AviTrader

MRO

January 2015 - www.avitrader.com

DEALING WITH AGEING PLANES

Company Profile
AAR Corp

MRO News
from around the world

People on the Move
latest appointments

ICF Analysis

Age is nothing but a number?

The effect of aircraft ageing on maintenance and related operating costs is always an interesting topic - and a complex one. Many aircraft accidents around the world have been linked to ageing aircraft.

The structural integrity of aircraft is of concern because such factors as fatigue cracking and corrosion are time and usage dependent, and our knowledge about them can best be assessed based on real-time operational experience and the use of the most modern tools of analysis and testing. In this edition we look at how MRO organisations, particularly Lufthansa Technik and technology developers are dealing with these issues.

This month, we are also introducing our new editorial partner, ICF International. ICF provides objective, independent regulatory, technical, financial, and commercial guidance to the global aviation industry and we are pleased to welcome them on board. For the January edition, ICF dissects the surplus parts market considering that alternatives to new OEM parts are a big deal.

Happy reading!

Keith Mwanalushi
Editor

Older B767s more than compensate for the relative efficiency shortfall when compared with newer types.
Photo: Boeing Shanghai (Fiona Xia)

Contents

AVITRADER MRO

Published monthly by

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Registration

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Magnetic MRO hangar in Tallinn, Estonia *Photo: Magnetic MRO*

Magnetic MRO launches full aircraft painting services in May 2015

Magnetic MRO announced the start of its final preparations to offer full aircraft Painting Services in Tallinn, Estonia by May this year. "Painting services capability has been an eagerly anticipated service by our Customers", says Andrius Norkevičius, COO of Engineering Services, Magnetic MRO. "We now have strong partners from UK, Spraybooth Technology Ltd (STL) and Paint Services Group Ltd (PSG), guaranteeing rapid project deployment and confidence to perform our first full painting project in May 2015. Magnetic MRO´s focus is to provide the highest quality repainting services to our customers, offering painting materials and technology of different producers and solution providers. Non-chrome and chrome systems will both be available to match the needs and requirements of either 30 year-old aircraft or those of the latest generation." Whether stripping or sanding the old paint or applying the finish coatings, with strict environmental requirements in mind, Magnetic MRO will ensure the painting services comply with the requirements of ISO 14001 and all the relevant environmental legislations, including Environmental Protection Act 1995 and Pollution Prevention and Control Act 1999.

Based on Magnetic MRO´s extensive maintenance experience of older type aircraft, exterior preparation and stripping to bare metal or heavy sanding, corrosion removal and treatment, as well as resealing of all production joints, painting projects will be performed to the highest standards to ensure long and durable finish will remain intact for years of aircraft operations. Comprehensive additional on-site services in Tallinn, Estonia, include pre-flight and bare metal skin inspection, rudder rebalance, aircraft weight and balance updates, line maintenance daily checks assistance or aircraft storage and release to service certification.

Precision Aircraft Solutions receives winglet 757 MZFW upgrade approval

Precision Aircraft Solutions has received FAA approval for a new Maximum Zero Fuel Weight (MZFW) increase on both winglet- and non-winglet-equipped Precision Conversions freighters. The most recent upgrade authorization allows Precision to further increase MZFW as high as 200,000 lbs. (90,718 kg) — 12,000 lbs. (5,443 kg) over the OEM highest certificated MZFW for Rolls-Royce- and Pratt & Whitney-powered 757s. This translates to gross structural payloads of up to 84,000 lbs. (38,101 kg) for Rolls-Royce PCF variants and 82,000 lbs. (37,194 kg) for Pratt-powered PCF variants, line number 210+. The weight upgrade greatly expands available feedstock for operators and improves residual value for owners.

Safran bolsters production capacity in Poland

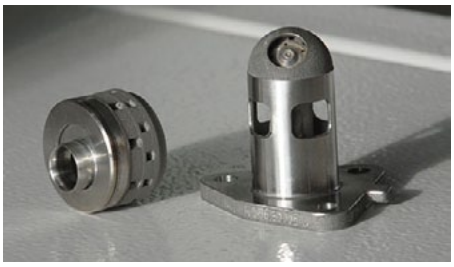
Safran announced today that one of its companies, Hispano-Suiza, is building a new plant in Poland with the support of Polish authorities, to meet the requirements of two other Safran companies, Snecma and Techspace Aero, for the LEAP and Silvercrest engine programs, respectively. Set to be completed at the end of 2016, the new production plant will be located near the Hispano-Suiza Polska plant in "Aviation Valley", a major aviation manufacturing hub in southeast Poland. The plant will cover about 8,000 square meters (86,400 sq ft) and generate over 100 jobs. The new plant will include two production lines: one for Snecma, making low-pressure turbine blades, and the other for Techspace Aero, making low-pressure compressor spools. Safran has operated in Poland since 2001 via Hispano-Suiza, the world's leading maker of power transmissions for civil and military fixed and rotary-wing aircraft. The company's local subsidiary, Hispano-Suiza Polska, has over 500 employees at its Sedziszow plant. Safran has a broad customer base in the country, including not only aerospace, but also the defense and security stries, and also calls on more than 30 Polish suppliers. Through these new production lines, Safran will be able to support its customers' growth driven by new-generation aircraft: the Airbus A320neo, Boeing 737 MAX and Comac C919 commercial jetliners, powered by the LEAP engine, and the Cessna Citation Longitude and Dassault Aviation Falcon 5X business jets, powered by the Silvercrest.

Rolls-Royce commits to Derby as production hub for the Trent XWB

Rolls-Royce announced that Derby will be the production centre for the Trent XWB. The Trent XWB is the most efficient large aero engine with more than 1,500 engines sold to 40 customers to date. It is the sole power plant available for the Airbus A350 XWB. Rolls-Royce has invested around £30m expanding its Derby Assembly & Test Facility and installing new equipment, in order to meet customer demand for the engine. Over the next three to four years, Trent XWB production will grow to over 300 engines a year – the equivalent of one every working day – and will stay at that level for several years. The majority of these engines will be built in Derby. The engine is expected to be in service for many years, creating an annuity of aftermarket services that will generate revenues for decades to come. Almost ten years ago, Rolls-Royce made its commitment to Airbus that it would develop a new engine for its latest wide-body aircraft. Work on the engine began in 2006 and it is ready to power the first A350 XWB aircraft to be delivered to launch customer Qatar Airways later this month.

China Airlines selects HAECO ITM for Boeing 777-300ER fleet

China Airlines ("CAL") and HAECO ITM Limited ("HAECO ITM") have entered into an agreement for a long-term rotables management programme on the airline's Boeing 777-300ER fleet, covering a range of line-replaceable units (LRUs) and simulator parts. CAL took delivery of its first Boeing 777-300ER in late September and will add another nine of these aircraft to its fleet by mid-2016. Under the agreement, HAECO ITM will support CAL with comprehensive component solutions that include repair management, provision of onsite consignment stock in Taipei, as well as access to HAECO ITM's extensive inventory pool in Hong Kong.



Turbomeca introduces additive manufacturing capability for engine components *Photo: Rémy Bertrand*

Turbomeca introduces additive manufacturing capability for engine components

Helicopter engine manufacturer Turbomeca (Safran) is setting up new manufacturing capability at its facility in Bordes (France). After years of maturation and prototype testing, Turbomeca has entered serial production of parts using the latest additive manufacturing, or 3D printing process. Bordes facility is one of the first of its kind to serial produce additive components for aerospace propulsion industry in France. Arrano test and production engines will feature fuel injector nozzles made using Selective Laser Melting (SLM) techniques. This leading-edge manufacturing process will also be used to manufacture Ardiden 3 combustor swirlers. These engines are Turbomeca's latest models and amongst the most advanced turboshafts ever designed. Additive manufacturing produces parts to a three-dimensional CAD (computer-aided design) model. Unlike traditional manufacturing processes (forging and machining) which are based on material removal, additive manufacturing builds layers, each between 20 and 100-micrometers thick, of fine metal powder to produce complex-shape parts. In the case of SLM, a computer-controlled laser shoots pinpoint beams onto a bed of nickel-based super-alloy powder, to melt the metal in the desired areas. Additive Manufacturing also simplifies the manufacturing process. A traditional fuel-injector nozzle is made up from dozens different pieces. Arrano component is made from one single piece of material and features advanced injection and cooling functions. One SLM machine is already in service, and qualified for mass production, with others to be integrated over the coming years.

Borajet Airlines signs GE OnPoint Solution and TRUEngine agreements for CF34 Engines

Borajet Airlines signed a five-year OnPoint solution agreement for the maintenance, repair and overhaul of the airline's CF34-10E engines that power its five EMBRAER E190 aircraft. The agreement is valued at about more than US$30m over the life of the agreement. Along with the OnPoint solution agreement, GE awarded Borajet Airlines its TRUEngine designation for its CF34-10E engine fleet. "Borajet Airlines was the first to operate CF34-10E-powered EMBRAER E190 aircraft in Turkey, so it is fitting the airline is the first CF34-10E OnPoint solution agreement customer and the first airline in Turkey to be awarded TRUEngine status for its CF34-10E fleet," said Kevin McAllister, president and CEO of GE Aviation's Services organization.

Boeing selects GKN Aerospace to assemble 737 MAX winglets in Washington State

Boeing has awarded GKN Aerospace a contract for final assembly and paint of Advanced Technology (AT) Winglets for the new 737 MAX. This adds to GKN Aerospace's existing work package with Boeing and brings additional jobs to Washington State. The final assembly and paint work will be carried out at a 57,000 ft² facility that GKN Aerospace will operate in Sumner, Wash., near Boeing's 737 MAX Final Assembly in Renton, Wash. The facility will open in late 2015 and employ approximately 75 people when full rate production is achieved. Staff recruitment will begin early in 2015 with the majority of the new team being drawn from the highly skilled workforce based in the state.

Aeroflot and Lufthansa Technik extend cooperation

Aeroflot Russian Airlines and Lufthansa Technik AG concluded a long-term agreement for the provision of maintenance and repair services (MRS) of aircraft components to the Russian aviation company on improved conditions. Lufthansa Technik became the winner of the tender for selecting a MRS supplier for aircraft components to all companies of Aeroflot Group. The new ten-year-long agreement will be valid from January 2015. It supersedes the contract that currently exists between the two companies. Due to effective management of material assets, unique quality and constant innovation of repair work, as well as individual approach to the service of customers based on the volume of work, Lufthansa Technik was able to offer the Russian partner the most beneficial conditions of cooperation. According to specialists' estimates it will allow Aeroflot Group to save significant financial investment within the duration of the agreement due to cost reduction. The new agreement also includes clauses on the liability of the supplier for the quality and promptness of work.

New landing gear cooperation between Lufthansa Technik and SPPCA

SPP Canada Aircraft (SPPCA), a global provider of landing gear systems for commercial aircraft, has formed a business alliance for Product Support Services with Lufthansa Technik AG and Hawker Pacific Aerospace. Lufthansa Technik and its subsidiary Hawker Pacific Aerospace are two of the world's leading providers of landing gear maintenance and technical support services. All three parties have consolidated their partnership in a General Terms Agreement, after signing a Memorandum of Understanding in 2013. The agreement will allow customers to benefit from SPPCA's design and manufacturing know-how and Lufthansa Technik's MRO expertise as they provide aftermarket support services to SPPCA's landing gear components. "We look forward to providing excellent MRO solutions for SPPCA's landing gears and to supporting SPPCA with the quality, value and commitment to service that are critical to their success in this competitive market," says Andreas Tielmann, Vice President Aircraft Systems at Lufthansa Technik AG.

Lufthansa Technik announces closer cooperation with Rolls-Royce in engine maintenance

Rolls-Royce and Lufthansa Technik AG are to explore closer co-operation in the technical care of mature engines. It follows a year-long pilot project intended to reduce the maintenance costs of mature Trent 500 engines which power the Airbus A340-500/600 aircraft. Rolls-Royce's expertise as the engine manufacturer and Lufthansa Technik's experience as one of the world's largest engine maintenance providers were combined in a pilot project. The question the pilot project pursued was: How can Trent 500 maintenance costs be reduced through the mature phase of the life-cycle? This work plays a significant element of ensuring Rolls-Royce has the capabilities to introduce TotalCare Flex, a concept to address the service needs of customers with mature-phase engines, including the Trent 500. Joint efforts on several Trent 500 engines made it clear that tangible reductions in costs were achievable through systematic changes in workscope, improved use of used material, and optimized processes in the workshops. Encouraged by the successful pilot project and great interest on the side of customers, the two project partners have agreed to explore options for longer-term cooperation, which may expand to include other engine types.

FL Technics to provide base maintenance support for Pegasus Airlines *Photo: FL Technics*

FL Technics to provide base maintenance support for Turkish Pegasus Airlines

FL Technics, a global provider of tailor-made aircraft maintenance, repair and overhaul services, is further expanding its client base in Europe and Asia by signing a Base Maintenance agreement with Turkish low-cost carrier Pegasus Airlines. Under the agreement, FL Technics will provide Base Maintenance support for the carrier's Boeing 737 NGs. Pegasus Airlines, the second largest carrier in Turkey, has already delivered its first Boeing 737-800 aircraft to FL Technics' base maintenance facilities at Kaunas International Airport, Lithuania. The aircraft will undergo a comprehensive set of maintenance works under a 6 year C-Check program, including structure and composite repairs, NDT, technical defect rectification, etc. Additional aircraft will reach FL Technics' Kaunas MRO base in the nearest future. All maintenance works for the first group of aircraft are expected to be concluded by May 2015 in order for Pegasus Airlines to be fully prepared for the upcoming summer season.

Pratt & Whitney signs PurePower Geared Turbofan engine partnering agreement with Kawasaki Heavy Industries

Pratt & Whitney and Kawasaki Heavy Industries signed a risk and revenue-sharing collaboration agreement for KHI to provide key hardware modules for Pratt & Whitney's PurePower Geared Turbofan (GTF) engines. Pratt & Whitney currently has 10 worldwide GTF collaboration partners, many of which work across multiple GTF engine variants to be installed on various aircraft platforms for Pratt & Whitney customers. These aircraft programs are directed by Mitsubishi Aircraft Corporation, Bombardier Aerospace, Airbus, Irkut and Embraer. "Our collaboration on the GTF started in 2007 when our great partner, Mitsubishi Heavy Industries, selected the PW1200G Geared Turbofan engine for their Mitsubishi Regional Jet and soon after joined the program as a partner. Since then we have continued to seek risk-sharing relationships with GTF program participants," said Bernard I. Zimmerman, vice president, Group Strategy & Development for Pratt & Whitney. Zimmerman's team is responsible for establishing and managing these risk and revenue-sharing collaborations with various Pratt & Whitney "partners".

HAITEC VIP Maintenance receives LBA approval

HAITEC Aircraft Maintenance GmbH was recently granted its Maintenance Organization Approval from Germany's Civil Aviation Authority (Luftfahrt-Bundesamt LBA) for its VIP Maintenance Division. VIP Maintenance commenced operations on November 20th, 2014, in its 4,300 m² hangar dedicated to VIP customers at the Airport Erfurt-Weimar, welcoming the first Gulfstream G550 owned by Silk Way Airlines, based in Baku, Azerbaijan. Currently, HAITEC VIP Maintenance, an EASA-Part 145 organization, has approvals for Gulfstream G550 and the Airbus 320 family and, besides Standard Line and Base Maintenance, will concentrate on cabin refurbishment and interior design applications. "Since 2008, HAITEC has been providing Line and Base Maintenance for almost all types of Boeing and Airbus aircraft, as well as the MD-11 and Gulfstream GV-SP. We have approvals from Russia, Qatar, the United Arab Emirates (UAE), Bermuda and Azerbaijan and are in preparation for obtaining further approvals. Concurrently, our workforce planning is in full swing as we want to grow our VIP team in Erfurt to about 100 professionals by the end of 2017," says Michael Bock, CEO of HAITEC Aircraft Maintenance GmbH. The new VIP facilities in Erfurt are part of a grand investment of €30m to significantly increase HAITEC'S competitiveness and aircraft maintenance capacities over the course of the next three years.

Marshall complements engineering, MRO and cabin upgrade capabilities with creation of aircraft refinishing facility

Marshall Aerospace and Defence Group has developed a dedicated aircraft refinishing facility aircraft for Boeing 747-400, 777 and Airbus A330-sized aircraft at its site in Cambridge, United Kingdom. The new aircraft refinishing facility, which opens its doors for business in early 2015, is located within a secure hangar at the Cambridge site, making it one of the largest in Europe able to handle special projects. This, combined with access to the Marshall-owned Cambridge International Airport which has a 1,965m runway and boasts Category 7 Fire and Air Traffic Control status, makes it the ideal choice for commercial, VIP, corporate and military customers alike. Air Livery, the long-established and well-known aircraft refinishing company, will be operating the facility on behalf of Marshall, making it Air Livery's sixth paint facility in the UK. Air Livery has extensive expertise in aircraft refinishing and interior repair and refurbishment.

Rockwell Collins' to provide flight displays, integrated surveillance and select flight control systems for 777X

Rockwell Collins has been awarded a contract by Boeing to provide its next-generation, large-format flight displays, integrated surveillance system and select flight control systems as standard equipment on the Boeing 777X. This contract is in addition to Rockwell Collins' previously announced award to provide the Flight Control Module for the 777X Integrated Flight Control Electronics fly-by-wire system. Together, these awards rival the content that Rockwell Collins provides Boeing for the 787 Dreamliner and triples the amount of supplier-furnished equipment that it has on the 777X when compared to previous generations of the airplane. In addition, Rockwell Collins' Head-up Guidance System (HGS) will be available for the first time on a 777 airplane. The HGS, which is standard on the Boeing 787 Dreamliner and an airline-selectable system on the 737 MAX, projects an image onto a glass combiner mounted in front of pilots' eyes that displays essential flight information while they simultaneously look outside the flight deck, scanning for traffic or flying an approach.

HAITEC hangar in Hahn, Germany *Photo: HAITEC*

HAITEC set to continue its MRO expansion

HAITEC is well positioned in 2015 following a successful 2014. "We have reached all our objectives", confirms Frank Rott, HAITEC's newly appointed CEO replacing Michael Bock as outgoing Managing Director. "We utilized our manpower and hangar capacity in 2014 to the maximum and set the course for HAITEC's future", says Rott. HAITEC's pilot project „P2F" (A320 Passenger to Freighter Conversion) commenced in autumn 2014, which is expected to result in 12 conversions a year. "The initial planning phase for the construction of HAITEC's second, 12,000 m² hangar with A380 capacity is well under way", explains Rott. The official construction phase will commence in April 2015. HAITEC's intention is to welcome the first customer to the new hangar in summer of 2016. In addition, HAITEC will continue to welcome VIP customers to its hangar in Erfurt that recently opened in autumn 2014. From January 2015, HAITEC is in a position to offer a wider span of commercial and VIP MRO services to its existing and new customers at various locations in Germany. HAITEC's focus is on narrow and wide-body Boeing and Airbus aircraft types.

MTU Maintenance signs exclusive total engine care contract with Air Costa

MTU Maintenance, one of the leading engine maintenance providers worldwide, has added another airline to its continuously growing customer list: Air Costa, India's newest airline has chosen MTU for the exclusive maintenance of its CF34-8/-10 engines operating its Embraer E170 and E190 fleet. Apart from engine maintenance, MTU will support Air Costa with LRU management and spare engines; Air Costa is thereby benefitting from the company's Total Engine Care program (TEC). The contract will run for 10 years and has a value of €25m. Air Costa is MTU's first customer from India and the first Indian E-Jet operator. Air Costa's engines will be overhauled at MTU Maintenance Berlin Brandenburg, an Authorized CF34 Service Provider and MTU's center of excellence for industrial gas turbines. Since 2002, the company has maintained over 1,000 CF34 engines, both on- and off-wing, for over 100 customers worldwide. The shop currently has the capacity for over 200 shop visits per year.

Boeing selects GE Aviation for 777X Common Core Avionics Systems

GE Aviation has been selected by Boeing to provide the Common Core System (CCS) and the Enhanced Airborne Flight Recorder (EAFR) for the Boeing 777X aircraft, as well as the Electrical Load Management System (ELMS), the Backup Generator and the Backup Converter. Selecting the GE common core system and enhanced airborne flight recorder enables Boeing to bring the latest generation of proven capabilities from the 787 to the 777X. The 777X has 300 orders and commitments from customers Lufthansa, Etihad, Qatar, Emirates, ANA and Cathay Pacific. The latest systems technology for the 777X will touch two major GE Aviation facilities including the common core system and the enhanced airborne flight recorder from Grand Rapids, Michigan and the remote data concentrators from Cheltenham, United Kingdom.

The advanced ELMS for the Boeing 777X will utilize the Boeing 777 ELMS design elements, to reduce aircraft maintenance time and cost, improving reliability and availability of aircraft power. With the ELMS, backup generator and backup converter for the 777X, GE will utilize their Electric Power Integration Center in Cheltenham, UK and their Electrical Power Integrated Systems Center in Dayton, Ohio where they will employ state of the art dynamic software modeling, simulation and analysis to predict how the system and its individual components will perform, including full system testing within a copper-bird environment.

Boeing breaks ground in St. Louis for new composites centre

Boeing began construction here of a new 367,000-ft² facility in which it will build parts for the newest member of its 777 commercial airplanes family, the 777X. About 700 new jobs will be created for the 777X work. Construction should be complete in 2016, with work on 777X wing and empennage parts starting in 2017. The facility is an expansion of Boeing's current tooling center at the site and will contain six autoclaves. As we move forward with construction of our new center, we will significantly enhance our aerospace composite capability in St. Louis, positioning us for today's opportunities, and tomorrow's," said Bob Ciesla, vice president, Boeing Military Aircraft Cross-Enterprise Design/Build. "This is a tremendous opportunity for Boeing St. Louis and the entire region, which enables us to bridge to the future as a site with both commercial and defense capabilities." Boeing's St. Louis site, which marked its 75th anniversary this year, is renowned for military aircraft production. More than 12,000 fighter jets have been built there and the site is headquarters for the Boeing Defense, Space & Security business unit. As of Dec.1, the company had about 15,000 employees in Missouri. Earlier this year, Boeing selected its Everett, Wash. site as the location for a new composite wing center for the 777X program. In this wing center, Boeing will perform fabrication and assembly of the 777X's composite wing. Additionally, Boeing will perform final assembly of the 777X in Everett.

Boeing selects GE Aviation for 777X common core avionics systems

GE Aviation has been selected by The Boeing Company to provide the Common Core System (CCS) and the Enhanced Airborne Flight Recorder (EAFR) for the Boeing 777X aircraft. Selecting the GE common core system and enhanced airborne flight recorder enables Boeing to bring the latest generation of proven capabilities from the 787 to the 777X. The 777X has 300 orders and commitments from customers Lufthansa, Etihad, Qatar, Emirates, ANA and Cathay Pacific. The latest systems technology for the 777X will touch two major GE Aviation facilities including the common core system and the enhanced airborne flight recorder from Grand Rapids, Michigan and the remote data concentrators from Cheltenham, United Kingdom. The CCS is often referred to as the "central nervous system and brain" of the airplane and hosts the aircraft's avionics and utilities functions, eliminating several boxes and reducing hundreds of pounds of wire. GE's CCS on both the 787 and 777X share common components and technologies and can be scaled up or down depending on customer needs. The CCS open system architecture significantly reduces the cost of modifying software so that the developer may only be required to test and certify functions that have been altered.

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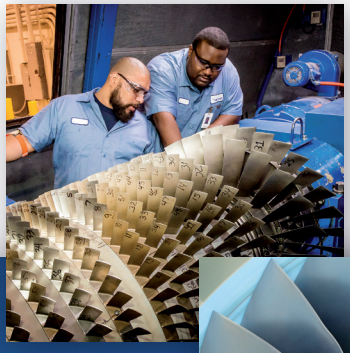

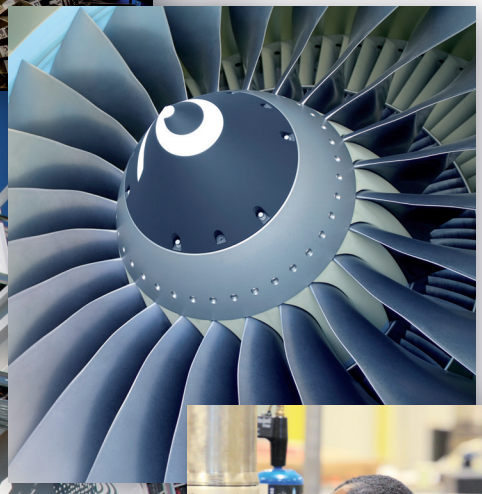

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STS Component Solutions acquires Air-Pro Hose, a subsidiary of Aero Maintenance Group

STS Component Solutions, a division of STS Aviation Group, has acquired the assets and business relationships of Air-Pro Hose, formally of AeroMaintenence Group, which is an Air France/KLM company located in Medley, Florida. The newly acquired business is legally named STS Distribution Solutions Inc. and will be operating as STS Air-Pro. Air-Pro is a leading distributor for Titeflex Aerospace and is globally recognized as a frontrunner in the manufacturing and distribution of flexible, rigid and flex-rigid hose assemblies with aircraft, turbine engine and space applications. "Air-Pro is a widely recognized global leader in the distribution and manufacture of high quality aerospace hoses. This acquisition provides us an excellent opportunity to further strengthen our current OEM Distribution Product offering while adding manufacturing capability," states Tom Covella, Group President of STS Component Solutions. "The Air-Pro name has been a well-known brand for more than 40 years and it is linked to high-end, upper-echelon hose distribution and production. I am excited to integrate and incorporate the STS business model into the organization and take this business to new heights." All key members of Air-Pro Hoses' current sales and production team will remain in place and will now be led by Luis Garcia, Site Director for STS Distribution Solutions. The Air-Pro production facility will stay at its current location in Medley, Florida, while the administration and back-office support for STS Air-Pro will be located in Palm City, Florida. The acquisition of the Air-Pro Hose business is consistent with STS Component Solutions' strategic direction toward expanding its portfolio of niche-based products and services within the aviation and aeroderivative markets.

Taking Aviation Forward acquires partnering interest in Aviation Management

Taking Aviation Forward (TAF), a company focused on commercial aviation and known for innovative management, sales, and investments out of Pembroke Pines, FL, has acquired a partnering interest in Aviation Management (AMI). Aviation Management is a full service aircraft engine solutions provider. Its powerplant engineering consultants provide timely, cost-saving solutions to turbine engine operators worldwide. Brion Patt, AMI's co-owner, all remaining staff, Aeronautical engineers, and original co-founder Paul Rehder will remain with the newly acquired entity. Terms of the transaction were not disclosed. AMI's mission is to deliver a full technical and financial engine management services solution to airlines, leasing companies, and aircraft engine operators around the globe. Its goal is to provide each customer with a vigorous, comprehensive, and tailor-made solution enabling them to realize significant cost savings while operating their fleets optimally.

Astronics to acquire Armstrong Aerospace

Astronics Corporation, a leading provider of advanced technologies for the global aerospace and defense industries, has entered into a definitive agreement to acquire Armstrong Aerospace ("Armstrong") for approximately US$51m. The agreement is expected to close in January 2015, subject to normal closing requirements. Armstrong Aerospace, located in Itasca, Illinois, is a leading provider of engineering, design and certification solutions for commercial aircraft, specializing in connectivity, in-flight entertainment, and electrical power systems. Armstrong sales for 2014 are expected to be approximately US$27m. Peter J. Gundermann, CEO of Astronics, commented, "I am pleased to include Armstrong in the expanding range of capabilities that Astronics has to offer, specifically in the connectivity and power niche for commercial airlines. Armstrong has a strong entrepreneurial spirit, advanced engineering proficiency and significant experience in providing certifications for OEMs, integrators and airlines. And, like us, they have a solid history of strong growth." With this acquisition, Astronics now expects 2015 revenue will be between US$680m to US$725m.

VSE Corporation signs agreement to acquire 4 companies held by Killick Aerospace

VSE Corporation (VSEC) has signed a definitive agreement to acquire four business units from Killick Aerospace Group, consisting of Prime Turbines (including both U.S. and Germany-based operations), CT Aerospace, Kansas Aviation and Air Parts & Supply Co. The companies to be acquired specialize in maintenance, repair and overhaul (MRO) services and parts supply for corporate and regional jet aircraft engines and engine accessories. The initial purchase price payable upon the closing is approximately US$184m in cash. The purchase agreement also includes potential post-closing payments of up to US$40m if CT Aerospace, Kansas Aviation and Air Parts & Supply Co. surpass certain thresholds of earnings before interest, taxes, depreciation and amortization ("EBITDA") during the first two years after the closing and one additional post closing payment of US$5m if such companies surpass a certain EBITDA threshold during any 12-consecutive month period in 2014 and 2015. Other purchase price adjustments also may be required based on certain post-closing determinations, including in respect of the closing net working capital and certain inventory and equipment. The four business units combined sales and income before taxes are estimated to be approximately US$111m and US$22m, respectively, for the year ending December 31st, 2014. Such estimated results are not necessarily indicative of future financial performance and the actual results of the four business units for 2014 may differ from the estimated results.The four business units have approximately 185 employees.

CarVal Investors signs agreement to acquire majority holding of AerFin Limited

CarVal Investors, a leading global alternative investment manager, signed an agreement to acquire a majority holding of AerFin Limited from its current owner, Bob James. Mr. James will remain as the Managing Director and CEO going forward and will retain 20 percent of the company. "The acquisition of AerFin is a compelling investment in itself and in addition enables CarVal to invest effectively in a dynamic and growing market in a more strategic way," said Justin Bradburn, managing director for CarVal Investors. "Bob James and the AerFin team will bring tremendous value to our ability to invest in end-of-life aircraft and engines." AerFin was formed in 2010 by Bob James who has over 34

years in the aviation industry with asset trading and technical management. AerFin specializes in providing end-of-life solutions for investors, MROs and airlines exposed to technically challenging assets. EBITDA to Sept 2014 was in excess of US$4m.

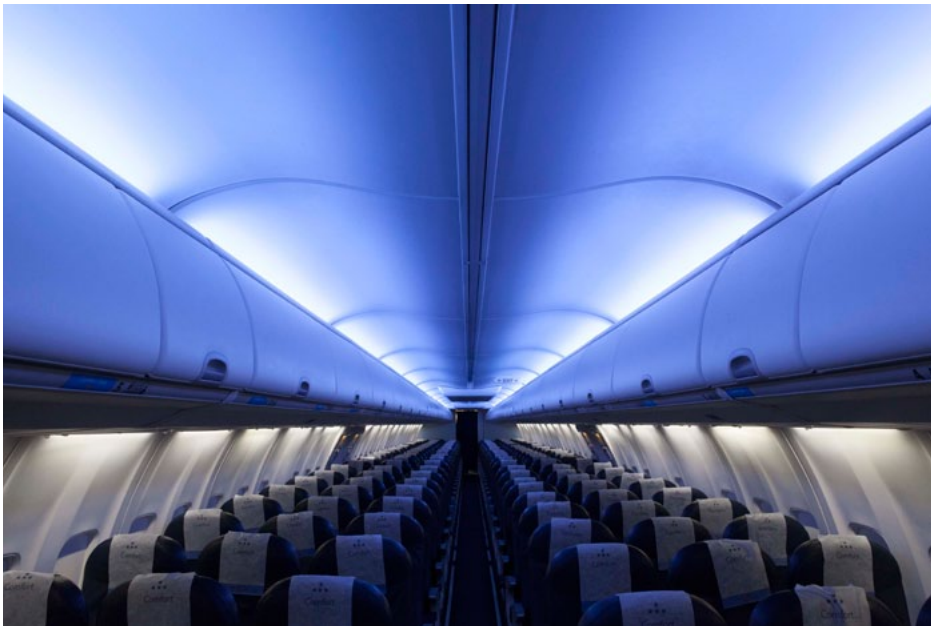
Boeing Board increases share repurchase authorization to US$12bn

The Boeing board of directors increased the company's authorization for its share repurchase plan to US$12bn and declared that the company's regular quarterly dividend will increase by 25% to 91 cents per share. "Strong operating performance across our business continues to generate significant cash flow and financial strength for Boeing," said Jim McNerney, Boeing Chairman and Chief Executive. "That strength, coupled with the solid growth outlook for commercial aviation and Boeing's unmatched product and services portfolio, provides us with the foundation to continue our balanced cash deployment strategy, investing in our core programs while increasing shareholder value." The US$12bn repurchase authorization approved today replaces the authorization approved in 2013 of which approximately $4.8B was remaining. Repurchase activity for 2014 is now complete at $6B and is expected to resume in January 2015. The timing and volume of repurchases are at the discretion of Boeing management, however it is currently expected that the share repurchases will be made over the next two to three years. Repurchases may be made on the open market or in privately negotiated transactions. Boeing's new dividend represents an 88 percent increase over the past two years.

AAR reports second quarter fiscal year 2015 results

AAR reported second quarter fiscal year 2015 consolidated sales of US$490.0m and net income of US$15.2m. For the second quarter of the prior fiscal year, the Company reported sales of US$540.7m and net income of US$20.0m. Within the Aviation Services segment, sales decreased 11.1% to US$377.7m. Supply chain sales to commercial and defense customers experienced double-digit growth but this was offset by lower sales of the Company's airlift and MRO services, although MRO facility utilization ramped up during the quarter. Comparability of financial performance for this quarter was also negatively impacted by the sale of two aircraft in the prior year period. Within the Technology Products segment, sales declined by 3.2%. Commercial and military cargo sales experienced double-digit growth offset by lower sales of mobility products.

Aircraft cabin lighting specialists, **STG Aerospace**, has been awarded a retrofit programme with the UK's largest leisure airline, **Thomson Airways**. The contract will see STG Aerospace retrofit nine of Thomson's Boeing 737NG fleet and fourteen of its 757 fleet with liTeMood, a true plug-and-play programmable blue/white LED mood lighting system designed specifically to retrofit commercial aircraft cabins. liTeMood offers airlines a cost effective, versatile and controllable solution to bring existing non LED equipped aircraft cabins up to the same quality standard as brand new aircraft helping them achieve impactful brand differentiation. Quick and easy to install, liTeMood is a cost-effective upgrade for airlines seeking to improve passenger experience and increase yields across its fleet. It features significantly increased reliability over traditional lighting systems, thereby reducing ongoing maintenance costs and also delivers important environmental benefits. Not only is liTeMood up to 40kg lighter than original-fit fluorescent lighting, it also consumes 70% less power, increasing both the aircraft's fuel and electrical efficiency.



LiTeMood *Photo: STG Aerospace*

DolphiTech announced the signing of a global distribution agreement with **Barfield**, a recognized worldwide market leader in Ground Support Test Equipment that will be distributing DolphiTech's line of new mobile, advanced 3D ultrasound cameras. "The use of composites materials is increasing on aircraft opening up the need of new advanced technologies. Barfield, with its 70 years of aviation Ground Support Test Equipment marketing reach and its strong customers' base has a significant presence worldwide and complements our strategy of distribution" said Jan Olav Endrerud, Chief Executive Officer of DolphiTech. In May 2014, the DolphiCam, DolphiTech's advanced mobile and ergonomic ultrasound camera system, has been accepted for non- destructive testing (NDT) on the Boeing 787 Dreamliner. The DolphiCam camera system is able to inspect Carbon Fiber Reinforced Plastic (CFRP) up to 16mm (0.63") thick, with very high resolution 2D and 3D images. DolphiTech is also working with Airbus on the certification of the technology for the new Airbus A350 XWB.

Lufthansa Technik, a world leader in technical services for commercial aircraft, is opening a new sales office in the Chilean capital Santiago – a step that acknowledges the growing importance of the South Latin American aviation market. Air traffic and related technical services are permanently growing in the region. "Having a population of around ten airlines within the region, the southern part of Latin America offers us great potential. We want to be a reliable partner to our customers, and geographic proximity plays an important role in that regard", explains Joerg Femerling, Sales Director at Lufthansa Technik. Carlos Sotomayor, office manager in Santiago, adds: "With the support of this new office, we want to get closer to our customers within the region and be available to them any time they need us. That's the best approach to convince potential customers of our advantages." Among others, the **Lufthansa Technik group** maintains relationships to the **LATAM Airlines group, Sky Airline, Aerolineas Argentinas, Austral, GOL, Azul** and **Avianca Brazil**. Out of the regional sales office the complete Lufthansa Technik group portfolio is being tendered to respective customers.

The **RUAG Aerostructures division's Emmen site** is being strategically realigned and adapted to meet current and future market conditions. In addition to various modifications to processes, some HR measures are also necessary. The employee representatives have been notified of the planned measures. The employees concerned will be informed about their situation personally by the end of January. The focus of the reorganization is to secure the site in the long term through a healthy, sustainable cost structure. The anticipated fall in sales due to expiring orders and the new strategic focus on civil aviation programmes require us to concentrate in future on our core competencies of machining, sheet metal processing, surface treatment and assembly. Following intense discussions with the other divisions and the employee representatives, some employees have been offered alternative positions within RUAG. Despite the internal transfers and a restrictive hiring policy, the necessary reorganization will result in 15-20 terminations of employment by the employer for business-related reasons. This strategic realignment will further strengthen the core competencies at the Emmen site to become more competitive on an international market. Existing and new orders being carried out in Emmen on behalf of the RUAG Aerostructures Airbus programmes in Oberpfaffenhofen will ensure the basic workload for the restructured Emmen site over the next few years. The measures initiated will enable the RUAG Aerostructures division's Emmen site to operate competitively and acquire new orders.

Age is a numbers game

Analysis by ***Keith Mwanalushi***

Commercial aircraft fleets are getting older and can provide economic service longer than ever before, as such, it's even more crucial to enhance early identification of significant structural defects. ***AviTrader MRO*** analyses the ageing aircraft market.

Many aircraft accidents around the world have been linked to ageing aircraft. Service experience has shown that there is need to have continuing updated knowledge of the structural integrity of aircraft, especially as they become older. The key issue is how this identification can be effectively and consistently achieved.

Key to applicable, effective and economical maintenance of ageing aircraft structures is a profound engineering expertise based on in-service experience, especially with aircraft types certified under different philosophies for design against structural fatigue, such as fail-safe versus damage tolerant.

"Aircraft manufacturers have a tendency, at least for metallic structures, to apply design principles which have been used in the past also for new aircraft design, even though regulations since the late 1970s require that all new aircraft types be certified 'damage tolerant'," comments Michael Lariviere, director of aircraft system engineering and modification at Lufthansa Technik.

Essential in this assessment is cooperation with the manufacturer - Lariviere attributes this mainly by means of participating in the relevant working groups, such as the aircraft model specific structure task groups and structure (maintenance) working groups. "This provides to the industry the best chances to develop efficient structural maintenance programmes, which allow timely detection, and rectification, of structural fatigue and corrosion damage before it can contribute to catastrophic failure.

Mr Lariviere - Lufthansa Technik is actively involved in the rulemaking processes for both FAA and EASA rules

An ageing A340 undergoes maintenance works. *Photo: Lufthansa Technik Philippines*

"It also helps to better predict the average downtime an aircraft requires for maintenance purposes; obviously a commercial aircraft aged six years will have significantly less inspection and repair requirements compared to a 20 year old airframe. This expertise is essential for operators to avoid operational disruptions due to unscheduled and unexpected downtimes," Lariviere continues.

Clearly, foresight and preventive maintenance is vital during an ageing aircraft's heavy maintenance event. Rainer Janke, VP for marketing and sales at Lufthansa Technik Philippines chips in and says it's important to continuously collect and archive all significant structural defects experienced by the airline operator.

"More often than not, there are significant structural defects that are recurrent in specific aircraft types and series. Based on collected data and experience, Lufthansa Technik Philippines' record of its customer's aircraft enables us to anticipate what structural defects to expect during the next layover planning so that both LTP and its airline customer are prepared. As a result, we have the ability to foresee and identify areas of structural defects as early as during the work package review and planning, thus reducing an aircraft's downtime,"Janke explains.

Mr Lariviere says most of the metallic fatigue cracking damage types can be safely detected by standard inspection means, which are visual inspections and non-destructive testing methods, mainly ultrasonic and eddy currents. Ageing of composites is dissimilar of metallic fatigue and requires different inspections; due to their material characteristics, additional inspection techniques are required, primarily thermography.

"All of these NDT methods are not particularly new," says Lariviere adding that the challenge for ageing aircraft structure inspections is the size of the inspection area – whilst for a "young" aircraft typically only those areas at isolated locations are inspected where peak stresses occur and fatigue resistance is rather low. An airframe having accumulated a significant number of flights, and therefore having experienced material deterioration by fatigue and/or environmental (corrosion) and/or accidental (e.g. hail strike, turbulence, hard landing) damage may require NDT inspection of large portions of the structure, such as entire skin panels or stabilisers.

Lariviere: "To efficiently accomplish these inspections, new methods are required with a high inspection speed, density and fidelity. Examples are phased array ultrasonic inspections, pulse thermography or automated inspection devices (robotics). Lufthansa Technik's engineering inno-

The challenge for ageing aircraft structure inspections is the size of the inspection area. *Photo: Magentic MRO*

vation teams are involved especially in the two latter methods."

Another phenomenon Lariviere describes is called "widespread fatigue damage", in which cracking does not occur as an isolated, relatively easily detectable crack, but difficult-to-detect small cracking of adjacent structural features, such as each hole along a fastener row, which after cumulating sufficient density can converge to rapidly form a large crack which may cause severe structural failure.

"Therefore, recent airworthiness regulation mandates that aircraft manufacturers determine for all large transport category aircraft types a Limit of Validity (LoV), representing the limit, in terms of flight cycles and flight hours, until sufficient engineering data is available to conclude that the structure is reasonably free from undetected widespread fatigue. Naturally, extending an aircraft's service life beyond that point requires significant amount of testing, analysis, aircraft inspection and even modification, and is hence rather unlikely to occur," Lariviere observes.

So in terms of overall costs is there a real need for airlines to invest in extending the life of older aircraft? Larry Montreuil VP for asset management and business development at Werner Aero Services reminds that the large capital investment an airline makes for it to purchase a new fleet is staggering.

"The lease and finance costs siphons cash from other opportunities and the new fleets carry with them a great deal of financial drag across the organisation in order to support new aircraft," tells Montreuil. "Almost every aspect of an airline is likely to be impacted by the introduction of new aircraft types," he adds.

> "The robust MRO aftermarket for maintaining older aircraft also helps to make older aircraft a viable choice."
>
> Larry Montreuil, VP for asset management and business development at Werner Aero Services

Alternatively, Montreuil stresses that proper maintenance of existing, older aircraft can result in a lower total cost of ownership. "It could also be argued that the high degree of familiarity with an existing platform has inherent safety and efficiency advantages. The robust MRO aftermarket for maintaining older aircraft also helps to make older aircraft a viable choice."

The ample supply of relatively low cost spare parts available through the surplus market should provide an additional cost advantage to expensive OEM parts encumbered by high R&D costs. Conversely, Montreuil states that older surplus parts have had the benefit of years of operational experience that typically results in improvements and modifications found in a mature product life cycle.

It's worth noting some aircraft have a mission profile that is uniquely suited to the task at hand and a newer replacement is either unavailable or far too costly to be supported by the operation. "Aircraft life extension may be even more attractive now that fuel prices have dropped some," notes Bryan Anderson, president of RepairMaps, Inc. - a web-based application for managing aircraft repairs and ongoing damage maintenance.

"One area where our system can help maximise the effectiveness of a structural programme is with the ability to track the reliability of the heavy maintenance effort from a findings perspective. Most reliability programmes are geared towards operational issues. I recommend a similar effort with regard to the task cards in the heavy maintenance programme," says Anderson.

He continues: "Tracking the results of performing each card over time allows one to adjust the programme most effectively. For this tracking I tend to focus on tracking the man hours expended as a result of performing a certain inspection task rather than counting individual findings. This gives a better indicator of the structures true condition and effort required for repair and remediation."

The EASA in Europe now has new rules on how to maintain ageing aircraft, interestingly these approaches differ somewhat to FAA rules in the U.S. Lufthansa is actively involved in the rulemaking processes for both FAA and EASA rules, and participates in the working groups to harmonise the regulation. "Harmonisation has been a lengthy process," Lariviere states, saying mainly due to the differences in the underlying basic legislation (U.S. federal laws versus European Commission regulation).

"It took EASA significantly more time to develop a rulemaking – while for US registered aircraft having exceeded their design service goal the grace period for the Ageing Aircraft Safety Rule (AASR)

survey will end in December 2016 under FAA rule, EASA will likely publish its regulation by late 2015, whereby a shift in compliance limits of up to six years may occur," Lariviere stipulates.

It helps to better predict the average downtime an aircraft requires for maintenance purposes. *Photo: IAI Bedek*

According to Lariviere, the main difference from a legislative point of view is that the ageing aircraft regulation is an operator's requirement under FAA (FAR Parts 121 or 129, as applicable). To help operators to show compliance with this requirement, the Type Certificate or Supplemental Type Certificate holders are mandated to develop the necessary engineering data; FAR Part 26 has been created for this purpose. However, he adds that EASA "did not chose" to revise Part-M to add ageing aircraft requirements for operators in a similar way FAA did. Instead, the already existing EASA Part 26 was extended to add both operator and Type Certificate or Supplemental Type Certificate holder requirements. Thus, while the maintenance actions to be accomplished are very similar, FAR Part 26 and EASA Part 26 are different and should not be confused.

"From a more practical point of view, due to EASA's late issuance of the regulation, transfer of aircraft between US and European registrations becomes more difficult, as the same aircraft must already comply under US registration, while it must not yet under EASA Part-M operations. Even more challenging is the transfer of removable structural components which are [or contain] fatigue critical structures, such as passenger doors, as with current standard practices it is very difficult to determine, and to track, if a used component is compliant with the ageing aircraft requirements," Lariviere continues.

In terms of ageing aircraft, seemingly, there are some trends as to the types which have greater demand for MRO services. At Lufthansa Technik Philippines, considering the age of the Airbus fleet of the A340-300/600 and classic A320s they have greater demand for MRO services.

Lufthansa Technik Philippines works with airframe manufacturers like Airbus in identifying structural defects.

Brian Neff CEO at CTS Engines in Fort Lauderdale, Florida believes the 767 has a great life ahead of it in the mature aircraft market, both as a cargo aircraft and for smaller passenger carriers. "Parts are plentiful and inexpensive, and the reduced ownership cost of older 767s more than compensates for the relative efficiency shortfall when compared with a newer A330, for example," Neff observes.

One important design philosophy introduced in the late 1980s was to use more sophisticated calculation methods (such as Finite Element Analysis) and improved manufacturing techniques (such as integrally machined parts) to reduce structural weight. The combined effect was the ability to rely on the damage tolerance characteristics of a single, but stronger part, instead of several parts acting as multiple, fail-safe load paths.

Mr Lariviere comments that while this is beneficial for gross weight, and therefore for fuel efficiency, it imposes some disadvantages for ageing structures: "Once these typically large, complex, integrally machined develop fatigue cracks, they are very difficult, if not impossible, to repair due to their very limited suitability to accomplish relatively simple 'cut and splice' repairs. Therefore, even in cases where the manufacturer can demonstrate the crack present does not constitute an immediate airworthiness concern, replacement of such large part is necessary, which is a very expensive and time consuming undertaking."

AAR Delivers

By Dany Kleiman, VP of Repair & Engineering - AAR

AAR is the largest provider of MRO Services in North America and the third largest worldwide. We operate one MRO network of six airframe repair facilities across the U.S., as well as shops for component repair, landing gear, wheels and brakes.

Economies of scale

AAR has implemented quality control practices and a proprietary software platform across our MRO network to insure consistent and seamless work from one facility to another. Sharing best practices across the network has also allowed us to reduce costs and increase efficiencies. As an independent MRO, we service almost every type and size of commercial aircraft at one of our six locations, which also provides our customers with options close to operations.

Last year, AAR maintained, repaired or overhauled 1,082 aircraft with five million man hours worked

Full suite of airframe MRO offerings

While best known for our heavy maintenance work, AAR also does cabin upgrade; avionics upgrades; interior modifications/conversions; airframe painting and light maintenance; as well as the installation of winglets. With the increase in passenger expectations and the decrease in fuel prices, AAR has been doing an increasing amount of complete cabin upgrades including seats, lighting, in-flight entertainment (IFE) and wireless connectivity.

Breadth of services

Adding to AAR's value proposition is the full range of products and services that our company provides. We are able to lower costs and streamline service by pairing or bundling services such as airframe maintenance, landing gear services, component overhaul and supply chain management from across our operating units.

Supply chain programmes growing

AAR's Aviation Supply Chain business ranks among the world's top providers of aftermarket aircraft parts and logistics and inventory support, as well as OEM components. We sell and exchange parts for airframes and engines and distribute parts for OEMs including Unison and Eaton. Our Airinmar group offers repair and warranty management/optimization that can help almost any airline reduce costs. Growing areas of service include programmes that provide power-by-the-hour rotable component support as well as consumables and expendables – replacing hundreds of suppliers with one source.

Dany Kleiman, VP of Repair & Engineering - AAR

New facility in Brussels to serve EMEA

AAR recently opened a new warehouse in Brussels to serve EMEA airlines rotable parts needs 24/7. Whether it is a quick turnaround on AOG or ongoing PbH component support for a fleet, AAR now provides our sourcing expertise from Europe, as well as the U.S. We also own component repair facilities in both the U.S. and Europe.

New offerings to come

AAR has also been building additional wide-body capacity and hopes to capture some of this work back from Asia as the cost gap closes. AAR recently built a new hangar at our Lake Charles, LA facility specifically for wide-bodies and it is booked for the next 6 months.

We also recently announced plans to build a new wide-body MRO facility in Rockford, Illinois to service the next-generation of aircraft.

AAR was also recently chosen by AMMROC to support the design, outfitting and integration of key areas for one of the world's largest military MRO being built in the UAE. And AAR's experience is being sought by potential partners from around the world for similar technical and operational support.

Rendering of AAR's Rockford facility

History

AAR is a leading aerospace and defense contractor serving customers in more than 100 countries around the globe via a broad portfolio of businesses and a workforce of over 6000. Our industry-leading solutions enable our customers to fly passengers, cargo and defense assets in a safe, reliable and cost-efficient manner. We help our customers control costs, streamline their operations and do more with less. For more than 60 years, aviation customers have put their trust in us.

In the hot seat.....

Keith Mwanalushi speaks to Zilvinas Sadauskas, CEO, Locatory.com.

AviTrader MRO: What attracted you to this business?

Sadauskas: Actually, I have always been an IT guy, deeply interested in new technologies from one side and psychology as well as human behavior from another. Prior to starting my job in the industry I had never imagined myself joining aviation or dreaming about aircraft.
Almost four years ago everything changed. A friend approached me and said that the chairman of Avia Solutions Group (Locatory.com's holding company) has an interesting idea and is looking for a professional to handle its implementation. I took on the challenge.

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

Sadauskas: Despite quite a busy schedule, I plan my day more by tasks, rather than by minutes or hours. It allows me to be more flexible and reserve some time for improvisation, ad hoc brainstorm sessions or unforeseen meetings.
Still, in the core of my typical work day are the short meetings with various teams – IT developers, sales, customer support, marketing, etc. – during which we review the progress of current projects as well as explore new options we can create or develop or offer to our partners.
We also have informal sessions during which both me and other team members share their thoughts and discuss various issues which stretch far beyond their job. I personally believe that a CEO is not only an executive guy, but also a chief psychologist (in a certain manner) who must feel the mood of the team and support it in both joy and grief.
Certainly, a large portion of my time goes to communicating with the industry, shareholders, delivering presentations and speeches, investigating new trends and leads, supervising the overall company's performance, etc.

AviTrader MRO: With the introduction of the 737 MAX in 2017 and increased production rates do you agree with the notion that this will push the current generation of these aircraft into premature retirement?

Sadauskas: It depends on what you call a retirement. Aviation is a rather inert market and it takes quite some time for the changes to happen. Take a look at the Dreamliner; it has been more than four years since the first flight. And what do we have now? Which market segment has been won over by the new aircraft?
If we take a look at any other industry, let's say, smart phones, it changes rapidly but the same laws apply. Premium products such as iPhone retain their value even after three generations. And Boeing has quite a good strategy in keeping the value of older aircraft and their aftermarket. However, it must be noted that Boeing is highly influenced by its biggest competitor Airbus which has a slightly different strategy and, in my opinion, is more innovative with it.
In other words, I think that the current generation of aircraft will be influenced by the introduction of new types, but not as radically as it is perceived by the public.

AviTrader MRO: You once stated that most commercial airlines and MROs are still managing their supply chain process ineffectively, why is that?

Sadauskas: The same thing – inertia of the aviation industry. Technology provides new strategies to accomplish the same tasks, but it's really hard to introduce something new for a company with 5000 employees, don't you think?
The current aviation supply chain also lacks common EDI (electronic data interchange) although there are initiatives such as SPEC2000 supported by Airbus. Another thing, ironically, is credibility. There are lots of scammers trying to make some money in shady ways, and many airlines and MROs encounter numerous far from funny situations with AOGs (Aircraft on Ground) and money losses.
Aviation is a highly scattered market with several big supply hubs in the USA, the UK and the Middle East. But what if you're left with an AOG-ed aircraft in a remote location? Maybe there's a supplier right next door, but you wouldn't even know that.
Another thing is legacy systems. It could take anything from several minutes to several hours to complete a single transaction in an enterprise resource planning (ERP) system and most of the systems are very complicated for an end user.

AviTrader MRO: What role is technology playing in aircraft spare parts management today?

Sadauskas: A highly significant one. However, we have observed several cases involving some reluctance in emerging markets and also in the USA. 'Old school' aviation business veterans sometimes feel kind of reluctant regarding modern technologies. What worked yesterday will work today, right? Correct, but the world spins so fast, it brings so many new opportunities and tools to make things easier, more convenient and more efficient.
In this highly competitive market which is becoming even more competitive with OEM's rapidly stepping in it is impossible to survive if you do not innovate constantly. A CEO of a spare parts trading business has to be very focused on keeping the margins high enough or making the operations as LEAN as possible.
This is where innovation helps a lot.


Zilvinas Sadauskas says the current aviation supply chain also lacks common EDI

AviTrader MRO: Locatory.com is in the process of integrating an artificial intelligence system into the component search process. What does this entail?

Sadauskas**:** This is something that solves a problem which has seemed unsolvable until now. Many people who have already tried this product found it rather astonishing.
The thing is that 90% of Internet users know how to use e-mail, in business it should be 100%. Most of the traffic in spare parts trade is also produced via e-mail. Although our system is really simple and user friendly, I had been thinking of something that would be even easier for our customers to use and an idea struck my mind.
Why can't we make an interface for our platform in the most common form that can be linked to an e-mail?! And so we did it. We created an artificial intelligence engine, a neural network which understands and finds any kind of part numbers in an email.
Why is it so revolutionary? Imagine how many manual assessment and copy-paste actions an average procurement manager has to make during the day. With our interface you forward any kind of e-mail to 'Amber' A.I., and she extracts the part numbers, searches for them on the Locatory.com marketplace, prepares the results and sends an e-mail back. You can imagine the convenience and time savings with that.
The entire process from the receipt of your initial e-mail takes less than a minute. It's neither magic, nor marketing – it's high technology, and we, here in Lithuania, are really good at it.
We are going to introduce another big thing to the market this year. It is based on our Amber artificial intelligence engine and will be aimed at automating RFQ and vendor quotes transfer to ERP systems – the process which is now done manually and thus requires significant human/time resources as well as leaves a lot of space for human factor errors.
Can you believe that after running initial tests with a beta version of our new product we saw a 1400% increase in efficiency. A task which took several minutes (annoying minutes I must say) to do can be done in several seconds from now on! Amazing isn't it? Stay tuned.

The surplus parts market comes of age

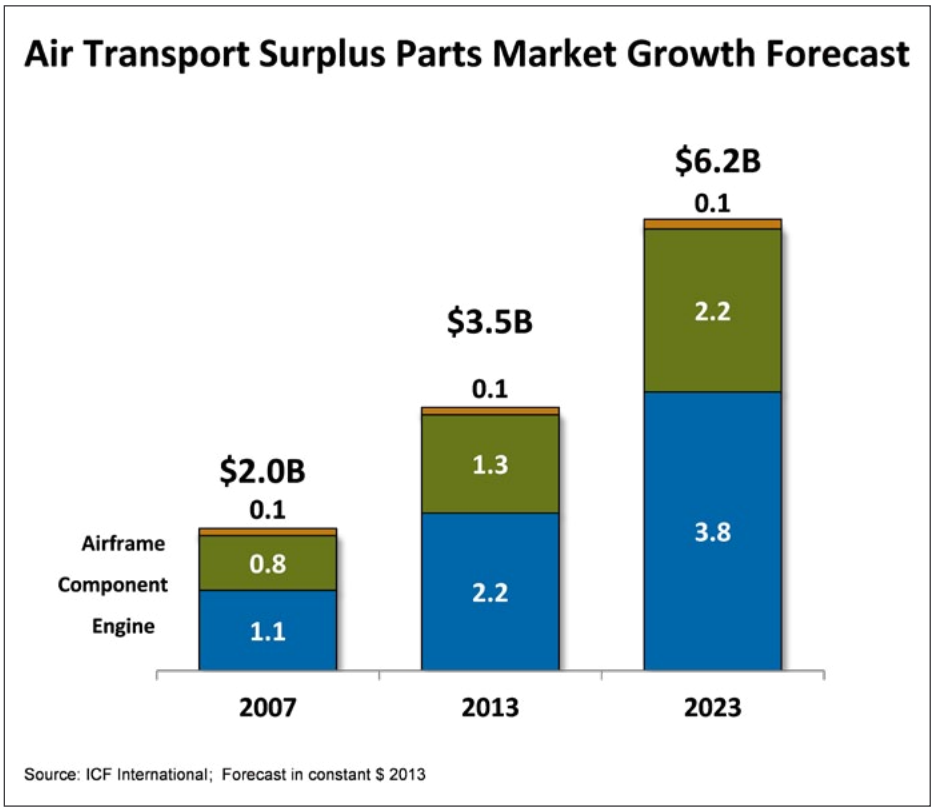
Analysis by Kevin Michaels*, VP, ICF International*

New service parts, or "spare" parts, are the lifeblood of commercial aerospace industry profits. Annual consumption is in excess of $20 Billion in the air transport sector alone, and most OEMs garner the lion's share of their profits from this vital aftermarket revenue stream. Commercial aerospace is the ultimate "razor-razor blade" business model.

Alternatives to new OEM parts are therefore a big deal. PMA parts are the best known, yet have achieved a modest 2% market share after decades of effort. A less glamorous, but fast-growing alternative is surplus parts, which have emerged as the key threat to the OEM service parts revenue stream. My firm has studied the surplus parts market extensively and estimates annual consumption is $3.5 billion – about six times as large as PMA parts and a 12% market share. Moreover, the use of surplus parts is poised to grow significantly over the next decade. ICF's nominal scenario is for surplus parts usage to reach $6.2 billion by 2023 (constant dollars) – a 5.6% annual growth rate.

Several factors will fuel the growth. With savings of 30% or more versus OEM new list prices, customer demand continues to increase – particularly with airlines that were loath to use surplus parts in the past and won't consider PMA. Surplus parts supply will also expand with an expected wave of aircraft retirements. ICF anticipates up to 1,000 retirements per year later this decade, up from just over 600 today. Also underpinning the growth is the changing nature of the surplus parts supplier business model itself, which has transformed from a cadre small, agile and capital-constrained parts "traders" to large, integrated suppliers with ample access to capital.

Notably, engine OEMs and aircraft lessors have become major participants and comprise five of the six largest surplus dealers today: GE (including GECAS), Pratt & Whitney, CFM Materials, GA Telesis and AeroTurbine (owned by ILFC). System OEMs have been slower to participate, exceptions being Rockwell Collins and Honeywell. As a result, these well-heeled suppliers can proactively pursue aircraft part-outs to ensure inventory availability on new generation aircraft. Today, over 80% of surplus parts come from aircraft part-outs, up from 55% a decade ago. For lessors, surplus parts are a useful extension of their business model. A 15-year old aircraft, for example, might be worth more parted-out than leased to another operator.



Not surprisingly, the lure of relatively quick returns from aircraft part-outs is also attracting outside capital. GA Telesis, for example, recently raised $500 million from institutional and private clients to establish a new aviation investment vehicle focused on part-outs. Private equity and hedge funds are also investing. Some industry veterans worry that too much capital is pursing part-outs and inflating used aircraft acquisition prices to unsustainable levels as well as surplus supply.

What do these changes mean for OEMs, and their all-important service parts revenue streams? First, OEMs must pay greater attention to their service parts businesses – particularly for mature and sunset aircraft. In these phases of the aircraft life cycle, service parts list prices are out whack with market realities after years of automatic price increases. Parts availability for some OEMs is poor, which increases customer demand for surplus parts (and PMA). OEMs also need to recognise the need for tailored maintenance work scopes integrating surplus parts should airlines demand this. Rolls-Royce, for example, recently introduced TotalCare Flex, a service offering tailors the maintenance work scope for mature and sunset engines. Finally, many OEMs must decide whether or not to participate in the surplus market directly. While the largest engine and avionics OEMs have taken the plunge, dozens of other OEMs must determine their role in the surplus market: participate, partner or monitor?

For independent MROs, surplus parts are a mixed blessing. On one hand, they create an opportunity for price differentiation and low cost supply for rotable banks. However in some instances surplus retables effectively compete with MRO services and may reduce maintenance demand for mature aircraft models.

Finally, for operators, surplus parts provide a rare chance to attack aircraft maintenance costs, which account for 15-18% of an airline's operating costs. Some large airlines are buying and parting out aircraft themselves (Delta MD90s are a good example) while others are demanding revised work scopes from their suppliers.

Whether surplus parts reach our $6.2B estimate by 2023 remains to be seen, but it is clear that this OEM service part alternative has come of age as a key element of the global MRO industry.

Global Eagle Entertainment, a worldwide leading provider of content, connectivity and digital media solutions to airlines, has been selected by **WestJet** to manage its inflight content services. WestJet is currently overhauling its existing inflight entertainment (IFE) system and replacing it with a wireless IFE solution. Global Eagle Entertainment (GEE) will provide a broad array of content that can be accessed by passengers using their personal electronic devices or tablets rented from the airline. Through this long-term agreement, GEE will provide a selection of current movies and television, including a wide catalog of engaging and entertaining programs, beginning in the first quarter of 2015.

AerData, the provider of lease management, records management and engine fleet planning software announces that **Air Serbia**, the national airline of the Republic of Serbia, has selected AerData's STREAM software. STREAM (Secure Technical Records for Electronic Asset Management) is the industry's foremost web-based solution used by some of the world's largest airlines, lessors and MROs to manage aircraft and engine records. AerData was acquired by **The Boeing Company** and became part of **Boeing Commercial Aviation Services** in May, 2014. AerData products are now part of the integrated suite of aviation services marketed as the Boeing Edge. These include parts, training, engineering, maintenance and software solutions that increase the efficiency and profitability of airlines and leasing companies.

Volartec welcomed two new Alkym customers to the APAC region. Both are based in Indonesia and are part of the same group. The MRO company **Aero Nusantara Indonesia (ANI)** has selected Alkym to replace their existing MRO IT solution. At the same time **Xpress Air** with their strong links to ANI will also benefit from the fully integrated solution provided by Volartec.

Garmin International reported the certification of an Automatic Dependent Surveillance-Broadcast (ADS-B) solution for the Gulfstream G150, bringing **NextGen** compliance to this versatile mid-sized business jet. The Garmin GTX 3000 Mode S Extended Squitter (ES) remote transponder and GDL 88 ADS-B datalink combine to fulfill global ADS-B requirements while meeting the stringent demands of business and transport category aircraft. This cost-effective ADS-B upgrade meets the immediate needs of business aircraft that have limited options to address global airspace requirements.

People On The Move

Dennis Orzel
Photo: PAS Technologie

PAS Technologies announced that industry veteran **Dennis Orzel** has rejoined the company's senior leadership team as Chief Operating Officer. In this role, Mr. Orzel will be responsible for all product development targeting top line growth while leading the engineering and program management functions. He will be based in Middletown, Connecticut. PAS Technologies specializes in providing cost-effective original equipment manufacturing (OEM) and maintenance, repair, and overhaul (MRO) products, services and solutions for the commercial and military aerospace, Industrial Gas Turbine (IGT), and oil and gas (O&G) markets.

AJW Aviation announced the appointment of **Danielle Kaskel** as the new Senior Manager for Business Development – North America, based in the Miami office. In her new role at AJW, Danielle will focus on developing the Company's relationships with new customers while seeking key opportunities to ensure its corporate success across the competitive marketplace in the Americas. Danielle is an experienced business development professional, with a history of sales and management success. Prior to joining AJW, she was Business Development Manager at AeroTurbine where she first started as sales representative in 2010.

SR Technics announced that **Frank Walschot**, Head of Engine Services, has been promoted to Chief Operating Officer as of January 1st, 2015. Commenting on Frank Walschot's appointment, SR Technic's CEO **André Wall** said: "There is no doubt that Frank is the right person to ensure that our global operations will be based on known and valued safety and quality standards. SR Technics is a business with big ambitions and a clear strategy for growth. His appointment allows me to spend more time driving innovations and strategic relationships with customers and partners as we take our global corporate strategy forward."

Tom Williams, presently Executive Vice President Programmes at Airbus, will succeed **Günter Butschek** as Airbus Chief Operating Officer (COO) and will become a member of the Group Executive Committee of Airbus Group. Butschek has decided to leave the Group at the end of 2014 in order to pursue other career opportunities. **Didier Evrard**, currently Head of the A350 XWB programme, will succeed Williams and in this new function will become a member of the Executive Committee of Airbus. He remains A350 XWB programme director until his successor is appointed. **Klaus Richter**, Chief Procurement Officer of Airbus and Airbus Group, has been promoted to become a member of the Group Executive Committee of Airbus Group. In addition, he will become the national representative for Airbus in Germany.

David Brigante
Photo: ATR

David Brigante has been appointed as new Senior Vice-President of the new Procurement directorate of ATR. He will be in charge of the contract negotiations with the suppliers of the aircraft manufacturer and will report to ATR's Chief Executive Officer **Patrick de Castelbajac**. He will sit on the Executive Committee. During his career, he has held a number of successive different positions within Alenia Aermacchi. Since the end of 2012 he was Senior Vice-President Customer Support and Services, being responsible for the logistics support of all military programs in Alenia Aermacchi. Previously, between 2010 and 2012 he was Senior Vice-President Procurement, and was in charge of all products and programs. From 2008 to 2010 he held the position of Senior Vice-President Industrial Control and Planning, while between 2009 and 2010 he was also in charge of the Commercial Programs of Alenia. He joined Alenia in 1988, and up to 2008 he had covered responsibilities from contract management to sales activities always within the commercial field for aerostructures.