needs for the required duration, including scheduled and unscheduled events. MTU acts as the pool manager and coordinates all transactions among members.

*It seems systems for selling surplus aircraft parts are largely driven by policies designed to dispose of the parts quickly. However, many excess inventories are obsolete and/or slow moving throughout the market. What challenges do these present for the airline and inventory specialists?*

Airlines are increasingly demanding integrated solutions for their maintenance needs, therefore we believe that a close cooperation between inventory specialists and creative, independent MRO service providers as well as creating packages is a solution to sell surplus parts. MTU Maintenance, for example offers an innovative solution for mature engine fleets which combines salvation services with other maintenance options. The result is a custom-tailored solution that saves costs and maximises engine value.

*In your experience, which aircraft or types of parts are you seeing greater demand for disposal and why?*

Generally spoken, we see an immediate effect for all aircraft with high fuel con-



Luebke- The parts management is particularly interesting for customers with surplus inventory

sumption. Nevertheless, based on the actual oil pricing, there is a larger focus on aircraft MRO needs for 50-seaters and large widebody aircraft with high airframe effort.

*Do you have any deliberate systems in place to enhance the value of surplus inventories?*

MTU Maintenance is not only a traditional MRO provider but offers customer's additional services from which customers benefit in terms of maintenance costs and maximisation of their engine value. Among those services are leasing and mature engine solutions as well as asset and material solutions. With our long-term experience and a high-level of know-how regarding repairs and defining work scopes, we can easily optimise surplus material usage in terms of costs and turnaround time for our customers.

## Bombardier adjusts Global 5000 and Global 6000 aircraft production rate

Bombardier Business Aircraft confirmed that current economic conditions and geopolitical issues in some market regions, such as Latin America, China and Russia, have impacted order intake levels industry-wide. As a result, Bombardier Business Aircraft will reduce its production rate for Global 5000 and Global

6000 aircraft. Approximately 1,750 employees – up to 1,000 in the Montréal region, up to 480 in Toronto and up to 280 in Belfast – will be progressively impacted at various stages of the Global 5000 and Global 6000 production cycle. Reductions will begin in June 2015 and continue progressively through the first quarter of 2016. Bombardier will communicate with affected employees over the coming months and work to mitigate the impact as

much as possible. "We have seen an industry-wide softness in demand recently in certain international markets and are taking steps to adjust our production accordingly. We fully understand the impact this will have on our affected employees and their families and we will do everything possible to support them," said Éric Martel, President, Bombardier Business Aircraft.



A350XWB Finnair

Photo: Airbus

### **Finnair and Lufthansa Technik sign contract on A350 XWB component support**

Finnair, the first European airline to operate the Airbus A350 XWB aircraft, has awarded Lufthansa Technik a 12-year agreement for component support for the new aircraft type. Lufthansa Technik is one of the leading providers of technical services for the aviation industry, and the agreement with Finnair is the company's first contract for A350 XWB component support. The exclusive Total Component Support TCS contract covers the availability and repair services of A350 XWB components. Finnair already has an agreement with Lufthansa Technik on engine related components service for V2500 engines and APU services for APS3200. Finnair's own maintenance organisation at the Helsinki Airport is responsible for the line maintenance of Finnair's current fleet and the new A350 XWB fleet. Finnair has firm orders for 19 A350 XWB aircraft, the first four of which are expected to arrive in the fleet in the second half of this year, with another seven in 2016 and 2017. The complete order will be fulfilled by 2023.

### **Japan Airlines renews CF6-80C2 contract with TES Aviation Group**

Japan Airlines (JAL) has renewed its LLP supply agreement with TES Aviation Group (UK). The programme covers approximately 15 CF6-80C2 shop visits at the Engine Maintenance Centre in JAL's maintenance affiliate, JAL Engineering Company, for its 767 fleet. Headquartered in Shinagawa Tokyo, Japan's major carrier operates a large

fleet of narrow and wide-body aircraft covering an extensive domestic network with regional and international services.

### **Parker Aerospace signs long-term support agreement with Tianjin Airlines**

Parker Aerospace, a business unit of Parker Hannifin Corporation, a global leader in motion and control technologies, and its Customer Support Operations have signed a long-term agreement with Tianjin Airlines to provide a comprehensive maintenance package for its fleet of Embraer 190 E-Jet aircraft. This agreement is part of an enhanced service offering provided by Parker in partnership with operators. The agreement supports the maintenance, repair, and overhaul needs for the airlines' 190 E-Jet fleet in addition to inventory management and a quick turnaround replenishment service.

### **Safi Airways signs base maintenance agreement with Joramco**

Joramco and the Afghani registered operator, Safi Airways, reached a base maintenance agreement with the Jordan based MRO facility to provide heavy airframe maintenance solutions for three A320 aircraft operated by Safi during 2015. The maintenance services to be provided by Joramco includes C check tasks along with A check tasks beside performing some ADs and SBs. Safi Airways is a privately-owned Afghan airline operating international scheduled services from its

Kabul base which link Kabul with Dubai, Jeddah, Delhi, Islamabad, and a domestic service connecting Kabul with Herat. Safi also provides ACMI leasing services, executive, commercial, charters and has an FBO and ground handling operation at Kabul International Airport.

### **Veca Airlines chooses TP Aerospace Leasing to provide full service A319 Cycle Flat Rate (CFR) program**

Veca Airlines (Vuelos Economicos de Dentro America), the first Salvadorian airlines, has awarded TP Aerospace Leasing a long-term Wheels & Brakes Cycle Flat Rate (CFR) Program in support of its current and planned A319 fleet. With TP Aerospace Leasing's highly flexible, cost effective, tailor made and plug'n'play Component Maintenance, Pool Access, Onsite Lease Inventory and Logistics Program in place. Veca Airlines intends to bring competition into the Central American aviation market by offering cost effective tickets everyone can afford. Veca Airlines will initially fly between its home base in San Salvador, El Salvador to Guatemala and Costa Rica – with Panama, Venezuela, Colombia, Caribbean and United States to be added later. TP Aerospace's first full service cost-per-landing program in Central America will be supported via TP Aerospace Leasing's significant rotatable pool located in Orlando, Florida – where all maintenance will also be handled by in-house workshop TP Aerospace Technics.

### **Kaman signs multi-year MOU with Zodiac for 737 landing gear kits and assemblies**

Kaman Aerosystems has signed a five-year Memorandum of Understanding (MOU) with Zodiac Interconnect Americas (Zodiac) to manufacture and kit components and assemblies for Boeing 737NG, 737 MAX, and P-8 aircraft. The MOU has an expected value in excess of US\$6m. Work will be performed at Kaman facilities in Chihuahua, Mexico and Jacksonville, Florida.

### **GKN Aerospace wins Gulfstream contract to supply G500/600 wing skins**

GKN Aerospace has been selected by Gulfstream Aerospace to supply the wing skins for its latest G500 and G600 ultra-long range business jets. In a long term contract GKN Aerospace is to produce the upper and lower wing skins for the



Southwest Airlines selected Honeywell's advanced cockpit technologies

Photo: Honeywell

development and production aircraft. The G500 and G600 upper wing skins are constructed in a single piece, eliminating fasteners and joints, lowering weight and reducing maintenance. The lower wing skins are comprised of several panels and incorporate a number of complex design features. All skins are being manufactured at GKN Aerospace's advanced machined structures facility in Wellington, Kansas, USA, using the country's longest multi-spindle gantry machining centre.

### **AJW Aviation signs three year power-by-the-hour contract with Camair-Co to support Boeing fleet**

AJW Aviation has been chosen by Cameroon Airlines Corporation (Camair-Co) to provide power-by-the-hour for its fleet of Boeing aircraft: B767-300 & B737-700. AJW will deliver full ATA Chapter support without exemptions hereby providing Camair-Co with the dispatch reliability, streamlined component management and aligned cost savings that they need to fulfil the airline's operational objectives and route expansion ambitions. Camair-Co commenced operations in 2011. It is based in Douala, Cameroon, and has about 438 multi-national employees. The airline currently flies internationally to Paris and N'Djamena, capital of Chad, with domestic routes covering Yaounde, Garoua and Maroua in Cameroon. Camair-Co is a full member of AFRASCO (AFRICA AVIATION SAFETY COUNCIL) and this expands its network in the sub-region and west central Africa (Libreville, Brazzaville, Lagos, Kinshasa and Cotonou).

### **Southwest Airlines selects Honeywell cockpit technologies for Boeing 737 MAX aircraft**

Honeywell Aerospace's full suite of cockpit technologies has been selected by Southwest Airlines for its future fleet of Boeing 737 MAX and existing fleet of Boeing 737NG aircraft. The selection will provide Southwest with cockpit technologies that offer enhanced navigation capabilities and prepare the airline to meet future government-mandated flight safety regulations. Honeywell will provide Southwest Airlines with its Integrated Multi-Mode Receiver (IMMR), IntuVue RDR-4000 3-D Weather Radar, Aspire satellite communications systems, and other safety, communication and navigation technologies. Southwest will be the first airline to integrate Honeywell's IMMR into its fleet, providing the airline with enhanced landing and routing performance.

### **AJW Aviation enhances long-term aircraft support partnership for Tigerair Australia with NORDAM repair capabilities**

AJW Aviation is heightening operational efficiencies for Tigerair Australia's fleet of A320 aircraft via a new strategic repair partnership with NORDAM Singapore for provision of some major components, such as nacelles, thrust reversers and cowls on a pool basis during repair and overhaul. AJW already delivers complete inventory technical management (ITM) for the airline across a variety of areas, including components,

major assemblies, wheels and brakes, APUs, thrust reversers and consumables, underpinned by a global inventory of A320 spares in accessible hubs across the AsiaPAC region.

### **Monarch Aircraft Engineering to provide line maintenance to American Airlines**

Monarch Aircraft Engineering, the engineering division of The Monarch Group, has been contracted to provide line maintenance technical handling to American Airlines. The contract, which commences in May, will see Monarch's highly experienced engineering team support American Airlines Boeing 757-200 aircraft at Birmingham Airport in the UK. The American carrier, which is a new customer for MAEL, will be operating the Boeing 757-200 on its new daily route from JFK Airport into Birmingham.

### **Pratt & Whitney selects Christchurch Engine Center for Geared Turbofan engine MRO network**

Pratt & Whitney has named Christchurch Engine Center as one of the first facilities in its Geared Turbofan engine MRO network to provide maintenance and overhaul services for the PW1100G-JM engine. The Christchurch Engine Center, located in Christchurch, New Zealand, is a joint venture between Pratt & Whitney and Air New Zealand. Pratt & Whitney and its program partners, MTU and JAEC, have been initially selected to maintain the PW1000G engine fleet. Additionally selected facilities will be strategically located in Asia, Europe and North America and will be tooled, trained and ready to support the fleet on Day 1 of entry into service. Pratt & Whitney's experienced, high volume shops will streamline operations, continuously improve customized work scopes, and incorporate best practices to offer the highest quality work at competitive costs.

### **Bombardier breaks ground on new Business Aircraft maintenance facility in Mainland China**

Bombardier and Tianjin Airport Economic Area have officially signed definitive agreements confirming their joint venture and have commenced construction of a maintenance facility for Bombardier Business Aircraft, to be located in Tianjin, China. Leaders from both sides celebrated the venture with an official groundbreaking ceremony. The service facility, which is set to open



Liebherr-Aerospace Lindenberg GmbH, Lindenberg (Germany)

in 2017, is 8,897 m<sup>2</sup> (95,766 ft<sup>2</sup>) including hangar and office and back shop areas. Bombardier Business Aircraft customers will be able to receive maintenance, repair, overhaul, and associated activities and services at the facility. Under the joint venture agreement, the facility will be operated using similar processes and procedures that govern Bombardier's wholly-owned Service Centre network worldwide. Bombardier currently has an installed base of over 120 business aircraft within the Greater China region. Photo: Bombardier Text: Bombardier breaks ground on new Business Aircraft maintenance facility in Tianjin, China

### Liebherr-Aerospace wins contract for Boeing 777X

Boeing Commercial Airplanes has selected Liebherr-Aerospace to supply three components for the folding wing tip system of the Boeing 777X. The components chosen are the fold subsystem, the latch pin actuator and the secondary lock actuator. Relying on its experience in high-lift systems, gears, torque tubes and hydraulic power drive units, Liebherr-Aerospace will design a compact, extremely reliable and powerful fold subsystem. With its motor and rotating

actuator, this system will fold the wing tip after landing, thus reducing the wingspan of the new wide-body aircraft by 7 meters (3.5 meters on each side) from 71.8 meters to 64.8 meters. When it comes to the development of the actuators, Liebherr-Aerospace can rely on its extensive know-how in flight control systems. All three components will not only be designed, but also developed, manufactured and serviced by Liebherr-Aerospace Lindenberg GmbH, Lindenberg (Germany), Liebherr's worldwide center of excellence for flight control and landing gear systems. With this new contract, Boeing and Liebherr are strengthening their decade-long collaboration.

### Airbus selects Korean Air Aerospace to manufacture Sharklet wingtips for the A330neo Family

Korean Air Aerospace Division (KAL-ASD), the aerospace manufacturing division of the Korean Air Group, has been selected by Airbus to supply new Sharklet wingtip devices including a wingspan extension for the A330neo – the new variant of the best-selling A330 Family of widebody aircraft. Under the terms of the agreement, KAL-

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ASD will manufacture the new composite wingtip devices at its Busan facility in South Korea, and supply them to the A330 Family final assembly line in Toulouse. Inspired by the curved wingtips on the A350 XWB, the A330neo's devices will increase overall wingspan from 60.3m of today's A330ceo to 64m while conferring increased lift with reduced drag. Along with the A330neo's latest generation Rolls-Royce Trent 7000 engines, these new wingtips plus other aerodynamic enhancements and new cabin features will enable the aircraft to achieve an overall 14% reduction in fuel burn per seat compared with A330ceos in service today.

### Ducommun wins multiyear contract from Rolls-Royce for Trent 1000-TEN aircraft engine

Ducommun Incorporated has been selected by Rolls-Royce to produce complex interconnect systems for the Trent 1000-Ten engine – which will power all variants of the Boeing 787 Dreamliner. Ducommun will manufacture these products through 2022 at its operation centers in Joplin,

Mo. and Guaymas, Mexico. The Trent 1000-TEN engine, scheduled to be certified by the European Aviation Safety Agency (EASA) before the end of 2015, incorporates proven, next-generation technology from the latest member of the Trent engine family, the Trent XWB, to produce a superior engine for the Boeing 787 Dreamliner. It will have more thrust and efficiency, offering up to a three percent reduction in fuel consumption compared with the current Trent 1000 standard.

### SmartLynx Airlines becomes latest company to sign onto GA Telesis composite repair group SNAP program

GA Telesis Composite Repair Group (CRG) reported that SmartLynx Airlines has signed onto and become its latest SNAP customer. SmartLynx Airlines will not only be a part of GA Telesis' Strategic Nacelle Access Program (SNAP), but it will also have 24/7/365 access to flight control surface and other structural pooled inventory to support Airbus A320 aircraft fleet operations. The agreement provides SmartLynx with access to a pool of serviceable thrust reversers, inlet

and fan cowls and a variety of flight control surfaces for immediate exchange/loan.

### Finnair signs 12-Year V-Services Fleet Hour Agreement with IAE

Finnair has signed an exclusive, 12-year V-Services Fleet Hour Agreement to manage 10 V2500 engines. The agreement will cover installed engines on five Airbus A321ceo aircraft. The V2500 engine is offered through International Aero Engines, a multinational aero engine consortium whose shareholders comprise Pratt & Whitney, Pratt & Whitney Aero Engines International GmbH, Japanese Aero Engines Corporation and MTU Aero Engines. Engines maintained under an FHA qualify for Pure-V status, which recognizes engines that are maintained to the highest OEM build standards. Pure-V engines include only OEM-approved parts and repair, which provides the highest level of engine residual value over the long term. Pure-V engines provide operators with predictable maintenance costs, fewer unscheduled engine removals and longer time on-wing between shop visits.

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Flying Colours Corp, speaking at the opening of the Singapore facility



Photo: Flying Colours

### Flying Colours opens Singapore facility

North America-headquartered completion and refurbishment specialist Flying Colours Corp. has inaugurated its interiors facility at the Bombardier Service Centre, Seletar Airport, Singapore. The grand opening ceremony, took place on April 21st. With a capacity for multiple aircraft projects to be undertaken at any one time Flying Colours has already completed its first project to refinish the woodwork of a Singapore-based Bombardier Challenger 605. The twelve-strong team consisting of local recruits and technicians from the Canadian facility is now working on two Asia Pacific-based Global models refurbishing and refinishing the woodwork on both aircraft. Flying Colours offers a full range of interiors services including preliminary interior inspections, interior removals and installation, interior repair work, interior modification work and interior refurbishment work at the Singapore- facility. The full service interior offering complements the fully certified EASA repair station enabling owners and operators to have interior work, comprehensive line and heavy maintenance services carried out in one location.

### MTU Maintenance completes 15,000 engine shop visits

MTU Maintenance is celebrating 15,000 completed engine shop visits since the foundation of the company 35 years ago. The jubilee engine, a CF34-10E was delivered to Aeroméxico Connect which has been a customer of MTU Maintenance since 2010. MTU Maintenance is one of the top 5 engine maintenance, repair and overhaul (MRO) providers in the world. Customers benefit from innovative and customized services, high-tech repair solutions and a global network of locations which ensure true MRO alternatives and one-stop shop solutions. Aeroméxico Connect is the regional airline of Mexico's flag carrier Aero-

méxico. With a fleet of 65 Embraer aircraft, it is considered the most important regional airline in Mexico and one of the biggest Embraer aircraft operators worldwide offering more than 300 daily scheduled flights to 42 destinations in Mexico, ten in the United States and four in Central America. Only recently, Aeroméxico Connect has expanded its existing exclusive maintenance contract with MTU Maintenance until 2022. The company is now responsible for all 65 CF34-10E engines which power its fleet of Embraer 190s.

### CFM names LEAP tooling suppliers

CFM International is granting licenses to three world-class tooling suppliers to support the advanced new LEAP engine. Customers will be able to purchase all LEAP line maintenance and overhaul shop tooling from AGSE, Dedienn Aerospace, and Rhinestahl. The arrangement allows LEAP operators to compare offers from all three fully-licensed suppliers and select the one best suited to their individual price, lead-time, sales, and support criteria. Under the terms of the license, all suppliers provide identical coverage but the agreement is flexible enough to allow customer to split their orders between the three companies. AGSE, Dedienn Aerospace, and Rhinestahl will all provide customer support, training, repair, warranty, and documentation, and each will begin producing annual catalogs starting in 2016.

### Embraer Aircraft Maintenance Services signs contract extension with Republic Airways

Republic Airways awarded Embraer Aircraft Maintenance Services (EAMS) with a three-year extension of its heavy maintenance contract for work performed at the EAMS facility, located

in Nashville, TN. EAMS will continue to provide airframe maintenance, modifications and repair services for Republic's Embraer fleet under a contract that was initially signed in May 2011.

### NORDAM and GECAS partnership for flight controls begins in July with A320 parts

NORDAM and GE Capital Aviation Services Asset Management Services (GECAS AMS), the recertified commercial aircraft components solution of GECAS, announced their partnership to provide airline customers with flight control systems begins July 1st. The program begins with Airbus A320 flight controls, which are stocked in Tulsa, Okla., and Victorville, Calif. locations. It will expand soon to include flight controls for other aircraft types, with a goal of expanding the program to other aircraft products in the future. "This is a unique partnership that gives airlines with an AOG another option: faster access to NORDAM-quality repaired flight control systems to minimize aircraft downtime and service interruptions," said Jeff Keisling, vice president global sales and acquisitions for GECAS' Asset Management Services. According to Bailey J. Siegfried, NORDAM's vice president of global marketing whose duties encompass oversight of the firm's global rotatable asset portfolio, availability of the GECAS AMS inventory means more options for NORDAM customers. "With access to the breadth and depth of serviceable parts from GECAS AMS, our ability to exceed customer expectations for quickly providing solutions is enhanced," Siegfried said. Announced in 2014, the partnership combines GECAS' inventory of flight control parts from its aircraft teardowns with NORDAM's strengths in component repair to offer an airline customer a faster, lower-cost solution than repair of the airline's part.

### AMETEK MRO signs three-year agreement with AJW Group

Recognizing AMETEK MRO's comprehensive global repair and overhaul expertise for Airbus A320 and Boeing 737, 757 and 767 aircraft, the AJW Group signed a three-year strategic partnership agreement with AMETEK to provide supplementary component repair and overhaul services that support AJW's global fleet of more than 900 aircraft under contract and its expanding range of repair services. The AMETEK MRO capabilities AJW plans to utilize include those in the areas of electromechanical, hydraulics, pneumatics, environmental, heat transfer, fuel pumps and controls, avionics and instruments



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### Construction for Lufthansa Technik's new facility in Aguadilla, Puerto Rico on track



Construction work on Lufthansa's new facility in Aguadilla, Puerto Rico

Photo: Lufthansa Technik

The construction for Lufthansa Technik's new facility in Aguadilla, Puerto Rico is on track. Seven months after ground-breaking in August 2014 the hangar shell has been structurally completed, as well as the floor slab for the first and second bay, and most of the flooring of the workshops and offices. Currently the completion of the internal walls, air conditioning ductwork, electrical conduits and piping is ongoing. The facility extends over a total area of 215,000 square feet. Lufthansa Technik Puerto Rico (LTPR) will be FAA Part 145 and EASA Part 145-approved. Initial customers will be Airbus A319, A320 and A321 aircraft operators from the Americas. The first layover is planned for July 2015. A second line is planned to be operational in November 2015, followed by three more lines until early 2017 to include Boeing 737 by then. About 400 highly qualified staff will work for LTPR. In addition to the theoretical training which is conducted in Puerto Rico by the Aviation Institute of Puerto Rico (AAIPR) in consultation with Lufthansa Technical Training the new staff is also undergoing extensive practical training in Lufthansa Technik's European facilities to ensure the same high quality level at the new facility. The new hangar will handle five lines of heavy and overhaul checks (C-, IL- and D-checks), along with other maintenance work on narrow body aircraft. By using state-of-the-art technologies it is even possible to paint aircraft in the hangar while overhaul work is being conducted in parallel.

### Lufthansa Technik becomes largest MRO service provider for Avianca

Avianca Holdings Group and Lufthansa Technik AG, international provider of technical services for commercial aircraft, have recently signed several MRO (maintenance, repair & overhaul) contracts, making Lufthansa Technik the largest components maintenance provider of the airline group. The two companies reached the following agreements: Lufthansa Technik is providing a Total Component Support TCS for the Boeing 787 fleet of Avianca, currently consisting of four aircraft; with further eleven to be delivered. The contract will run over ten years and covers component maintenance, repair, overhaul as well as Home Base support at the airline's home base in Bogota, Colombia. The component supply will be realized via the Lufthansa Technik component network in the United States and Europe. Lufthansa Technik has already been supporting Avianca in the production phase of the 787 via its aircraft production inspection teams which are permanently based at Boeing in Seattle and Charleston, moreover the entry into service has been supported with specialist located at Bogota. Additionally, Lufthansa Technik is also providing a ten-year TCS for the current fleet of 16 Airbus A330 passenger and cargo aircraft, including home base support in Bogota and Medellin. The two companies recently also signed a ten-year Total Component Maintenance TCM contract for the whole Airbus A320 fleet of the Avianca

Holdings Group of currently around 100 aircraft. Lufthansa Technik will support Avianca with an aircraft production inspection team for the 33 A320 neo which Avianca has ordered at Airbus.

### Virgin America and Lufthansa Technik announce contract extension until 2021

Lufthansa Technik AG and Virgin America announced an extension of their existing contract through to 2021. Under the new contract Lufthansa Technik will continue to provide its Total Material Operations TMO services for Virgin America. The new agreement also includes the order for ten Airbus A320 aircraft to be delivered between July 2015 and June 2016. Since Virgin America began operations in August 2007, Lufthansa Technik has supplied all components, consumables and expendables for the range of goods supplied to the fleet includes around 1,200 different LRUs, including engine related parts, galley supplies, and parts for passenger seats. The current supply portfolio also includes nearly 4,900 expendables for roving the customer's line maintenance stations. Material supply services are provided from three warehouses in San Francisco, Los Angeles and New York (JFK) Lufthansa Technik has a 24/7 team fully integrated in the Operation Control Center in San Francisco as an interface to the customer's planning and maintenance control units. The airline's fleet of 53 Airbus 320 family aircraft, and also provides logistics and warehousing.

### Lufthansa Technik signs 10-year component supply agreement with U.S. Carrier Frontier Airlines

Hamburg-based maintenance, repair and overhaul (MRO) provider Lufthansa Technik AG and U.S. low-cost carrier Frontier Airlines have signed a comprehensive long-term component supply agreement for the airline's current and future fleet of Airbus A320 aircraft. The contract will run through November, 2024. The Total Component Support (TCS) agreement covers component overhaul and engineering services as well as pooling and Home Base Lease. The component supply will be realized via the Lufthansa Technik facilities in Miami / Fort Lauderdale and Los Angeles. Frontier currently operates a fleet of Airbus A319/A320 aircraft with nine Airbus A321 aircraft on order with deliveries beginning in late 2015. The airline is also scheduled to begin taking delivery of A320neo family aircraft in 2016.



Southwest Airlines' new aircraft seats  
Photo: Southwest Airlines

### Southwest Airlines selects seat for future Boeing 737-800 and 737 MAX aircraft

Southwest Airlines has selected the Customer seats for its future Boeing 737-800 and 737 MAX aircraft deliveries. The carrier, in partnership with Boeing, will be the first to roll out the new seats, beginning mid-2016, on new deliveries of its Boeing 737-800. B/E Aerospace, who designed and engineered the seats, unveiled the new product at the Aircraft Interiors Expo in Hamburg, Germany. In 2011, Southwest Airlines led the industry by announcing it would be the launch customer of Boeing's new 737 MAX aircraft with the first delivery expected in 2017. As the operator of the largest Boeing 737 fleet in the world, Southwest will continue with tradition and lead the industry as the launch customer for the next generation in aircraft seating.

### Discovery Air Technical Services signs new service agreements

Discovery Air Technical Services (DATS), a wholly owned subsidiary of Discovery Air, has been awarded a heavy maintenance contract by a major US regional airline operating ERJ 135/145 regional jets. This new customer contract covers an initial 9 aircraft. The work will be carried-out

at DATS' Heavy Maintenance facility at the Jean Lesage International Airport in Quebec City during the summer of 2015. Furthermore Morningstar Air Express, of Edmonton Alberta, awarded DATS a heavy maintenance contract for one ATR-72-202 aircraft. This work will be carried-out at DATS' Heavy Maintenance facility in Quebec City, during the summer of 2015.

### Discovery Air Technical Services adds ATR42 and ATR72 Series 600 on AMO scope of work

Discovery Air Technical Services has received its Approved Maintenance Organisation (AMO) Certificate from Transport Canada for the ATR42 and ATR72 series 600 of aircraft. Liat has signed a three year exclusive agreement with DATS for their entire fleet. The first aircraft is set to arrive in May 2015. Work will be carried-out at DATS' Heavy Maintenance facility at the Jean Lesage International Airport in Quebec City in the coming months.

### Kellstrom Repair Services approved as Honeywell authorized repair station

Kellstrom Repair Services, a wholly owned subsidiary of Kellstrom Defense, has been approved by Honeywell International to become a Honeywell Authorized Repair Station. As the newest Honeywell Authorized Repair Station, the signing of the Honeywell Authorized Repair and Overhaul Agreement authorizes Kellstrom Repair Services to perform Organizational, Intermediate, and Depot level maintenance on GTCP36, GTC85, GTCP85 & GTCP95 Series Auxiliary Power Units, Engine Driven Compressors, Air Flow Multipliers, Air Cycle Machines, Aircraft Cooling Turbines, pneumatic components, fuel valves, and other related accessory components. As a Honeywell Authorized Repair Station, Kellstrom Repair Services also entered into a Parts Reclamation Engine Surplus ("PRES") licensing agreement with Honeywell for the reclamation and refurbishment of parts used on GTCP36, 85, and 95 Series Auxiliary Power Units.

### GE Aviation's first additive manufactured part takes off on a GE90 engine

The GE90 engine, which was the first jet engine to utilize composite fiber polymeric material on the front fan blades 20 years ago, achieved another milestone—becoming the first GE engine to incorporate an additive manufactured component for the T25 sensor housing. The U.S Federal Aviation Administration granted certification of the T25 engine sensor for the GE90-94B engine in February. The upgraded T25 sensor, located in the inlet to the high pressure compressor, is being retrofitted into more than 400 GE90-94B engines in service. The T25 sensor provides pressure and temperature measurements for the engine's control system. "Additive manufacturing has allowed GE engineers to quickly change the geometry through rapid prototyping and producing production parts, saving months of traditional cycle time for the T25 sensor housing without impacting the sensor's capabilities," said Bill Millhaem, general manager of the GE90/GE9X engine program at GE Aviation. The T25 sensor housing is just the start of additive manufacturing at GE Aviation. Several next-generation engines currently in development will incorporate the advance manufacturing technique. On the LEAP engine for narrowbody aircraft and the GE9X for the Boeing 777X aircraft, GE Aviation will produce part of the fuel nozzles with additive manufacturing.

### AMETEK MRO signs three-year agreement with AJW Group

Recognizing AMETEK MRO's comprehensive global repair and overhaul expertise for Airbus A320 and Boeing 737, 757 and 767 aircraft, the AJW Group signed a three-year strategic partnership agreement with AMETEK to provide supplementary component repair and overhaul services that support AJW's global fleet of more than 900 aircraft under contract and its expanding range of repair services. The AMETEK MRO capabilities AJW plans to utilize include those in the areas of electromechanical, hydraulics, pneumatics, environmental, heat transfer, fuel pumps and controls, avionics and instruments.



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Euravia staff

Photo: Euravia Engineering

### Major Middle East PT6 MRO contract for Euravia

Euravia Engineering celebrates its 3rd consecutive contract for PT6 MRO services in support of a major Middle East operator. The award of this multi-million dollar contract further demonstrates Euravia's ability to continue to offer high-quality, cost-effective services to its customers in the region. Approved by FAA, EASA, TCCA, various OEMs and numerous National Airworthiness Authorities, Euravia is recognised as the largest independent, approved MRO facility focussing entirely on Pratt & Whitney Canada PT6A, PT6C and PT6T engines, supporting more than 200 Civil and Defence customers in over 50 countries. Euravia has established an international reputation for delivering high quality, cost-effective engine support.

### Embraer and Compass Airlines extend pool program for new E-Jets operated for American Airlines

Embraer and Compass Airlines recently extended their ten year Flight Hour Pool Program agreement for the Compass E-Jet fleet. The Flight Hour Pool Program currently serves 42 aircraft for Compass and will include Pool component support for the carrier's fleet of 20 new E175 jets to be operated for American Airlines under the American Eagle brand. The Flight Hour Pool Program agreement covers over 400 repairable part numbers and includes common and extended Pool components with on-site stock for Compass's E170 and E175 fleet.

### COOPESA to build new 6-bay hangar at Juan Santamaría Airport in San José, Costa Rica

A new 6 bay, 158,122 ft<sup>2</sup> hangar for COOPESA will start to rise soon after groundbreaking works began on March 18th, 2015 at Juan Santamaría Airport in San José, Costa Rica. The new facility is set to replace the existing one which will need to make room for future airport expansion at SJO and will

be located across the runway near the west end of the airport property. The hangar will also be able to accommodate up to 6 narrow body aircraft and is expected to be operational during the first quarter of 2017. It will be devoted to the same models currently handled by COOPESA (B757; A320 FAM; B737NG, and E190). Plans are already underway for a second hangar after completion of the first one that should add capacity by 6 bays.

### Dassault Aviation opens line service facility in Beijing

Dassault Aviation signed an agreement with Beijing-based Deer Jet authorizing it to provide line maintenance and unscheduled maintenance for the Falcon 7X. Located at Beijing Capital Airport, Deer Jet is one of the largest business jet operators in the Asia Pacific region. It manages and supports a large fleet of executive aircraft, including the 7X. The Authorized Service Agreement allows Deer Jet to perform light line maintenance (up to 2A and 2A+ inspections) and unscheduled maintenance for Chinese registered Falcon 7X from its Beijing facility. Deer Jet has also applied for EASA and FAA full repair station approvals, which are expected to be granted within a year. Currently, the company has three technicians on staff dedicated to supporting Falcon customers, including provision of 24/7 AOG support. The facility is equipped with a substantial stock of Falcon tooling and spare parts, and has also access to more than US\$5m in spares at Dassault's nearby Beijing spares facility.

### STG Aerospace wins major contract to supply emergency floorpath lighting for all new-build Embraer aircraft

STG Aerospace, a leader in pioneering aircraft lighting technologies, has won a contract to supply its market-leading saFTglo photoluminescent emergency floorpath marking system for the next generation of Embraer aircraft launching in 2017. Having supplied saFTglo to the current generation Embraer aircraft through a Tier 2 contract achieving Tier 1 status with the Brazil-based Embraer is a major milestone for STG Aerospace, adding to the Tier 1 contracts the company already has with leading manufacturers Boeing, Bombardier, SuperJet International and AgustaWestland. STG Aerospace will be supplying Embraer with both saFTglo SuperSeal Lite (SSL) and its latest next generation system, SuperSeal UltraLite (SSUL), depending on the profile of carpets selected. Both SSL and SSUL are available in different colour options, enabling a dramatic enhancement of cabin aesthetics with no compromise on safety.

### Air New Zealand and AJW Group expand partnership

Air New Zealand and AJW Group have signed a new agreement which will extend the component maintenance and repair services provided at Air New Zealand's Auckland Engineering and Maintenance base. Under the agreement, Air New Zealand will now carry out some component maintenance on Tigerair Australia's Airbus A320 fleet on behalf of AJW Group. Air New Zealand Chief Operations Officer Bruce Parton says this latest announcement is significant for Air New Zealand's Engineering and Maintenance division and builds on the airline's existing relationship with AJW Group. "Air New Zealand have a strong relationship with AJW, leasing components for our own A320 fleet and in turn Air New Zealand carrying out maintenance on these components. "Together we want to take this relationship further and create a real hub for component maintenance in the Asia Pacific region."

### AAR amends OEM support agreement with Liebherr-Aerospace

AAR has amended a long-term general terms agreement with Liebherr-Aerospace. Under terms of the deal, Liebherr-Aerospace will provide full support of AAR's nose-to-tail comprehensive solution on the Bombardier fleet. The services are performed by Liebherr-Aerospace Saline and Liebherr-Aerospace Toulouse SAS, which is the Original Equipment Manufacturer (OEM). Under the existing agreement, Liebherr-Aerospace grants access to technical documentation, spare parts and technical support to AAR's component repair centers in Garden City, New York, and Amsterdam, both of which perform repairs on Liebherr-Aerospace equipment. The agreement strengthens AAR's position in the aviation component support business and covers products Liebherr-Aerospace designs and manufactures for Bombardier, including the integrated air management system (ATA 21, 25, 30, 36) on board the CRJ700/900/1000 regional aircraft.

### Flying Colours Corp. begins work on first three Sparkle Roll CRJ200 aircraft

Just six months after the joint venture announcement between China-based Sparkle Roll Technik Co. Ltd. (SRT) and Flying Colours Corp. the North American MRO, completion and refurbishment specialist, three of the eight B-registered CRJ-200 aircraft conversions are already in situ at Flying Colours' Peterborough headquarters in Canada, with the work schedule well under way. The initial trio

of aircraft is being reconfigured from regional jet layout to a mixed class shuttle format. Each cabin has been divided into three separate areas. The aft section incorporates a 20-seat economy section, the middle section four business class seats in two double club layout, whilst the front cabin will feature a three seat divan alongside a double club business class seat configuration. In addition an aft lavatory will be fitted whilst a small forward galley will be installed. The fully executive version of the Sparkle Roll CRJ's will reflect past Flying Col-

ours CRJ ExeLiner conversions with an advanced inflight entertainment system and a supplemental fuel auxiliary system as engineered by Flying Colours Corp. specifically for CRJ conversions being installed. The work schedule also includes heavy maintenance work on the aircraft. The design of the remaining five aircraft is still being finalized but it is anticipated a number of them will be refurbished in 15 seat ExeLiner configurations, a style mirroring a Bombardier Challenger 850, a format developed by Flying Colours that has already

proved popular in the Asian region in past years. The first of the aircraft are due to be redelivered to SRT during July 2015, with one being completed every month until February 2016. Supporting the completion activity is a team from SRT who have been shadowing workers in key departments at the Peterborough facility since the beginning of the year. It is planned that the later conversions will have the interiors monuments manufactured in North America, but that the SRT technicians will complete the final installation in China

## Other News

**SAFRAN Snecma** and **Aeromat France** have signed a partnership to provide worldwide lease service of engine stands for all types of CFM56 engines. Aeromat will manage the pool of stands according to OEM regulations for such equipment. This engine stand lease service will be provided for SAFRAN Snecma Group but also for any other customer requiring CFM56 engine stands.

**TAG Aviation** has unified all of its maintenance centres under the name '**TAG Aviation Maintenance**

**Services'**. The new organisation, which is made up of eight service centres, allows the company to take full advantage of increased business demand and enhance the service for its clients around the globe. TAG Aviation has regrouped all of its maintenance centres under the same organisation, reflecting the scope of maintenance services that it offers across Europe and beyond. TAG Aviation has heavy maintenance centres in Geneva and Farnborough and offers comprehensive maintenance services in Sion, Paris, Clermont-Ferrand, Madrid, Hong Kong and

Lomé in Togo. TAG Aviation clients benefit from highly-trained teams that have the expertise and flexibility to maintain their aircraft and make specific modifications – all available 24/7. TAG Aviation is approved by all main aircraft manufacturers and has certification to work on over sixty types of aircraft. TAG Aviation offers airframes, avionics, troubleshooting and ramp services as well as ten specialist workshops, such as paint shop, interior refurbishment and non-destructive testing, making it the leading one-stop-shop for aircraft maintenance.



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## Lufthansa Technik

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### DVB Bank posts strong results for first quarter of 2015

DVB Bank, the international transport finance specialist, more than doubled consolidated net income for the first quarter of 2015, from €33.9m to €74.9m. At €140.6m, total income (comprising net interest income after allowance for credit losses, net fee and commission income, results from investments in companies accounted for using the equity method, net other operating income/expenses, and the net result from financial instruments in accordance with IAS 39), was up 68.0% year-on-year (3m 2014: €83.7m). Net interest income rose by 13.9%, from €56.9m to €64.8m. DVB's new business in Shipping Finance, Aviation Finance, Offshore Finance and Land Transport Finance comprised 51 transactions with an aggregate volume of €1.7bn (3m 2014: 40 transactions with an aggregate volume of €1.1bn). Net allowance for credit losses amounted to €13.4m (3m 2014: €-2.2m). Specifically, new allowance recognised for credit losses totalled €26.1m, of which €19.6m was accounted for by Shipping Finance, due to the persistently difficult environment in some segments of the shipping market. Conversely, allowance for credit losses of €15.5m was reversed (Shipping Finance: €10.8m). Net interest income after allowance for credit losses of €51.4m was lower than the previous year's figure (3m 2014: €59.1m). Consolidated net income before taxes amounted to €84.3m (3m 2014: €40.1m). The expected bank levy for the fiscal year 2015, in the amount of €10.3m, already needed to be deducted from this figure at the beginning of this year. During 2014, the Bank paid an aggregate bank levy of €3.6m. Consolidated net income after taxes rose to €74.9m (3m 2014: €33.9m).

### Willis Lease Finance earns US\$2.3m in 1Q2015

Willis Lease Finance Corporation (WLFC), an independent jet engine lessor in the commercial finance sector, reported first quarter 2015 net income of US\$2.3m, or \$0.29 per diluted share, compared to net loss of \$0.03 per diluted share in the fourth quarter of 2014 and net income of US\$4.3m, or \$0.53 per diluted share, in the first quarter of 2014. A major highlight during the first quarter involved Willis Lease entering into an engine lease support agreement with Southwest Airlines, to provide long-term lease support to Southwest for twenty-two CFM56-7B24 spare aircraft engines over the course of the next five years. The first two engines to be leased under this agreement have now been delivered. "I'm very proud of the work our team did to put this transaction together, and it's an outstanding achievement to have been selected by Southwest for this program," said Willis.

### TransDigm Group releases fiscal 2015 second quarter results

TransDigm Group Incorporated (TDG), a leading global designer, producer and supplier of highly engineered aircraft components, reported results for the second quarter ended March 28th, 2015 and announces potential financing transactions. Net sales for the quarter rose 4.8% to US\$619.0m from US\$590.8m in the comparable quarter a year ago. Net income for the quarter rose 22.7% to US\$110.9 million compared to US\$90.4m in the comparable quarter a year

ago. Adjusted net income for the quarter rose 12.2% to US\$119.7m from US\$106.6m in the comparable quarter a year ago. EBITDA for the quarter increased 12.8% to US\$275.6m from US\$244.4m for the comparable quarter a year ago. EBITDA as defined for the period increased 9.5% to US\$288.1m compared with US\$263.0m in the quarter a year ago. EBITDA as defined as a percentage of net sales for the quarter was 46.5%.

### Airbus Group reports robust first quarter 2015 results

Airbus Group reported robust first quarter 2015 results with improved cash flow and confirmed its full year guidance. Group order intake in the quarter was €21bn (Q1 2014: €21bn), with the order book value rising to €955bn as of March 31st, 2015 (year-end 2014: €858bn) taking into account a positive revaluation linked to the strengthening of the US dollar. Airbus received 101 net commercial aircraft orders in the quarter (Q1 2014: 103 net orders), including 34 A330 Family aircraft. Airbus Helicopters received 86 net orders (Q1 2014: 78 units), including 49 H145s and 19 H175s, while in April the H225M Caracal was preselected by Poland for the test phase of its multi-role military helicopter tender. Order intake by value at Airbus Defence and Space rose 16%, with good momentum seen for military aircraft including seven light and medium transport aircraft. Group revenues totalled €12.1bn (Q1 2014: €12.6bn), mainly reflecting the phasing of deliveries at Commercial Aircraft which are expected to be back-loaded in 2015, especially for the A350 XWB and A380. A total of 134 commercial airplanes were delivered (Q1 2014: 141 units), including one A350 XWB and four A380s. Commercial Aircraft's revenues totalled €8.6bn with favourable foreign exchange mitigating the lower delivery volume. Net income increased by 80% to €792m (Q1 2014: €439m), while earnings per share (EPS) rose by the same amount to €1.01 (Q1 2014: €0.56). The finance result was €-366m (Q1 2014: €-107m) and included negative one-offs of €229m from foreign exchange revaluation linked to the weakening of the euro.

### Boeing reports strong first-quarter results

Boeing reported first-quarter revenue increased 8% to US\$22.1bn on higher commercial deliveries. Core earnings per share (non-GAAP) increased 12% to US\$1.97, reflecting strong performance across the company, and GAAP earnings per share was US\$1.87. Net earnings increased 38%. The Company reaffirmed its 2015 financial and deliveries guidance. Cash and investments in marketable securities totaled US\$9.6bn at quarter-end, down from US\$13.1bn at the beginning of the year, primarily due to the share repurchases and timing of cash flows. Debt was US\$9.0bn, down from US\$9.1bn at the beginning of the year. Total company backlog at quarter-end was US\$495bn, down from US\$502bn at the beginning of the year, and included net orders for the quarter of US\$15bn. Commercial Airplanes first-quarter revenue increased 21% to US\$15.4bn on higher delivery volume and mix. First-quarter operating margin was 10.5%, reflecting the dilutive impact of higher 787 deliveries. During the quarter, Commercial Airplanes captured orders for 52 737 MAX airplanes. The 737 program has won over 2,700 firm orders for the 737 MAX since launch. Also during the quarter, the company opened a new Propulsion Systems

facility at Boeing South Carolina that will initially support the 737 MAX and 777X, delivered the first Boeing South Carolina-built 787-9 Dreamliner and received 330-minute ETOPS certification on the 747-8 Intercontinental. Commercial Airplanes booked 110 net orders during the quarter. Backlog remains strong with over 5,700 airplanes valued at US\$435bn.

### Embraer posts first quarter 2015 results

In the first quarter of 2015, Embraer delivered 20 commercial and 12 executive (10 light and 2 large) jets; The Company's firm order backlog ended the quarter at US\$20.4bn, compared to US\$19.2bn at the end of the first quarter in 2014 and US\$20.9bn in backlog at the end of 2014. As a result of aircraft deliveries, coupled with revenues from the Company's Defense & Security business, first quarter revenues were US\$1,055.9m. EBIT and EBITDA margins were 7.5% and 14.1%, respectively in the first quarter, which were higher than the 7.4% EBIT margin and 12.2% EBITDA margin registered in the first quarter of 2014. Net loss attributable to Embraer shareholders and loss per basic ADS totaled US\$ (61.7)m and US\$(0.3370), respectively. Adjusted net income in the first quarter was US\$48.3m, which excludes non-cash deferred income taxes and social contribution.

### Spirit AeroSystems reports first quarter 2015 net income of US\$182m

Spirit AeroSystems reported first quarter financial results driven by positive operating performance of mature programs. Spirit's first quarter 2015 revenues were US\$1.7bn up 1% compared to the same period of 2014. Operating income was US\$235m, up from US\$194m for the same period in 2014. Net income for the quarter was US\$182m, compared to net income of US\$154m in the same period of 2014. Spirit's backlog at the end of the first quarter was US\$46bn driven by strong commercial aerospace demand.

### MTU Aero Engines starts 2015 with rise in revenues and earnings

In the first quarter of 2015, MTU Aero Engines AG increased its revenues by 20% to €1.099,5bn (1-3/14: €913.0m). The group's operating profit rose by 10% to €97.7m (1-3/14: €89.0m). The EBIT margin amounted to 8.9%, compared with 9.7% for the same period in the previous year, and earnings after tax increased by 22% to €68.2m (1-3/14: €56.0m). Revenues in the commercial engine business increased by 27% to €635.5m (1-3/14: €500.5m). The key drivers of those revenues were the V2500 for the Airbus A320 family, the GP7000 engine for the A380, and the GENx for the Boeing 787 and 747-8. The V2500 program was the main source of revenues in the commercial maintenance business, which saw its revenues climb by 26% from €303.6m to €383.9m. Revenues in the military engine business followed a downward course, decreasing by 22% to €91.2m (1-3/14: €116.6m). The EJ200 Eurofighter engine accounted for the greater part of these revenues. At the end of March 2015, MTU's or-

der backlog stood at €12,681.1m, which corresponds to a production span of approximately three years.

### B/E Aerospace reports first quarter 2015 financial results

B/E Aerospace reported first quarter 2015 revenues of US\$690m an increase of 7.0% as compared with the prior year period (revenues increased 7.7 percent adjusting for the impact of Euro denominated sales). In addition, revenues from the Company's Russian customers were severely impacted by geopolitical and macroeconomic forces, and demand from defense customers was also weak. Excluding sales to Russian and defense related end markets and adjusting for negative impact from currency, revenues increased 10.1%. Operating earnings of US\$125.7m increased 10.1%, and operating margin of 18.2% expanded 50 basis points. On a GAAP basis, operating earnings increased 14.2%. First quarter 2015 net earnings and net earnings per diluted share were US\$77.6m, representing increases of 21.3%, as compared with the prior year period. On a GAAP basis, net earnings and earnings per diluted share increased 22.8% and 21.3%, respectively.

First quarter 2015 commercial aircraft segment ("CAS") revenues of US\$526.1mn were negatively impacted by a significant decline in sales to Russian and defense end markets. Exclusive of the aforementioned factors and adjusted for negative impact from currency, CAS revenues increased 2.9%. Operating earnings of US\$98.4m increased 5.7%, and operating margin of 18.7% increased 90 basis points as a result of favorable product mix including higher aftermarket revenues.

First quarter 2015 business jet segment ("BJS") revenues of US\$163.9m increased 35.2%. Revenue growth was driven by higher sales of super first class products and acquisitions. BJS revenues excluding the impact of acquisitions increased 8.9%. Operating earnings increased 29.4% to US\$27.3m, and operating margin of 16.7% reflects increased investment in developing additional new, highly innovative, bespoke product offerings.

### Safran posts first-quarter 2015 adjusted revenue growth of 14.3%

Safran reported that first-quarter 2015 adjusted revenue was €3,935m, up 14.3% year-on-year including significant positive currency impacts mainly due to the considerable strengthening of the USD. The average USD/EUR spot rate in Q1 2015 was 1.13 compared with 1.37 a year ago. Adjusted revenue growth was 3.4% at constant currency or 2.4% on an organic basis. Organic revenue growth was driven by continued momentum in Aerospace services and Security activities. Civil aftermarket grew 17.8% in USD terms, and continues to be driven by first overhauls of recent CFM56 and GE90 engines. Full-year 2015 outlook is confirmed: Safran expects adjusted revenue to increase by a percentage in the high-single digits (at an estimated average rate of US\$ 1.20 to the Euro) and adjusted recurring operating income to grow yet again significantly in low double digits compared to 2014 at a hedged rate of US\$ 1.25 to the Euro. Free cash flow is expected to represent 35% to 45% of adjusted recurring operating income, an element of uncertainty being the amount of advance payments and the rhythm of payments by state-clients.

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## Engines to spare?

Analysis by **Keith Mwanalushi**

Accessibility to spare engines is crucial for aircraft operators. Availability, cost, financing and maintenance all come in to play to ensure a smooth operation. **AviTrader MRO** looks closer at the spare engine lease and finance sector.



Engine pooling is an attractive solution for spare engines at a financially comfortable rate.

Photo: MTU Maintenance

Engine leasing has become increasingly attractive to airlines for many of the same reasons aircraft leasing has grown significantly over the last 20 years. “It allows the acquisition and use of high priced assets with little cash outlay, or the freeing up of capital through a sale and leaseback (SLB) transaction,” comments Craig Welsh, SVP and CCO - Americas and Asia at Willis Lease. “Another reason is that the residual value risk is shifted to the lessor, which is becoming a bigger reason for airlines as they transition over to newer technology aircraft. More than 50% of all commercial aircraft are expected to be leased by 2020 and we expect spare engines to follow that trend.”

Cliff Topham SVP, for sales and business development at Werner Aero concurs saying leasing has become attractive to airlines from a budgetary purpose to enable a straight relationship between operating cost and therefore planning of profitability. “Ownership creates ‘lumpy’ transactions and the potential for not adequately provisioning for cost. The recent revival of ‘green time’ leasing has become popular as airlines defer maintenance on their own assets and use the utility value of the leased asset,” Topham says.

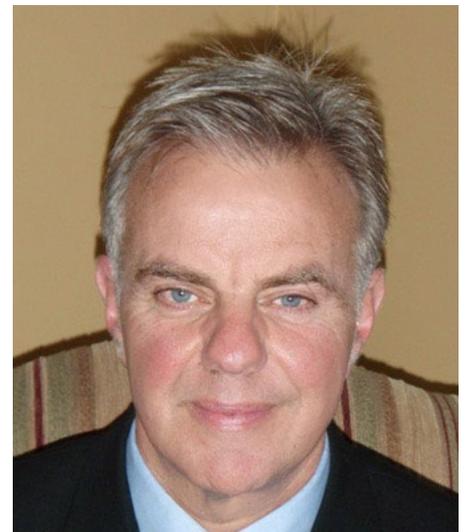
Some engine MRO providers see a great demand for short-term lease engines. Martin Friis-Petersen, managing director of MTU Maintenance Lease Services B.V believes one reason for this development is the rapidly growing aviation business which puts operators under a lot of pressure in terms of cost and time. “Leasing has become an economically attractive solution for many operators, which for example want to free themselves from spare engine ownership. Another reason is that operators are increasingly seeking for integrated solutions which allow them to keep their costs low, especially in the field of maintenance,” Friis-Petersen point out.

Arguably the biggest underlying difference between engines and aircraft in the world of leasing is that an engine can be restored to nearly new condition during the maintenance cycle throughout its life. Whereas the rest of the aircraft, a few other components aside, has a finite useful life as Welsh puts it. “Because of this, the proportion of an aircraft’s value that resides in its engines increases over time, so engine condition and maintenance become a more significant cost driver in operating and leasing mid to late life aircraft,” he adds.

This is where Welsh sees Willis Lease Finance Corporation (WLFC) adding value – “by leveraging our engine expertise and large portfolio of engines to drive down the cost of operating and transitioning out of mid-to-late life aircraft and engines. We have a new programme launching soon that we expect to have a big impact on how airlines finance, maintain, and manage this type of equipment,” Welsh anticipates.

MTU Maintenance has expanded its existing lease business and has founded two joint ventures with Sumitomo Cooperation, a leading Japanese trading house. Whereas MTU Maintenance Lease Services B.V. based in Amsterdam (MTU stake 80%) focuses on increasing the engine lease pool by providing airlines, MROs and lessors with short- and medium-term lease

solutions, MTU also took a 10% participation into Sumisho Aero Engine Lease B.V. which concentrates on long-term leasing activities. MTU’s former lease engine activities, which focused on spare engine support during shop visits, mostly for MTU’s engine MRO customers, are now trans-



Cliff Topham says due to OEM control the possibility for an operator to find cost savings from the market are limited.

ferred into MTU Maintenance Lease Services B.V.

So looking closely, there are a number of solutions available for airlines to manage spare engine requirements but there are several factors for engine operators to consider. "It depends on what an airline is looking for," Tobias Kurre, head of engine lease at Lufthansa Technik tells AviTrader MRO. "In case an airline plans to retire parts of a fleet the best option might be to look for spare engine leasing options in the market. There are special offers available that can include MRO solutions, but they don't have to."

Kurre gives an example of Lufthansa Technik's tailor made offer "smart.life" solutions for exactly this type of requirement, for a period where fleets will be retired and flexibility and cost control are key. Kurre adds: "In another case, if an airline seeks to reduce cost for a fleet that will remain in operation for the years to come, partnering with an expert provider can offer cost efficient solutions that guarantee access to spare engines without owning the assets."

Robert Korn, president at Apollo Aviation Group advises that when looking at spare engine solutions it's important to have a combination of long term leases, and a good network and plan for access to short term leases in the event of unscheduled removals or maintenance peak events.

Welsh agrees that there are a number of factors to consider when developing a plan to manage spare engine requirements, and there really isn't a single solution that works best for all airlines. However he believes that every airline should have a spare engine strategy that takes into account the airlines' aircraft fleet plans, engine maintenance philosophy, and capital require-



Robert Korn, President at Apollo Aviation Group



Managing spare engine requirements involves several factors.

Photo: Iberia

ments, and so on. "For instance, an airline that plans to keep their aircraft for the entire life cycle, has engine MRO capability, and a strong balance sheet, then operating leases may not be an attractive option for managing spare engine requirements apart from some short-term top up needs," says Welsh.

Welsh further explains: "However, we see this as the exception rather than the rule, as many airlines are trending toward an ongoing aircraft fleet renewal strategy, rolling their fleet over through SLBs that provide fleet flexibility and an exit mechanism, which creates the opportunity to get into the latest aircraft technology as it becomes available. In these cases, to minimise capital investment and maximise fleet flexibility we recommend a combination of SLBs, long-term leases, and short-term leases to cover surges in engine shop visits and unplanned engine removals."

Airlines face considerable cost pressures and extremely tight margins. Financing solutions are imperative in order to maintain a healthy stock of spare engines. Kurre from Lufthansa Technik speaks of some interesting sales and lease back options available in the market. He says owning assets becomes less attractive for airlines and other players in the market, for example MRO providers or lessors are able to provide cost efficient solutions that minimise operational risk as

well as lighten financial burden.

Mr Friis-Petersen sees engine pooling is an attractive solution for operators to have access to spare engines at a financially comfortable rate. "As part of its extended leasing offer, MTU has set up a dedicated engine lease pool, to which it contributes its own spares. In addition, engine owners, either operators or suppliers, provide surplus spare engines. These engines are then made available to other pool members for a pre-defined monthly membership fee. Pool members thus have access to spare engines that cover their needs for the required duration, including scheduled and unscheduled events. MTU acts as the pool manager and coordinates all transactions among members."

**"Again, in combination with a fleet retirement plan and MRO, airlines are able to get great deals in the market."**

Tobias Kurre, head of engine lease at Lufthansa Technik

"It's interesting because airline profitability is at an all-time high, which gives most airlines the full range of options to acquire spare engines, ranging from outright purchase, bank financing, finance leases, and SLBs," observes Welsh from Willis Lease. But even for the airlines with the strongest cash position, Welsh does not believe owning a large portion of its spare engines as the best use of an airlines' capital, especially in light of the back end residual risk. "Partnering with or sourcing through a full service independent engine lessor is smart because it's also not all about price," Welsh indicates.



Friis-Petersen from MTU says he sees a great demand for short-term lease engines.

Some challenges clearly exist with the supply and availability of spare engines. Welsh says it's difficult to comment in general on the supply and availability of spare engines without getting in to specific engine types and vintages. "Broadly speaking there are a lot more players in the engine leasing space, so that naturally drives the supply and availability side of the equation in particular for the CFM56 and V2500 engine types used on the most popular single-aisle aircraft types, the 737NGs and A320neos. Also driving supply are aircraft part-outs, which is forecasted to increase in the coming years as the number of aircraft retiring is set to hit record numbers over the next decade. As green-time engines from these aircraft hit the market it can temporarily produce irrational pricing pressure," Welsh analyses.

Mr Topham from Werner Aero observes that there are some engine types that are not well provisioned in the market place, either because of cost prohibition or other factors such as the timing of the programme. "In most mature engine markets there is an active aftermarket, sometimes provided from early retirements and is subject to the standard over and under supply conditions. Unfortunately there are also some markets that are totally controlled by the OEM and the possibility for an operator to find cost savings from the market are limited," Topham continues.

Ultimately, supply and demand is, and will remain a key determining factor for lease rates, especially for short term leasing according to Kurre. "For engine types that are getting closer to their end of lifecycle, leasing options are one element to check before making any decision. Again, in combination with a fleet retirement plan and MRO, airlines are able to get great deals in the market," according to Kurre.

Overall, Kurre recommends that engine operators protect themselves from being exposed to potential shortages in the market. "Consider availability now and in the long run as well as consequences for your airline operation. Therefore, participating in an engine pool can offer some risk mitigation," Kurre advises.

Looking more into the future one of the main challenges is the engine OEMs' aftermarket strategy to increase the capture rate of engine maintenance under long-term agreements at point of sale. Welsh says many of these agreements source spare engines, or top up coverage, potentially eliminating any opportunity for independent lessors. In a similar fashion, some of the smaller operators prefer to negotiate lease engine support through their MRO providers, many of which have their own engine leasing capability or divisions designed for this very purpose.

A more efficient utilisation of spare engines will be a key competition parameter. Airlines used to have about 15% of spare engines of their installed engines. This figure is now down to 10% and, according to MTU estimations, will further decrease to about 7 or 8%. The demand for



Tobias Kurre, Head of Engine Lease at Lufthansa Technik

short-term spares will therefore continue as airlines still require spare engines, although time will tell how the OEMs will react to closing the gap especially on the future engine types. However, opportunities should still remain for third party providers.



Financing solutions are critical in order to maintain a healthy stock of spare engines.

Photo: Airbus



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AMI's aeronautical engineering consultants provide timely, cost-saving solutions to turbine engine operators worldwide. AMI has been an industry leader since it was founded in 1999 for its vigilance and professionalism regarding the oversight of its clientele's most important asset, the Turbine Engines.

AMI's professional services encompass numerous OEM engine types, including the "GE" CF6, CF34, CFM56, "RR" RB211, "P&W" PW100, PW2000, PW4000, "IAE" V2500 series engines, and various APU's,



Full technical and financial engine management

Photo: AMI

with staff and offices in the UK, Ireland, Asia, and the US.

AMI's mission is to deliver a full technical and financial engine management services solution to airlines, leasing companies, insurance/legal/banking firms, and aircraft engine operators around the globe. The company provides each customer with a vigorous, comprehensive, and tailor-made solution enabling them to realise significant cost savings while operating their fleets optimally.

AMI is uniquely positioned within the engine repair and overhaul industry, due to its team of professionals who have served, and

owned, many of the leading companies and MRO's for decades. The company's management team averages 30+ years industry experience.

AMI is linked to sister-firm Taking Aviation Forward (TAF) an investment, acquisition, sales, and management group focused in the aviation world of business. TAF's seasoned team of associates who work within the group are widely known throughout the world for their impeccable professionalism, vigilant oversight, industry knowledge, and keen foresight of what is to come ahead and how best to protect clients valuable assets and business practice.



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# In the hot seat.....

**Keith Mwanalushi** speaks to **Joseph W. O'Brien**, Executive Vice President - Sales Engine Lease Finance Corporation (ELFC)

**AviTrader MRO:** What attracted you to this business?

**O'Brien:** After working for a general equipment leasing company that touched the commercial and business aviation markets with some investment for fifteen years, I decided it was the most interesting and exciting industry and decided from 1996 to focus on that area only. It is a dynamic, global industry that provides opportunity and challenge every day.

**AviTrader MRO:** What does a typical day's work entail in your job?

**O'Brien:** As EVP Sales I need to talk to all regions of the globe every day and therefore start my typical day around 5 AM EST. Being based in Boston that allows me to talk to Asia at the end of the day and help prepare the staff there prepare for what is needed for the start of their day tomorrow. I can then work with Europe and our Irish headquarters staff on a time schedule very close to their normal day which allows for efficient management of the needs for Asia, Europe and the Americas just now waking up. At mid-morning I typically turn my attention to our customers in the US and Central and South America.

**AviTrader MRO:** What is the most challenging part of your job?

**O'Brien:** Managing effective communication across multiple cultures every day.

**AviTrader MRO:** ELFC has been acquired by Mitsubishi UFJ Lease and Finance Co., Ltd. ("MUL"). What benefits are you seeing from this move?

**O'Brien:** The biggest benefit is the focus at MUL is on asset investment rather than credit risk. Under the Bank of Tokyo Mitsubishi UFJ Ltd. ELF was given great support over 18 years of ownership. However, as a bank entity, future growth was limited due to country and single lessee exposures focused on credit policies. With MUL we are able to continue to grow and expand our relationships with new and old customers based on asset value and management of those country and lessee exposures within an asset focused risk management rather than a credit policy focus.

**AviTrader MRO:** Industry observers agree that the traditional engine leasing business model needs to move forward. Do you see signs of the sector evolving?

**O'Brien:** I believe the "traditional leasing" model is in a state of perpetual change and adaptation. We in this industry tend to have short memories. In our particular niche of engine leasing we find, for instance, six or seven new competitors in just the past five years that did not exist. That group of entries is also focused on short term leasing, an area, where we had little experience just those same five years ago. We have adjusted, shifted resource and focused the appropriate level of asset

availability on the short term market as an area that will now be a permanent part of our business model.

**AviTrader MRO:** With OEMs heavily involved in the engine aftermarket, what can independent players like ELFC do to compete and grow?

**O'Brien:** Focus on customers first, offering an alternative to the OEMs. All of the OEMs sell attractive maintenance and engine management options to the worlds' airlines. However, the airlines know they need to have alternatives in order to be able to keep those same packages competitive and cost efficient. Understanding customer's costs and priorities allows ELFC to offer an alternative that remains valuable to any airline that understands and needs diversity in their fleet planning. The second priority is to work with the OEMs, as we always have, helping them deliver engines and funding to their customers.

**AviTrader MRO:** What's next in the pipeline at ELFC?

**O'Brien:** Continued, measured growth.



Joseph W. O'Brien



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# Globalisation 2.0: Is cheap energy the new cheap labour?

Analysis by Jonathan M. Berger, *Vice President – Aerospace & MRO – ICF International.*

“Drill, baby, drill!” At a time when U.S. gasoline prices topped \$4 per gallon and the American electorate was facing the biggest financial crisis since the Great Depression, that spirited slogan chanted during the 2008 Republican National Convention was aimed at creating a wedge issue during the presidential campaign; more domestic drilling and less regulation would reduce dependence on foreign oil and boost the economy.



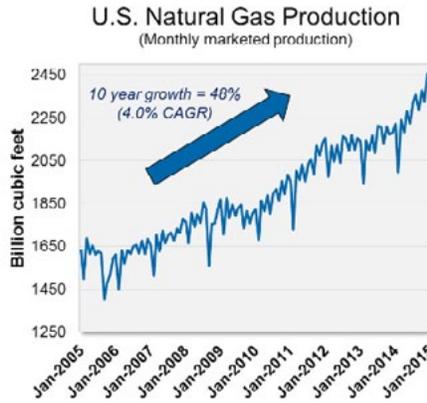
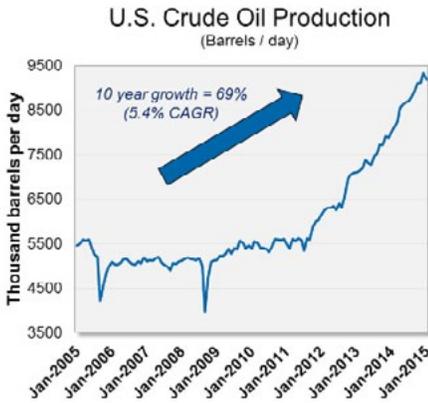
Berger - Perhaps cheap energy is indeed the new cheap labour.

Fast forward seven short years, and the changes in U.S. energy production have been nothing short of revolutionary. As the Energy Information Administration (EIA) recently noted, U.S. oil production increased at its fastest pace in more than 100 years in 2014, and is pumping more 9 million barrels per day. The U.S recently surpassed Russia as the world’s largest natural gas producer,

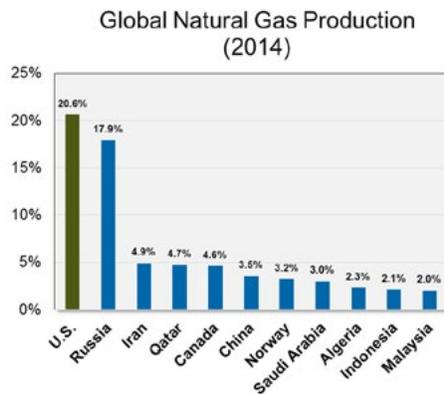
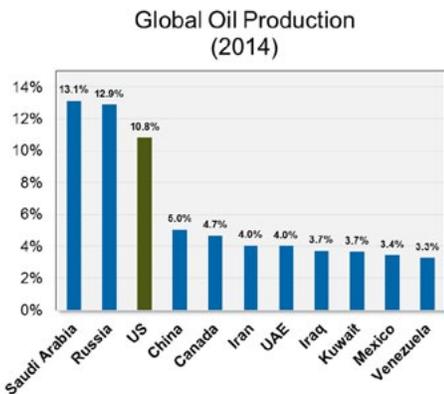
accounting for roughly one-fifth of global production in 2014.

So what caused this American energy revolution? The magic elixir was twofold: first and most importantly, the development of breakthrough technologies such as horizontal drilling and hydraulic fracturing (aka fracking); second, good old American entrepreneurship, risk-taking, and private sector capital deployment. While I’m sure the Obama administration would like to take credit, all they had to do was get out of the way – and they were more than happy to oblige.

The global financial and geopolitical ramifications of America’s energy revolution cannot be overstated. In fact, one can argue that we are now entering an entirely new economic cycle. Whereas Globalisation 1.0 can be characterised as labour cost arbitrage that induced many industries to shift both manufacturing and aftermarket services to low-cost labour regions, Globalisation 2.0 could bring tectonic shifts in where companies choose to locate. This time, however, energy cost arbitrage will be the primary driver. While the U.S. isn’t immune to an oil shock courtesy of continued unrest in the Middle East, the U.S. is far better prepared for the effects of a disruption than at any other time in the past few decades.



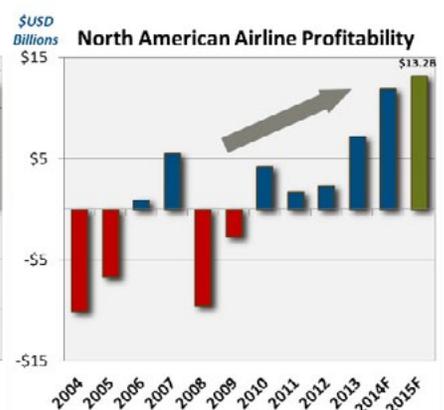
Source: EIA



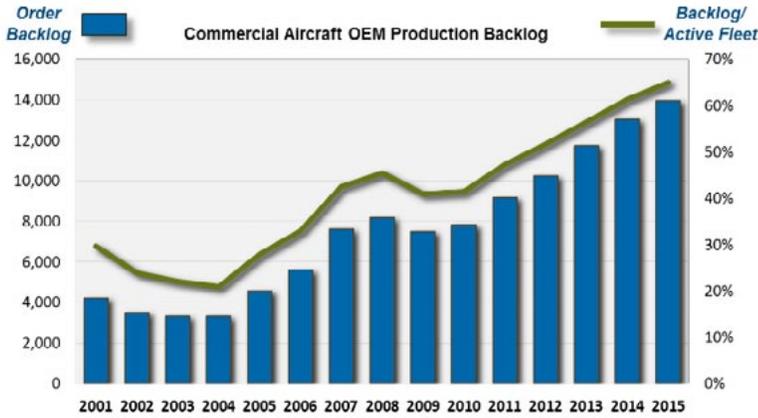
Source: BP Energy Outlook 2014

What are the consequences of this new economical world order? For starters, we already see energy-intensive businesses such as aviation, petro-chemical, aluminum, and steel are reaping the benefits. The fuel bill for an airline is typically in the range of 30%-40% of total costs. Not surprisingly, with jet fuel prices down over 40% in 2015, North American airlines are reporting record quarterly earnings.

And it’s not only aircraft operators that are experiencing record profits. Thanks to low-interest rates and the staggering demand growth for air travel in the emerging markets, aircraft OEM order books are at all-time highs. This bodes well not only for the large airframe manufacturers, but also for the plethora of tier 1 and 2 aerospace structure, engine, systems, and component suppliers.



Source: IATA Central Forecast Dec 2014



Note: includes narrowbody, widebody, and regional jets in commercial service. Excludes Russian-manufactured aircraft. Only includes passenger, freighter, and cargo aircraft operational orders. Source: FlightGlobal ACAS, April 2015

As for geopolitics, those nations whose economies are dependent on high energy prices will suffer most. Should oil and gas prices remain depressed, expect to see further strife in countries such as Russia and Venezuela. On a positive note, cheap energy has provided the U.S. with the additional leverage required to forge a framework agreement to limit potential nuclear capabilities in Iran and has laid the groundwork for improved relations with Cuba now that Venezuela can no longer afford to subsidise the Castro regime.

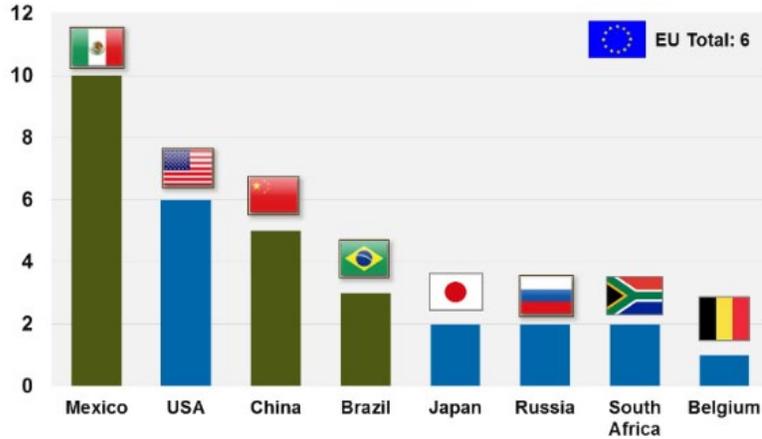
**Globalisation 1.0**

For the past two decades, the driving force behind globalisation was the gap in the price of labour between the developed world and the emerging markets. Further enabling this labour cost arbitrage were several significant events: the end of the Cold War, emergence of the internet, proliferation of free trade agreements such as NAFTA, advanced global communication systems, and China’s economic boom.

The outcome of Globalisation 1.0 was the strategic dismantling of traditional supply chain structures for many large corporations. Labour intensive jobs were outsourced to the lowest cost provider. As Globalisation 1.0 played out over the past two decades, specific aviation and aerospace industry clusters developed. For example, India specialised in software testing and development, Russia in design engineering, Mexico in manufacturing, and China created its own aircraft OEM (COMAC) to compete with the mighty Boeing and Airbus duopoly.

For the last 15 years, my consulting firm, ICF International, has been closely monitoring aerospace industry investments. Clearly, if one follows the money trail, Globalisation 1.0 was a boon for emerging market economies.

**Major Aerospace Manufacturing Investments\* 2000 – 2003**



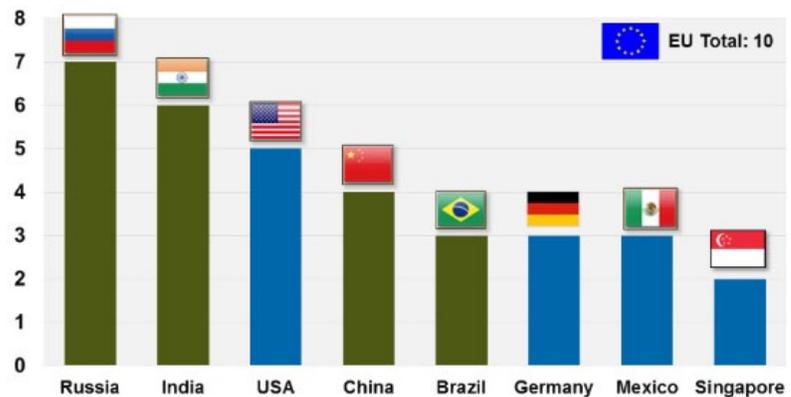
Source: ICF International

\* Includes joint ventures and organic investments for over 180 OEMs and service providers; excludes acquisitions

**Globalisation 2.0**

However, over time, emerging markets, will... emerge. The comparative labour advantage leveraged so effectively by the “BRIC” nations (i.e. Brazil, Russia, India, and China) has been slowly eroding. Between 2006 and 2011, Asian wages rose 5.7% per year, compared with 0.4% in the developed economies. Moreover, commercial aircraft maintenance labour rates in the U.S. and Asia continue to converge. Compounding this impact, productivity continues to grow rapidly in the developed world as companies deploy new technologies in automation, robotics, and additive manufacturing. This loss of competitive advantage has significantly changed the calculus for how and where capital is being deployed. In fact, the U.S. now enjoys a significant energy cost advantage over its two historic manufacturing competitors – Germany and Japan.

**Major Aerospace Engineering Investments\* 2004 - 2007**



Source: ICF International  
BRIC = Brazil, Russia, India, China

\* Includes joint ventures and organic investments for over 180 OEMs and service providers; excludes acquisitions

Historically, U.S. natural gas prices have tended to be lower than Germany's and Japan's, but the differential has exploded in favour of the U.S. over the past few years – over 40% less than Germany and one-fourth of Japan's.

Not surprisingly, investments for energy-intensive products have begun to migrate to the U.S. For example, BASF, the German chemicals company, is said to be allocating a quarter of its \$25 billion dollar investment budget over five years to the U.S. and has announced plans to build a \$1.68 billion dollar propylene site on the Gulf Coast. Natural gas will provide not only the energy, but also the chemical raw materials. In addition, the Austrian steel company Voestalpine is building a \$600 million facility in Texas. It will use natural gas to power its huge furnaces. And late last year, the aerospace aluminum giant Alcoa opened the world's largest aluminum-lithium plant in Lafayette, Indiana.

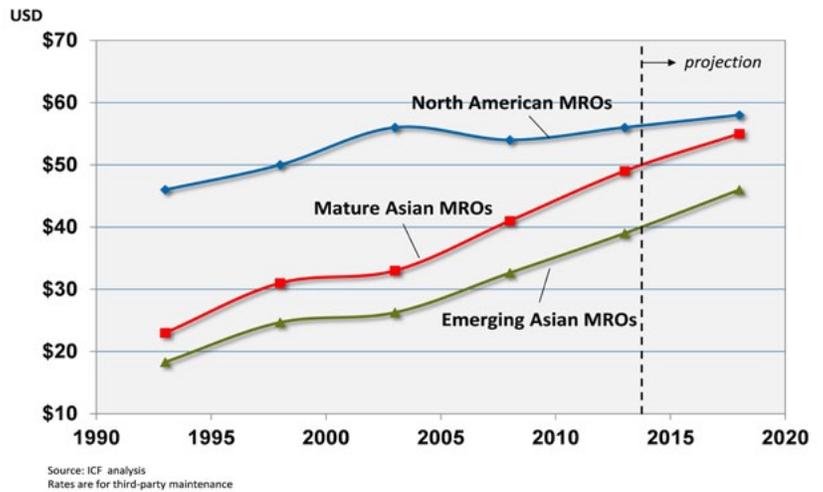
Consequently, the Southeastern U.S. has emerged as a magnet for aviation-related investments with the big three aircraft manufacturers opening new major final assembly facilities in Charleston (Boeing), Mobile (Airbus) and Florida (Embraer). As ICF International research indicates, the U.S. is clearly the current location of choice for aviation and aerospace capital deployment.

As with Globalisation 1.0, there are of course numerous other factors at play helping to fuel Globalisation 2.0 other than low energy costs, including state and local tax incentives and Right-to-Work laws that limit/prohibit union security agreements.

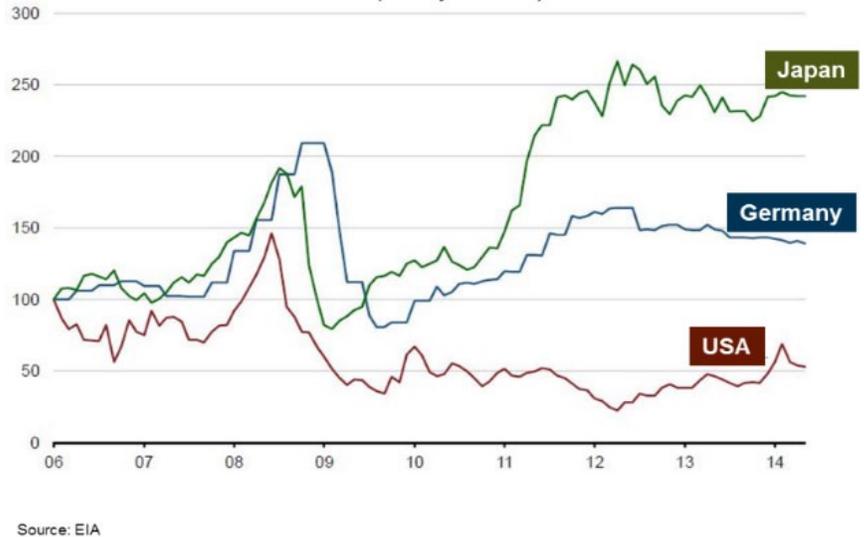
No one knows for sure how long energy costs will remain low. Given the recent constitutional amendment in Mexico to allow foreign investment in its painfully inefficient energy sector, as well as the possible lifting of sanctions in Iran, the potential for further over-supply of oil and gas is real. This portends very well for the commercial aviation sector whose business plans assume oil prices at approximately \$100 per barrel. And for any energy-intensive business looking for the ideal location to set up shop, the U.S.

is well positioned to be the primary beneficiary of Globalisation 2.0. Perhaps cheap energy is indeed the new cheap labour.

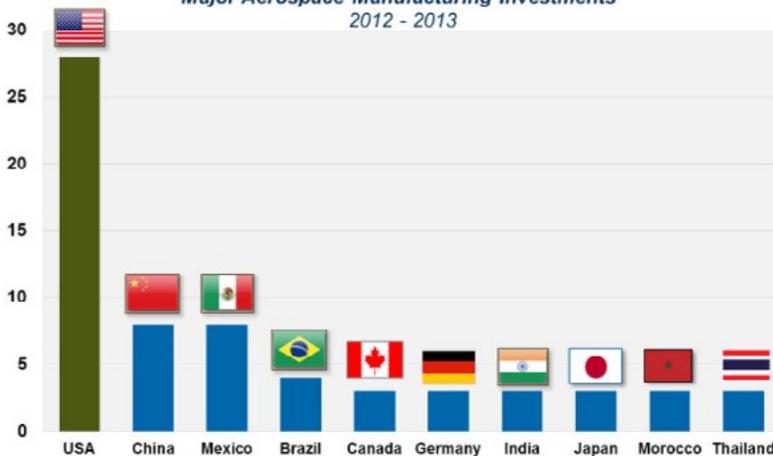
Average Widebody Airframe Heavy Maintenance Hourly Labor Rates



Natural Gas Price Index (January 2006 = 100)



Major Aerospace Manufacturing Investments\* 2012 - 2013



\* Includes joint ventures and organic investments for over 180 OEMs and service providers; excludes acquisitions

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**FLYHT Aerospace Solutions** has signed a contract for the Automated Flight Information Reporting System (AFIRS) 228 on a fleet of four A320 aircraft. The African-based airline is keen to use FLYHT's suite of tools including automated Out, Off, On and In times, FLYHT's new web-based flight following Aircraft Situational Display ("ASD"), engine and airframe exceedance reports, real-time flight data monitoring, quick access recorder flight data, global voice communications enabled by the Iridium satellite network and added AFIRS features on demand. FLYHT will provide equipment and services to the airline over a five-year contract with automatic yearly renewals after the initial term. FLYHT already has the required supplemental type certificates ("STCs") to install on the A320 aircraft. Installations are anticipated to begin mid-June 2015. If FLYHT completes installation on all four contracted aircraft and provides recurring revenue services for the full term of the agreement, gross revenue to FLYHT will be approximately US\$710,000, excluding optional services.

**Rockwell Collins** has been selected by Airbus to provide the Electronic Flight Bag (EFB) interface and communication unit (EICU) for Airbus A320 and A330 aircraft families. The optional system for airlines, exclusively provided by Rockwell Collins, will be available and certified next year. The EICU, a lightweight, compact unit that is part of Rockwell Collins' Secure Server Router product portfolio, leverages proven technology from the onboard information management system that the company already supplies for other Airbus aircraft types. It securely connects to portable and factory-installed EFBs in the cockpit via wireless or wired connections. The system's embedded router enables the EFB to interconnect with select onboard and external networks, including the avionics, maintenance information, airline operating centers, connecting gates and the cabin.

**China Southern Airlines**, Asia's largest airline, is to be the launch customer for **Panasonic Avionics'** eXO system, a sophisticated overhead in-flight entertainment system. The eXO system is designed with single aisle aircraft in mind and China Southern has chosen it for its new narrow-bodied fleet of Airbus A320s and A321s being delivered from early in

2016. The new fleet being equipped will initially consist of 54 aircraft, with an option of a further 50 as the airline expands. For the new China Southern fleet, the innovative eXO system will deliver overhead retract screens in Full 1080p High Definition (HD), clear digital audio, and in-seat high power USB charging for tablets and smart phones. The superior Full HD resolution of eXO provides passengers with the same high quality video in the air that they enjoy every day in their home.

**Commsoft**, a leader in aviation engineering and maintenance systems, reported that existing Commsoft customer, **AvioCATS**, will be using OASES to provide CAMO services for Croatian start up airline **Limitless Airways'** newly acquired fleet of an Airbus A320, supporting their charter operation connecting Scandinavia with the Mediterranean. Headquartered in Zagreb, Avio Grupa D.O.O. (AvioCATS) will provide Start-up support, AOC, Technical management and CAMO/engineering to new start up airline Limitless Airways who are owned by **Scandjet**, the well-established Swedish tour operator. Further fleet expansion is expected. EASA Part M-approved for Airbus A320, AvioCATS has been using OASES since 2013. Commsoft's flagship product, OASES is a 'best-of-breed' MRO IT system offering an industry-leading technical sophistication whilst being intuitively user-friendly.

**Bombardier** has teamed up with **Pratt & Whitney** to develop and implement a data management service for the CSeries aircraft – part of the overall Bombardier Aircraft Health Management System (AHMS) capable of transmitting real-time and recorded data from the aircraft. The AHMS will facilitate remote troubleshooting and deliver efficient and accurate diagnostics for use by maintenance and flight crews. Under this agreement, Pratt & Whitney's eFAST system will be the infrastructure unit used to perform data transmissions from the CSeries aircraft's on-board Health Management Unit (HMU) to the ground. Along with Bombardier, they will make up the data acquisition structure which will automatically download, process and store data that will be available for upload to respective customer portals. Pratt & Whitney is also the supplier for the CSeries aircraft's PurePower Geared Turbofan engines.

## People On The Move



John Rishton

Rolls-Royce released that **John Rishton** has decided to retire as Chief Executive on July 2nd, 2015. He will be succeeded by **Warren East**, whose appointment follows an extensive international search. Warren East was CEO of ARM Holdings from 2001 to 2013. Under his leadership ARM became one of the world's leading developers of semi-conductors with an outstanding record of innovation and a strong commitment to R&D. Warren has been a Non-Executive Director of Rolls-Royce since January 2014.

ATR named **Tom Anderson** as new Senior Vice



Tom Anderson

President, Commercial and Customer Support. In his new role, Tom will be responsible for developing global growth strategies in ATR's market segments, thus strengthening the company's position as the leading regional aircraft manufacturer. He will also supervise ATR's aftermarket strategies and focus on innovative customer-oriented products and services.

Aircelle (Safran) announces four appointments to its leadership team: **Pierre Jorant** has been named Vice President of Programs, **Gilles Poilvet** has been named Vice President of Administration and Finance, **Francis Gauvain** has been named

Vice President of Human Resources and facilities and **Philippe James** has been named Continuous Improvement Vice President of Aircelle.

Lockheed Martin selected **Bill Brotherton** as president and general manager of Lockheed Martin Commercial Engine Solutions that includes its San Antonio, Texas and Montreal, Canada facilities. Brotherton will be responsible for leading military and commercial engine maintenance, repair, and overhaul (MRO) services for 10 engine lines and new engine production assembly and test operations.



Bill Brotherton