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from around the world

AVITRADER
MRO

Published monthly by

AviTrader Publications Corp.
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AviTrader MRO is a subscription-free monthly publication. To receive a personal copy in your inbox every month, **please click here** to subscribe.

Opinion

Please send your comments and queries to keith@aeropublications.co.uk

The aftermarket evolution

As an industry, we are in the cusp of an aftermarket evolution and its happening all around us.

The global commercial aircraft aftermarket parts market is growing with the rapid pace.

According to a recent study the global market of commercial aircraft aftermarket parts will grow at a rapid pace and the growth is mostly fueled by the aircraft component industry. The global commercial aircraft aftermarket parts market has changed significantly over the years and is expected to capture a CAGR of 6% over the forecast period of 2016-2021 according to industry reports. The key driver of the market is the strong demand for commercial aircraft across the globe. Rapid economic development in emerging countries has resulted in increased air travel traffic, which, in turn, has resulted in a surge in demand for aftermarket parts. Moreover, replacement of old air-

craft and up gradation of aircraft parts with newer, fuel-efficient parts has also driven the market.

Despite the challenges, as observed by industry specialists, the market is expected to continue growing in the future. One of the trends helping this is the renewal of aircraft fleets. Hundreds of older aircraft are being retired every year globally and replaced with new and efficient fleet. This has increased the availability of surplus parts in the market obtained from retired aircraft. This opens up new opportunities for all the players in this market. Similarly, PMA vendors are also gaining more acceptance globally as the providers of aftermarket parts. Due to the opportunities for growth in the market, and cost advantages of PMA parts, they will continue to make a presence in the market.

Keith Mwanalushi
Editor



The CFM56 powers the 737NG fleet.
Photo: Boeing

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Liebherr-Aerospace will supply main gear steering equipment for Boeing's 777 and 777X
Photo: Boeing

Liebherr-Aerospace to supply main gear steering equipment for Boeing's 777 and 777X

Boeing Commercial Airplanes has awarded Liebherr-Aerospace another contract for their 777 and 777X programs. Liebherr-Aerospace will deliver two electronic components of the main gear steering system for the two wide-bodies: the main gear steering control unit and the nose gear steering position transducer. Relying on its unrivalled experience in landing gear systems, Liebherr-Aerospace will design and manufacture the main gear steering control unit, as well as the nose gear steering position transducer. Boeing's 777 and 777X aircraft utilize a steered aft axle on each of the main gears to minimize turning radius and reduce tire scrub. The main gear steering control unit receives signals from the two nose gear steering position transducers (one on the captain tiller and one on the first officer tiller) and controls the two power control actuators (one per each main landing gear aft axle). It assists normal taxi maneuvers whenever the nose gear is steered greater than 13° and provides a locking mechanism to lock the aft axles in the centered position. Liebherr-Aerospace Lindenberg GmbH, Lindenberg (Germany), Liebherr's center of excellence for flight control and landing gear systems will be in charge of developing and qualifying the units. The qualification as well as the manufacturing of the main gear steering control will be conducted in house at Liebherr-Elektronik GmbH, Lindau (Germany), center of excellence for electronic hardware

development and manufacturing, in order to remain in control of this key electronic unit and to provide Boeing the high quality that Liebherr is known for. Liebherr-Aerospace will support the design and development also from its liaison office in Seattle to ensure a close interaction with Boeing.

SR Technics and Skymark Airlines seal new long-term engine MRO agreement

MRO service provider SR Technics has signed an agreement with a new customer, Skymark Airlines, to provide engine MRO services for the Japanese carrier's CFM56-7B engines. Under the five-year agreement, SR Technics will handle Skymark's engine shop visits at its Zurich and Cork facilities. The new agreement was signed after a period in which SR Technics performed several one-off engine shop visits for the Japanese airline. Skymark is continuously expanding its fleet and services and has therefore decided to partner with an MRO provider known for its flexibility, unbeatable turnaround times and quality standard – further strengthening SR Technics position in the Japanese market.

AerSale® to open new business unit in Roswell, New Mexico

AerSale®, a global supplier of mid-life aircraft, engines, used serviceable material and

MRO services, has opened a new business unit in Roswell, New Mexico, to be named AerSale Parts Manufacturing. An official ribbon-cutting ceremony is scheduled for September 25, 2018. Roswell Mayor Dennis Kintigh, AerSale Parts Manufacturing General Manager Randy Phelps and the Roswell Chamber of Commerce Redcoats will be in attendance. AerSale Parts Manufacturing has received Parts Manufacturing Approval (PMA) from the Federal Aviation Administration (FAA) to produce commercial and military aircraft parts and spares (FAA PMA PQ03874SW). The business unit will also be responsible for developing proprietary systems such as AerSafe™ and AerTrak™, which have been issued Supplemental Type Certificates (STCs) from the FAA to comply with the agency's various rules and mandates. AerSale Parts Manufacturing is a full-service design/build/install aircraft modification and alteration facility, from initial concept to certification. Its extensive capabilities include engineering and design, metal fabrication, wire harness fabrication, marking and ID capabilities, system kitting, and end-product supply logistics management.

General Electric expands footprint in Malaysia with aviation

GE Chairman & CEO John Flannery has reaffirmed the company's continued commitment to Malaysia with a major US\$80 million investment in GE Engine Services Malaysia (GEESM). Alongside this renewed commitment to the GEESM facility, GE also announced the establishment of the Global IT Service Desk, located at its headquarters in Kuala Lumpur. GEESM, an aircraft engine services workshop, will enter into a long-term tenancy agreement with Impeccable Vintage Properties (IVP), a wholly-owned subsidiary of Malaysia Aviation Group Berhad, subject to terms to be mutually agreed in relation to GEESM's Subang facility. This long-term tenancy agreement is part of GEESM's plans to invest in tooling, testing and skills capabilities to support the maintenance, repair and overhaul (MRO) of CFM International's cutting-edge LEAP engine. The LEAP engine, produced by a 50/50 joint venture between GE and Safran Aircraft Engines, represents a leap ahead in terms of aviation technology and material, and powers aircraft such as the Boeing 737 MAX, Airbus A320neo and Comac C919 single-aisle jets. The MRO work on LEAP will introduce the next chapter of engineering excellence for GEESM's Subang workshop, making it the first such facility outside the United States for GE.

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Photo: thyssenkrupp Aerospace

thyssenkrupp Aerospace rigorously implementing certification to the latest quality standards

The aerospace community has the highest standards of quality, safety, security, and reliability. Certification to EN 9100/9110/9120 plays an important role in order to fulfill complex customer requirements while taking into consideration the utmost quality criteria. Among the leading supply chain specialists in this sector, thyssenkrupp Aerospace has rigorously rolled out its quality management system and organized its locations for the needs of tomorrow. "We have succeeded in converting all our units in Europe to the latest versions of EN 9100s and EN 9120s. What's more, the branches in the USA, Canada, China, and India have also been certified to international standards. Following an audit, our colleagues in Brazil have likewise been awarded the coveted certification," states Torben Bunk, Quality Manager at thyssenkrupp Aerospace. With the successful certification advances, thyssenkrupp Aerospace is now one of the first companies to have globally progressed to the new standards. An important partner in conducting these worldwide audits is the central department Technology, Innovation und Sustainability (TIS) which has years of experience in this area. We are delighted that this project, which we launched over two years ago together with thyssenkrupp Aerospace management, has been successfully finalized. In fact, the certifications underline that we are a reliable supplier to the aerospace industry and, in the best interests of our clients, have adopted the ultimate standards. For this reason, we will convert the remaining locations worldwide to the new standards, too," adds Thomas Reimann, Head of Quality Management in the Business Area Materials Services.

AAR signs integrated component solutions agreement to provide full PBH support for Air Malta's A320neo

AAR, a leading provider of aviation after-market services to the world's airlines, has entered a multiyear Integrated Component Solutions agreement with Air Malta to provide full power-by-the-hour (PBH) support for its A320neo aircraft. Air Malta will receive nose-to-tail ATA chapter coverage, including airframe, APU and engine line replaceable units (LRUs) together with the provision of on-site inventory in Malta. The A320neo aircraft is the newest to join Air Malta's growing fleet. This agreement expands upon an existing relationship in which AAR already supports the airline's most recently delivered A320neo aircraft and marks the latest expansion of AAR's PBH footprint across Europe. AAR recently enhanced and centralized its global AOG and order fulfillment services by creating an International Operations Centre in London Gatwick to empower customer operational excellence.

Cebu Pacific Air extends component support contract with HAECO ITM

HAECO ITM, a member of the HAECO Group, has renewed its long-term contract with Cebu Pacific Air to provide inventory technical management support for the airline's Airbus A330-300 fleet. The contract extension covers the services of component MRO, repair management, component pooling, component engineering, stores and logistics management in Manila, Main Base Kit (MBK) services, and AOG support, ensuring Cebu Pacific's strong fleet performance

with HAECO ITM's customized and cost-effective solutions. Cebu Pacific currently has a fleet of eight Airbus A330-300 aircraft for its long-haul as well as high-traffic domestic and international routes.

StandardAero cuts ribbon on new 206,000 ft² Cincinnati component repair facility

StandardAero Component Services has cut the ribbon on a new 206,000 ft² repair facility, directly adjacent to its current 236,000 ft² component repair facility in Cincinnati, nearly doubling its capacity to accommodate rapid growth in customer demands during 2018 and beyond. The new facility has been converted into a high-tech aerospace component repair shop with new flooring, lighting and HVAC systems. StandardAero is actively moving parts, equipment and people into the building. The facility will accommodate component repair growth on new and legacy platforms, aeroderivative, military and commercial aircraft engine component repair, as well as larger components. Once fully operational, StandardAero expects to employ 200-300 new technicians to continue to meet the growing demands of customers over the next 12-18 months. Currently, the company has 70+ open positions publicly posted for new jobs in Cincinnati.

AJW Group awarded PBH contract with TAP Maintenance & Engineering

AJW Group, a world-leading independent specialist in the global management of aircraft spares, has been awarded a power-by-the-hour (PBH) contract with TAP Maintenance & Engineering, a leading global MRO provider and part of the TAP Group. The contract, which takes effect in September, builds on a long-standing relationship between AJW Group and TAP Maintenance & Engineering which includes the sale of engine parts and other rotables. AJW Group will now support TAP with the supply, repair and overhaul of rotatable components on two A320neo aircraft operated by Azores Airlines. AJW has a worldwide network of established supply chain vendor relationships, and a global base of more than 1,000 customers with over 4,000 aircraft under contract, making it the ideal partner for airlines and MRO organizations requiring fully integrated solutions and seeking to achieve competitive advantage.

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Luxair chooses FL Technics for Boeing 737NG fleet
Photo: FL Technics

National flag carrier of Luxembourg chooses FL Technics for Boeing 737NG maintenance

FL Technics, a global provider of integrated aircraft maintenance, repair, and overhaul services, has signed a long-term contract with Luxair S.A., Société Luxembourgeoise de Navigation Aérienne, the regional flag-carrying airline of Luxembourg for MRO services. The MRO services will be provided to their complete Boeing 737 NG fleet. First aircraft will be handled at the beginning of November 2018 in Kaunas (Lithuania) and will shortly be followed by two more. "The recent developments in the management structure of Luxair Technics, together with the company's decision to grow its Boeing 737NG fleet, gave us the opportunity to evaluate our future technical requirements in terms of base maintenance services. Having collaborated with numerous MROs over the past years, we experienced FL Technics during the last C-Check season and remained positively impressed with their level of professionalism, know-how on type, and customer focus. We are confident that their level of efficiency will translate into future operational gains through improved base maintenance turn-around times and an enhanced dispatch reliability and, consequently, we look forward to an excellent partnership with FL Technics", noted Nitulescu Cristian Alexandru, Head of Engineering & Planning at LuxairGroup.

Undisclosed airline fleet selects Inflight Humidification for its A350 Business Class

CTT SYSTEMS AB, a market leader of aircraft humidity control systems, has reported that an undisclosed airline has selected Inflight Humidification (IFH) in Business Class to be line-fitted in its entire Airbus A350-900 fleet. Aircraft delivery is scheduled from the second half of 2019 to 2023. The Inflight Humidification (IFH) system from CTT Systems is a highly appreciated feature in the VIP aircraft world. Powered by humidifiers onboard, the Business Class cabin environment is elevated to the same VIP-level with best wellbeing performance on the market. Business Class passengers will more easily stay hydrated, aiding better taste, improved quality of sleep as well as reduction of jet-lag. A cabin climate optimized for wellbeing is all about replicating earth conditions. Modern wide-body aircraft, such as the Boeing 787 and Airbus A350, have made great progress in lowering cabin altitude, reducing noise and vibrations, generating draft-free and fresher air, creating multiple temperature zones and implementing advanced mode lightning. The level of humidity is the next cabin climate feature in order to improve the performance of the cabin and elevate the total cabin environment experience. Although basic configured Airbus A350 and Boeing 787 aircraft obtain

a passive increase in humidity of 1-2 % RH, it is still far too dry – drier than any of the driest climates on earth. In a Business Class cabin, without a humidification system, air humidity is only 6-10 % RH. By selecting optional cabin humidifiers, available as SFE on both the Airbus A350XWB and Boeing 777X, passengers can benefit from best cabin environment in the air.

321 Precision Conversions selects Telair as Cargo Handling System provider for Passenger-to-Freighter Conversion of A321-200 aircraft

321 Precision Conversions, (321PC), has announced Telair International as the Cargo Handling System Manufacturer for the passenger-to-freighter conversion of Airbus A321-200 aircraft. The Telair International A321PCF main deck cargo system is the most versatile and ultra-light-weight system on narrow-body freighters in the industry. This system offers future customers of the Precision converted A321PCF aircraft a wide variety of configuration options allowing maximum flexibility to expand their business opportunities. Telair has added the industry-wide unique capability to load R-Code (16 ft.) pallets and offers transport capability for up to 14 A-Code, 13 M-Code as well as 16 B-Code Containers on the A321PCF. Telair's innovative and high-quality mechanical components guarantee longer durability of equipment, resulting in significantly reduced maintenance costs. In addition, Telair provides their robust 3D-Floorpanels including innovative design features like integrated drain pans for the A321PCF. As a customer-selectable option, Telair furthermore introduces a module-based cargo loading system for the lower deck, which represents the cost-effective addition of a containerized system with minimal retrofit effort. It optionally adds two extra lower deck ULD positions for conversion aircraft.



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Pro Line Fusion® upgrade for the King Air B200/B300 series turboprops is now certified by EASA
Photo: Rockwell Collins

Rockwell Collins' Pro Line Fusion® upgrade for King Air B200 and B300 series now certified in Europe

Rockwell Collins' Pro Line Fusion® avionics upgrade for Pro Line II-equipped King Air B200 and B300 series aircraft has been certified by the European Aviation Safety Agency (EASA). JetSupport B.V., headquartered in Amsterdam, is the first European dealer to complete a Pro Line Fusion® upgrade for the King Air B200, which completed its first flight on Sept. 4. The upgrade previously was certified by the Federal Aviation Administration (FAA) in 2016. Rockwell Collins' Pro Line Fusion® upgrade for King Air B200 and B300 series turboprops provides turnkey compliance with airspace modernization deadlines and transforms the flying experience with the largest widescreen primary flight displays available. It enhances the aircraft's value with the same icon-based touchscreen technology found on new-production King Airls and is the first touchscreen primary flight display to be certified for operational use.

C&L Aerospace named recommended vendor for CT7 LRU service by GE Aviation

C&L Aerospace, a C&L Aviation Group Company, has been named as the recommended vendor for CT7 ECMP and non-ECMP LRU services support by GE Aviation. GE Aviation has completed the transition and will no longer offer CT7 LRU support as part of the ECMP program. However, operators for both the CT7-5A2 and CT7-9B engines will have the option to utilize C&L Aerospace for their LRU support needs. C&L is uniquely positioned to provide the level of support the CT7 customers have come to know and demand. C&L Aerospace can offer operators of the CT7 engine options for hourly LRU coverage rates or unit-specific pricing for repair and overhaul. C&L Aviation Group is an FAA- and EASA-approved industry leader in servicing, maintaining, and supporting operators in the corporate and regional aviation industry. In addition to aircraft and engine sales and leasing

programs, C&L offers parts support, heavy maintenance, interior refurbishment, aircraft teardown, disassembly services, and aircraft management. C&L is headquartered in Bangor, Maine, with international offices in Australia and Europe.

Czech Airlines Technics enters new service segment of aircraft consumables sales

Czech Airlines Technics (CSAT), a daughter company of the Czech Aeroholding Group and which provides aircraft repair and maintenance services has entered a new market segment of aircraft consumables sales. The company has decided to take the step based on the demand from airlines, MROs and brokers. Thanks to the established network of suppliers, the amount of stored inventory and already established logistics support, the company will be able to respond to the demanding customer requirements connected with sales of a wide range of aircraft consumables in a flexible manner. The company already provides the service to Czech Airlines, Travel Services, Enter Air and, as of recently, to the Ministry of Defense of the Czech Republic. Aircraft consumables and component sales will be the responsibility of a new team which will actively offer stock to customers. The size of the inventory, to a value exceeding US\$15 million, is stored in CSAT's facility at Václav Havel Airport Prague. Unlike in other industries, a sufficient volume of stored spare parts and aircraft components is crucial, primarily in situations where it is necessary to replace a component as quickly as possible so as to ensure an aircraft's speedy return to operations.



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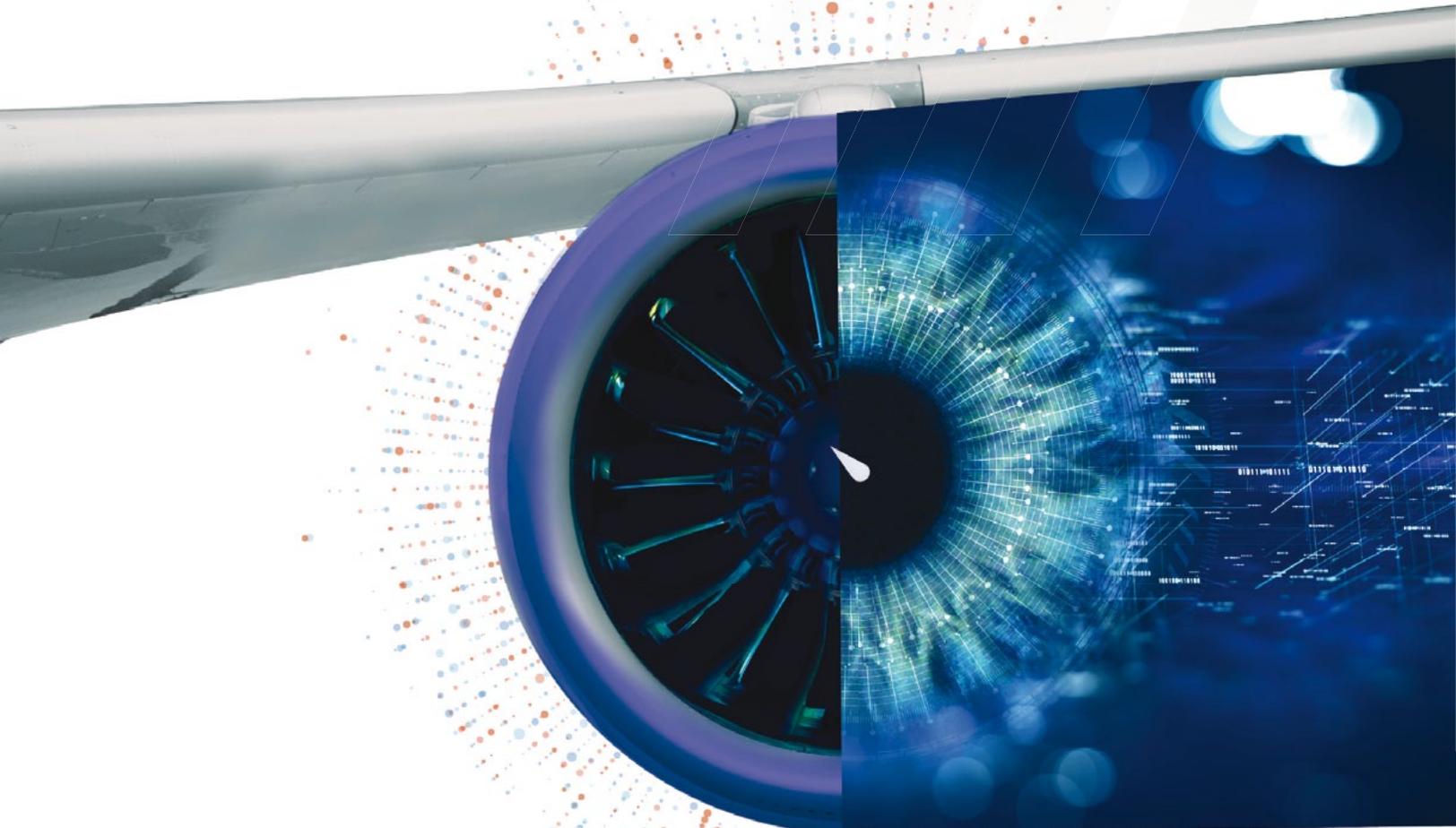
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ST Engineering's engine maintenance shop
Photo: ST Engineering

ST Engineering's Aerospace sector signs add-on engine maintenance agreement with Jet Airways

Singapore Technologies Engineering (ST Engineering) has announced that its Aerospace sector has signed an agreement to provide CFM56-7B engine maintenance, repair and overhaul (MRO) services for Boeing 737NGs belonging to Jet Airways and its subsidiary, JetLite. This agreement is an add-on to an earlier contract announced on June 18, 2015 which initially covers only a portion of the airlines' 737NG fleet. With the latest agreement, Jet Airways' and JetLite's entire fleet of 80 737NGs will be covered, upping the contract value from the initial US\$350m (approximately S\$478m) to a total of about US\$700m (approximately S\$957m). As part of the contract, ST Engineering will provide an integrated suite of engine MRO solutions, including off-wing engine maintenance support, on-wing services, as well as technical support. These services will be provided over a period of six years, starting from 2019, at ST Engineering's engine MRO facilities located in Singapore and Xiamen, China.

Oriens Aviation now supporting 12 Pilatus PC-12s at its Authorised Pilatus Service Centre

Oriens Aviation's exclusive British Isles Pilatus Centre, formally opened this February at London Biggin Hill Airport, reports a strong nine months, supporting a greater number of customers for maintenance and technical support. It is now supporting 12 PC-12 regular customers, including ten on the UK register – double the number since the start of this year, including two new arrivals now flying with private customers. Oriens Maintenance, which

complements Oriens Aviation's sales activity as exclusive Pilatus PC-12 distributor for the British Isles, has also extended support to Swedish, Finnish, Swiss and N-reg US PC-12 customers since the start of the year. Adhering to the Swiss OEM's newly revised maintenance inspection schedule for all PC-12 series, which reduces the timing of inspections from 100 to 300 hours, Oriens finds it has more capability to handle other aircraft types too. So far this year the business has carried out MRO checks on a Hawker 1000, Cessna Citation 500, Beechcraft 99 and Cessna 421. "We are keen to widen out our EASA capability and support types such as the Beechcraft 90 and 200 series, plus the Cessna 208 Caravan," commented Oriens' Maintenance Manager Steve Westran.

Airborne Maintenance & Engineering Services receives STC approval for Automatic Dependent Surveillance (ADS-B)

Airborne Maintenance & Engineering Services, a wholly owned subsidiary of Air Transport Services Group, has received Supplemental Type Certification (STC) approval from the Federal Aviation Administration (FAA) for Automatic Dependent Surveillance-Broadcast (ADS-B) modifications on Boeing 757, 767-200, and 767-300 aircraft. The Airborne solution includes many cost-saving features while minimizing aircraft downtime and upgrade expense to comply with Satellite-Based Augmentation System (S-BAS) requirements mandated by the FAA for 2025. This new ADS-B Out certification pairs the new ACSS (Thales) Transponders, which were the first to the market and are already in production, with two Esterline/CMC CMA-5024 SBAS GPS Receivers to provide the position information

to the transponders. The CMA-5024 will also prepare the aircraft for the future; LPV and GBAS are upgrades that can be added using the CMA-5024. The CMA-5024 gives the operator the best capability with more options for future growth by not only meeting FAA ADS-B mandates for 2020, but also meeting the S-BAS 2025 requirements, providing operators substantial cost savings during the upgrade and reducing overall out-of-service time per aircraft. Airborne is bringing this approval to the marketplace to help meet global demand for the ADS-B upgrade by the FAA deadline of January 1, 2020.

HAECO becomes Astronic CSC's exclusive component services provider for IFEC products in Asia Pacific

Hong Kong Aircraft Engineering Company (HAECO Group) has entered into a long-term agreement with Astronics Connectivity Systems and Certification (Astronics CSC), a wholly owned subsidiary of Astronics Corporation. Under the agreement, the two companies will establish a service centre in Xiamen, China to provide Astronics and its airline customers with Line Replaceable Unit (LRU) services in China and Asia Pacific. In accordance with the agreement, HAECO Group subsidiary HAECO Component Overhaul (Xiamen) will establish a fulfilment centre providing specialized engineering and component services, including testing, maintenance and repair for Astronics CSC's Summit™ LRUs. As an authorized repair centre for a wide range of component OEMs, HAECO Component Overhaul (Xiamen) has a proven track record of serving the component repair needs of airlines in the region.

Joramco signs agreement with flyadeal

Joramco, the Dubai Aerospace Enterprise (DAE) engineering division, has successfully performed maintenance on one of flyadeal's A320s, the Saudi low-cost carrier. The layover took place during last month for a 20-day duration. Saudia, the flag carrier of Saudi Arabia, announced the creation of flyadeal on April 17, 2016. The venture is part of Saudia Group's SV2020 Transformation Strategy, which aims to elevate the group's units into world-class organizations by 2020. flyadeal will cater to domestic travelers, Hajj and Umrah pilgrims, and the rising number of tourists to Saudi Arabia, among other groups. The airline launched flights on September 23, 2017, linking Jeddah to Riyadh.



Grand opening of Delta's new engine repair shop
Photo: Delta

Delta opens new 127,000 ft² engine repair shop

Delta has opened its new 127,000 ft², state-of-the-art engine repair shop. The new shop will enable Delta to perform maintenance on engines with the most sophisticated and advanced technologies — in particular, the next-generation powerplants featured on Delta's Airbus A350s and forthcoming A330-900neo aircraft. The new capability also stands to benefit the airline's Maintenance Repair and Overhaul or MRO business as Delta will work on engines from other airlines and aircraft operators. Delta TechOps serves more than 150 aviation and airline customers from around the world through its MRO business, specializing in high-skill work such as engines, components, avionics, airframe and line maintenance. Delta will be preparing the shop in the next few weeks, with its first engine induction set to take place in September. The airline is anticipating the first induction of the shop will be one of Virgin Atlantic's Trent 1000 engines. To build the brand new engine shop, Delta converted several large hangar bays at the airline's TechOps facility in Atlanta and created a workshop consisting of an engine assembly and disassembly area, a kitting parts area, engines work-in-progress area, shop materials and supplies (Kanban) area, life limited parts center of excellence, and repair and support area. The facility stands out from the adjacent aircraft hangar bays with a wall of glass consisting of more than 2,000 pieces of glass and stands seven stories tall underneath the historic Fly Delta Jets sign. The shop will support the airline's partnership with Rolls-Royce. In October 2015, Delta and Rolls-Royce signed a formal agreement for Delta TechOps to become an Authorized Maintenance Center for Rolls-Royce engines. Under the agreement, the airline will provide engine services for the latest generation Trent XWB, Trent 1000 and Trent 7000, in addition to the BR715, which had already been added to engine capabilities.

Major North American operator to upgrade Boeing 757 and 767 fleets with Thomas Global's TFD-7000 LCD flight display

Thomas Global's TFD-7000 Series flight displays have been selected by a major North American operator for installation in its fleets of Boeing 757 and 767 aircraft. The new displays leverage Thomas Global's pioneering Adaptive Display Architecture™ CRT-to-LCD technology and follow the company's introduction of the technology across a range of other commercial aircraft types. Installation will begin in early 2019. The TFD-7000 Series displays are plug-and-play active matrix LCD replacements for legacy Rockwell Collins EDU-776C/D and EDU-766C/D cathode ray tube (CRT) displays installed in Boeing 757, 767 and 737 Classic flight decks. The new displays feature advanced growth capabilities to support a range of future functionality. Developed with input from leading operators, the TFD-7000 Series

displays significantly reduce maintenance costs compared to keeping the legacy CRT displays, and eliminate the obsolescence threat and last-time buy commitments associated with CRT technology. In addition, the TFD-7000 Series helps operators to avoid more extensive and expensive full flight deck retrofits — while sustaining aircraft operations and meeting operational requirements. The new displays offer quick plug-and-play conversion, are fully interchangeable and intermixable with existing CRT displays and require no changes to flight deck wiring or panels, and no crew retraining.

RECARO Aircraft Seating wins two major contracts from Skymark and Air China

Japan's Skymark Airlines will be fitting the RECARO 177 BL3530 short-haul seat in three of its Boeing 737-800 jets in an order of over 500 units. Skymark Airlines was founded in 1996 as an independent domestic airline and is headquartered at Haneda Airport in Tokyo, Japan. It currently has a fleet of 27 Boeing 737-800 aircraft which service 11 destinations within the country. The majority of Skymark's Boeing fleet is equipped with RECARO seats.

Air China has ordered 2500 CL3710 economy class seats from RECARO for their ten new Airbus A350 aircraft. China's flag carrier is the first operator of the A350 in Mainland China. The CL3710, RECARO's bestseller with over 250,000 orders worldwide, brings together all the German aircraft seat manufacturer's expertise and skill. The CL3710 offers Air China long-haul seating comfort for passengers in the economy class.



RECARO BL3530 seats
Photo: RECARO



Boeing 747-400
Photo: Jet Aviation

Jet Aviation gains EASA STC approval for ADS-B Out compliance on B747 in Basel

Jet Aviation has received EASA Supplemental Type Certification (STC) for ADS-B Out compliance for the B747 series aircraft, some two years ahead of EASA and FAA 2020 mandates. With this approval, Jet Aviation's MRO and Completions facility in Basel is authorized to configure and install ADS-B Out systems on B747 aircraft subject to specific equipment configurations. ADS-B Out compliance delivers digital information such as the aircraft's exact position, sensors and system accuracy and traffic and resolution advice to airborne and landed Automatic Dependent Surveillance-B (ADS-B) receivers. This enhances situational awareness for air traffic control of aircraft with ADS-B Out capabilities and is mandated by the FAA effective January 2020, followed by EASA in June 2020.

KLM UK Engineering and Alliance Airlines sign long-term heavy maintenance contract

AFI KLM E&M subsidiary has signed a long-term heavy maintenance agreement with Australia's major fly in, fly out (FIFO) air charter operator Alliance Airlines. A European leader in the regional jets and narrow-body aircraft market and having an internationally acknowledged expertise on the Boeing 737, Embraer 170/190, BAe146/Avro RJ, Fokker 70/100 and Airbus A320 Family, KLM UK Engineering is delighted to announce its contract with Alliance Airlines. KLM UK Engineering will be supporting Alliance Airlines with their Fokker 70/100 aircraft, providing heavy maintenance support in Norwich from summer 2018. Lee Schofield, Chief Executive Officer of Alliance Airlines, said 'We are very

pleased to lock in this long-term arrangement with KLM UK Engineering. We will be operating Fokker 70/100 for at least the next ten years and the maintenance support provided by KLM UK Engineering will assist us greatly during this time.

MTU Maintenance signs CFM56 engine MRO contract with Jazeera Airways

MTU Maintenance has signed a contract with Jazeera Airways. The three-year contract covers the maintenance repair and overhaul (MRO) of the CFM56-5B engines that power the airline's fleet of A320 aircraft. Jazeera Airways is MTU Maintenance's first airline customer in Kuwait and continues the MRO provider's successful trajectory in the Middle East market. Established in April 2004, Jazeera Airways is the first non-government-owned airline in the Middle East, and the largest private airline operating out of Kuwait.

Each year, Jazeera Airways serves over 2.2 million passengers, flying to 26 destinations across the Middle East, India and Europe.

Joramco obtains EASA Part 145 approval for Boeing 787 aircraft

Dubai Aerospace Enterprise (DAE) has released that its Jordan-based engineering division Joramco has successfully obtained EASA Part 145 approval for the Boeing 787 aircraft type. The approval comes after Joramco obtained similar approval for this type from the Jordanian Civil Aviation Authority (JCARC) and the Federal Aviation Administration (FAA) in April of this year.

Ameco provides A350-900 line maintenance for Air China

Ameco has started line maintenance service on an Airbus A350-900 aircraft for Air China. This is the first Airbus A350-900 delivered to a mainland Chinese carrier. Ameco has been approved by CAAC to provide Airbus A350-900s for Air China with line maintenance and scheduled check services. Ameco started Airbus A350 maintenance services in November 2015, when it offered its first Airbus A350-900 releasing service for an international customer in Shanghai. In recent years, Ameco has focused on new-generation aircraft maintenance. In May this year, Ameco completed the global first D-check on a Boeing 747-8F. Additionally, Ameco has been providing Boeing 737 MAX 8 and Airbus A320neo line maintenance services since 2017. Ameco's line maintenance service covers all the Boeing and Airbus in-service aircraft types, establishing a line maintenance network covering eleven cities in China.



Ameco starts to provide A350 line maintenance for Air China
Photo: Ameco

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Eurowings signs engine MRO agreement with SR Technics
Photo: SR Technics

SR Technics signs engine MRO agreement with Eurowings

MRO service provider SR Technics has signed a major engine maintenance, repair and overhaul agreement with Eurowings, the Lufthansa Group's low-cost airline. The two-year agreement was signed at the end of June 2018 and covers part of the airline's CFM56-5B fleet. Cooperation with Eurowings began in January of this year and in order to meet the demands of the carrier's large engine shop visit demands, SR Technics provided single engine shop visit offers to customize its services. This, combined with slots that met the carrier's planning needs and SR Technics' continuous support, was key to clinching the two-year contract. All work under the new agreement will be completed at SR Technics Zurich Airport facility and covers engine maintenance, repair and overhaul solutions, including airfoils repairs in SR Technics' Cork, Ireland facility, and the full parts and material management for more than 30 engines. As Eurowings is a major player among Europe's low-cost carriers, there is plenty of room for synergies with other areas of SR Technics moving forward.

Eastern Airlines selects Jetaire for FAR 25.981 compliance solution

Jetaire has delivered six Invicta kits to Eastern Airlines. The first installation took place in December 2017, with the sixth aircraft completed in late spring. Eastern Airlines is a 121 air carrier that operates passenger services to multiple destinations worldwide. The company has a fleet of nine Boeing 767 aircraft. Jetaire's Invicta system is a center tank flammability reduction and ignition

mitigation method solution, currently FAA-certified for B737, 737NG, B757 and B767 aircraft as well as the Airbus A320 family of aircraft. The system meets FAA requirements for 14CFR 25.981 and 121.117 compliance. Jetaire received a patent on the system in December 2017.

Embraer extends pool agreement to support LOT's fleet

Embraer Services & Support and LOT Polish Airlines, the national carrier of Poland, have signed an extension of the pool agreement to support LOT's fleet of 34 Embraer E-Jets. In a multi-year deal, Embraer's popular component support solution includes exclusive on-site stock for LOT as well as extended scope of engine line-replaceable units (LRUs) for E190/E195s. The program will support LOT's current fleet of 18 Embraer E170/E175s and up to 16 Embraer E190/E195s – it includes additional six Embraer E195s that LOT leased in 2018 from Nordic Aviation Capital (NAC A/S) already in operation and four new Embraer E190 that the airline will be operating from January 2019.

FAA approves AerTrak™ for Boeing 757-200 series aircraft

The Federal Aviation Administration (FAA) has issued a Supplemental Type Certificate (STC) for installation of AerSale®'s AerTrak™ system on Boeing 757-200 series aircraft (ST04011NY), to comply with the Automatic Dependent Surveillance-Broadcast (ADS-B) Operations rule, a critical part of the agency's Next Generation Air Transportation System

(NextGen). Beginning January 1, 2020, the FAA has mandated that aircraft operating in airspace defined by 14 CFR § 91.225 must be equipped with an ADS-B Out system that meets the minimum performance requirements of 14 CFR § 91.227. The FAA approved AerTrak™ for Boeing 737 NG series aircraft (ST04009NY) earlier this year. ADS-B provides enhanced navigational accuracy using precise tracking via global positioning satellite (GPS) signals. Reducing risk and improving safety, the technology increases navigational coverage, especially in remote areas beyond radar range. Additionally, ADS-B enables more-direct flight plans, thereby saving time, costs, and reducing emissions.

BAE Systems gains EASA certification for ADS-B (out) modification for BAe 146/Avro RJ

BAE Systems Regional Aircraft has completed the engineering and installation of an ADS-B (Out) modification on two Avro RJ aircraft belonging to two separate operators, leading to the awarding of European Aviation Safety Agency (EASA) Approval Certificate 10066079 for this major change modification. On the back of this approval, CityJet of Ireland, Europe's biggest Avro RJ operator, has placed an order with BAE Systems for modification kits covering its 13-strong fleet. Automatic Dependent Surveillance-Broadcast (ADS-B) is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked without the need for any action from the pilot or from air traffic control, providing an enhanced set of aircraft surveillance data to air traffic management. EASA has mandated that all aircraft weighing above 5,700kg, or having a maximum cruise speed greater than 250 knots, will need to be ADS-B compliant by June 7, 2020. In the United States the Federal Aviation Agency (FAA) has mandated ADS-B for January 1, 2020. Following the EASA award, BAE Systems is now working to ensure all European operators of the BAe 146/Avro RJ, as well as those operators outside Europe that fly into European airspace, are equipped with the ADS-B modification by the mandated date. It is also investigating the possibility of obtaining Federal Aviation Administration (FAA) and Transport Canada Civil Aviation (TCCA) validation of the modification for operators of the aircraft in those countries/jurisdictions. In addition, under its EASA Part 21G and J approvals, BAE Systems is also able to engineer and arrange the installation of ADS-B upgrades to other aircraft types and is currently evaluating solutions for other aircraft platforms.



Kerojet® Aquarius
Photo: Lufthansa

Lufthansa and BASF start In-Service-Evaluation of Kerojet® Aquarius

BASF and Lufthansa have successfully started the In-Service-Evaluation (ISE) for BASF's new water scavenger additive for jet fuel – Kerojet® Aquarius. The ISE marks an important step in the commercialization for this innovative additive. In the course of the ISE, BASF's additive solution is used on designated flight routes on Airbus air planes. On July 24, the ISE started successfully with an Airbus A340-600 between Munich and San Francisco. The advantage of the additive is that cost intensive measures to extract water at mandatory intervals can be reduced as water accumulation will be minimized. In addition, time consuming and expensive stop overs in maintenance can be avoided, thereby increasing aircraft utilization and making the operation more cost effective. "The implementation of Kerojet® Aquarius will constitute a milestone in improving both flight safety and aircraft usage. Applying Aquarius will avoid the presence of ice in wing tanks and further improves the margins of safety", says Thorsten Lange, Head of Fuel Purchasing Lufthansa Group. Kerojet® Aquarius is a unique and easy-to-use performance additive that supports water management in aircraft fuel systems as a critical safety and maintenance parameter for airlines. Kerojet® Aquarius disperses the water contained in kerosene, respectively the fuel tank, and the water is removed from the aircraft's fuel tank during the normal combustion process in the turbine. BASF and Lufthansa expect the full details of the ISE to be available by the end of the year, after which the broader commercialization of Kerojet® Aquarius is expected to start.

FL Technics Indonesia earns FAA Part-145 Air Repair Station certification

FL Technics, a global provider of integrated

aircraft maintenance, repair, and overhaul services, has earned FAA (Federal Aviation Association) Part-145 Air Repair Station certification #47DY377D emerging as one of Asia's MRO hotspots in the Jakarta's Soekarno-Hatta International Airport. Indonesia alone has approximately 60 MRO companies and only a few of them have FAA certification. This certificate allows FL Technics Indonesia to provide MRO services for aircraft registered in the United States in accordance with 14 CFR Part-145. Having an FAA Certificate makes FL Technics Indonesia a Western hemisphere-recognized MRO provider, ensuring services of the highest professionalism to operators originating from the U.S. or those with parts from the States. FL Technics Indonesia operates from a 20.000m² hangar and office space at the Soekarno-Hatta International Airport in Jakarta, Indonesia which employs around 200 aviation experts. The company can make full C and D checks as well as maintain Airbus A320 family and Boeing 737-300/400/500/600/700/800/900 aircraft.

STS AeroStaff and Technical Services merge operations

STS AeroStaff Services, the staffing company that started it all for the STS Aviation Group in 1984, rebrands amidst a merger of operations with its sister company, STS Technical Services. Moving forward, the consolidated companies will be known as STS Technical Services. The brand shift was made to better reflect the organization's current visions and future goals through the capitalization of synergies. The combined company will continue to provide the global aerospace industry with robust staffing solutions. However, the merger will now offer that same user community end-to-end workforce management and professional services to solve talent acquisition challenges within the ever-changing landscape of the aviation industry. "STS Aviation Group acquired Advantage Federal Resourcing back in 2012 and reshaped that brand into STS Technical Services," states Rick Koenig, President, STS Technical Services. "For the past six years, the STS Technical Services team and I have operated under the STS Aviation Group umbrella as a sister operation to STS AeroStaff Services. Our client base has traditionally been across the defense and industrial manufacturing industries. And when you boil today's announcement down to its bare basics, what you really have is a consolidation of services – a reshaped focus to now offer our award-winning workforce management programs as one organization and across multiple industries." Combining the operations of both professional groups will strategically place STS Technical Services in prime position to be recognized as one of the largest workforce

management solutions' providers in the country. Spearheading the day-to-day operations for STS Technical Services will be: Rick Koenig as President, Sachi Greene as Senior Vice President of Operations & Recruiting, Chuck Harrison as Senior Vice President of Sales, Brian Boje as Vice President of Recruiting and Billy Cook as Vice President of Client Solutions. Both brand and organizational changes will go into effect immediately.

TP Aerospace gets ready for "Green Sunrise"

Within the next two years, TP Aerospace will open 11 new locations around the globe to provide an even better service and move closer to its valued customers. The ambitious growth plan is called Green Sunrise. Adding to the existing seven sites, in 2020 TP Aerospace will be able to support its customers from 18 different locations all over the world. "We consider the entire world to be a market potential, but to continue to provide the best possible service, we need to be closer to current and potential customers," says Thomas Ibsøe, President and Founder of TP Aerospace, who confirms that TP Aerospace is simply reacting to market demands. "Our business and the service we provide build on a great level of flexibility and reliability towards our customers, and we are now at the point where we need to expand our global presence to keep up with the market demands and continue to deliver a high-quality service," he added. Ten of the new locations will be MRO facilities designed to support current and future customers in the regions. Majority of these will be in APAC, three will be in EMEA and two in the Americas. Additionally, a sales office and warehouse are being set up in Tianjin, China. TP Aerospace has already established legal companies in the U.K. and Malaysia and will soon be able to reveal more about these and other projects in Green Sunrise.

GE Aviation Asheville hits major production milestone

GE Aviation Asheville, a leader in delivering Ceramic Matrix Composites (CMCs) components for commercial aviation applications, celebrated the delivery of its 25,000th CFM International LEAP engine turbine shroud. Just five years after breaking ground, CMC production at the site is thriving. Shroud production rates for the LEAP program have more than tripled each year since the site opened. Today, these Asheville-produced shrouds have surpassed more than 1.5 million flight hours on the 800+ LEAP engines in commercial airline service. The LEAP is the world's best-selling jet engine with

a current backlog of more than 15,500 engines — translating to over 300,000 shrouds for the GE Aviation Asheville team to produce. CMCs are a super-material that is as tough as metals, but only one-third as heavy and can operate at 2,400 degrees Fahrenheit — 500 degrees higher than the most advanced alloys. When incorporated in today's commercial engines, CMC can save millions of dollars annually for airline fleets. A one percent reduction in fuel consumption can save more than US\$1 million a year for commercial air carriers. This next-generation CMC material technology being produced by GE Aviation will improve fuel efficiency at one to two percent.

Pratt & Whitney expands service network with new designated maintenance facility in Brazil

Pratt & Whitney Canada (P&WC) has appointed its third Designated Maintenance Facility (DMF) in Brazil, Helipark Manutenção Aeronáutica. Based in Carapicuíba, in São Paulo, this new DMF will service the PT6B-37A, PW206C, PW207D, PW207D1, PW207D2 and PW210A helicopter engines. This new appointment is part of P&WC's effort to grow its service network in the region and provide cost-effective, customized solutions to increase aircraft availability. Helipark Manutenção Aer-

onáutica will offer line maintenance support as well as mobile repair team (MRT) field services. As part of its expanding regional support strategy, P&WC appointed RICO Taxi Aereo and ABA Manutenção de Aeronaves as Designated Maintenance Facilities in 2017 to support PT6A customers in Brazil as well as local agricultural customers. P&WC's extensive support network in the region also includes the P&WC Do Brasil maintenance facility, the Covington Aircraft Engines Inc.'s PT6A Satellite, a P&WC parts distribution centre located in Sorocaba, seven Field Support Representatives (FSRs), and specialized Mobile Repair Teams.

News from Lufthansa Technik

LHT signs comprehensive A350 APU support for two Asian airlines

Two major Asian airlines entrusted Lufthansa Technik with the technical support for the HGT1700 auxiliary power units (APU) of their A350-900 fleets.

South Korean carrier Asiana Airlines signed a ten year long-term contract for the HGT1700 APUs of its planned fleet of 30 A350-900 aircraft. The services will be provided in the frame of an exclusive time and material agreement and will start in August 2018. All repairs will be performed in the workshops at Lufthansa Technik's headquarters in Hamburg, Germany. Vietnam Airlines also entrusted the maintenance of its HGT1700 APUs to Lufthansa Technik and signed an exclusive time and material contract. The national carrier of Vietnam will operate a fleet of 14 A350-900s. Lufthansa Technik is the official warranty station and partner of original equipment manufacturer Honeywell for the maintenance, repair and overhaul of the HGT1700 APU. The German company has a vast experience in APU overhauls and value-adding engineering services. Lufthansa Technik is also continuously collaborating first-hand with the manufacturers in the improvement of repair processes and related technologies.

Lufthansa Technik enhances services and support for Bombardier business aircraft in Russia

The Lufthansa Bombardier Aviation Services Moscow facility, based at Vnukovo – 3 (VKO), has been added to Bombardier's worldwide service network as a line maintenance Authorized Service Facility (ASF) and official parts provider for Russia. The support provided at the facility includes a seamless parts supply system, which is expected to directly benefit customers by reducing downtime and increasing aircraft utilization. Additional services offered at the facility include local stock of parts in high demand, full-scale line maintenance services to all owners and operators of Bombardier aircraft within the region, performance of warranty work and AOG services. The facility will provide support for Bombardier's Learjet, Challenger and Global aircraft in the region. Lufthansa Bombardier Aviation Services VKO will procure parts and arrange for the immediate clearance through Russian customs and transportation to the Moscow facility to ensure the required parts are on-hand and immediately available when needed. Along with its cooperative partner VTS Jets, Lufthansa Bombardier Aviation Services VKO provides full-scale line maintenance services to cus-

tomers in Moscow. AOG services are available throughout Russia and the CIS region.

Norwegian signs comprehensive engine services contract with LHT

The Norwegian Air Shuttle Group and Lufthansa Technik have signed a contract extending an existing Total Engine Support (TES®) contract. The agreement, signed on September at the airline's headquarters in Oslo, covers all-inclusive services for the CFM56-7B engines powering the airline's current fleet of 115 Boeing 737-800 aircraft. According to the contract, for the next five years Lufthansa Technik will cover all planned and unplanned shop visits at its highly dedicated CFM56 engine shop in Hamburg, Germany. The agreement also includes a far-reaching engine lease management. Lufthansa Technik will secure the leasing of spare engines for Norwegian to ensure the availability during peak overhaul periods. In addition, the contract includes the regular use of Lufthansa Technik's proprietary Cyclean® Engine Wash and on-site services such as Airline Support Team AST® Engines as well as the use of the portable aerotracer device.

Finance News

ST Engineering subsidiary to acquire 100% stake in MRA Systems nacelle manufacturer

Singapore Technologies Engineering (ST Engineering), has announced that its Group's U.S. subsidiary Vision Technologies Aerospace Incor-

porated (VT Aerospace) has entered into a conditional share purchase agreement to acquire a 100% ownership in MRA Systems, (MRAS) from General Electric Company. The purchase is based on a 100% aggregate purchase consideration of US\$630 million which will be on a cash-free and debt-free basis, and subject to closing adjustments for

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underfunded pension obligations, other debt-like items, transaction expenses, net working capital and other contingent adjustments. Based in Baltimore, Maryland, USA with approximately 800 employees, and a 90-year history in the aviation industry, MRAS is an established Original Equipment Manufacturer (OEM) of engine nacelle systems for both narrow-body and wide-body aircraft. It currently concentrates on the design, development, production and sale of nacelles, thrust reversers and aerostructures, along with the sale of spare parts. MRAS has a good combination of mature and next-generation nacelle programs including the A320neo powered by CFM International's LEAP-1A engine, which is Airbus' new-engine option for its A320 aircraft family, COMAC's C919 powered by CFM International's LEAP-1C turbofan engine and COMAC's ARJ21 powered by General Electric's CF34 engine. Similar to the A320neo LEAP-1A nacelle programme, the C919 and Global 7000/8000 are nacelle programmes that MRAS carries out in collaboration with Safran Nacelles.

Safran raises full-year 2018 outlook significantly

Safran has reported that for the first half of 2018 (H1 2018), adjusted revenue was €9.506 billion, an increase of 23.9% on a reported basis, including a four-month contribution of €1.516 billion from Zodiac Aerospace and €445 million of currency impacts. On an organic basis, adjusted revenue grew 10.1%. Adjusted recurring operating income was €1.386 billion (14.6% of revenue), an increase of 32.6% on a

reported basis compared to €1.045 billion (13.6% of sales) in the first half of 2017 (H1 2017). H1 2018 recurring operating income included a four-month contribution from Zodiac Aerospace amounting to €129 million. Excluding Zodiac Aerospace, adjusted recurring operating income grew 20.3%. Adjusted net income – Group share was €932 million (basic adjusted EPS of €2.17 and diluted adjusted EPS of €2.11). In H1 2017, adjusted net income – Group share amounted to €1.488 billion comprising €716 million of net income from continuing operations and €772 million of net income from discontinued operations. Free cash flow generation amounted to €820 million (including €25 million from Zodiac Aerospace), representing an increase of 23% compared with €666 million in the year-ago period. The growth was driven by higher cash from operating activities and lower capital expenditures, partially offset by an increase in working capital. At constant scope, H1 2018 free cash flow amounted to 63% of adjusted recurring operating income. Net debt position was €3.533 billion as of June 30, 2018, including the acquisition of Zodiac Aerospace. Safran (excluding Zodiac Aerospace) raises its outlook for 2018 as the strong momentum for Propulsion, Aircraft Equipment and Defense seen in H1 2018 should continue into H2 2018. As a result, compared to 2017 figures restated for IFRS 15, Safran expects: Adjusted revenue to grow on an organic basis in the range 7% to 9%. At an estimated average spot rate of US\$1.21 to the euro in 2018, adjusted revenue is expected to grow in the mid-single digits. Adjusted recurring operating income to grow around 20% at a hedged rate of US\$1.18 to the euro. Free cash flow to be comfortably above 50% of adjusted recurring operating income, an



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element of uncertainty being the rhythm of payments by state-clients. (€1.00 = US\$1.16 at time of publication.).

IAI publishes financial statements for second quarter of 2018

Israel Aerospace Industries, Israel's national defense and Aerospace company, has issued its consolidated financial statements for the quarter ended June 30, 2018. In the second quarter of 2018, the Company reported sales totaling US\$895 million, representing an increase of 4.2% in sales compared to the corresponding quarter of last year, as well as net income of US\$10 million and operating income of US\$30 million. The Company has cash balances in an aggregate of US\$1.6 billion and positive cash flows from operating activities totaling US\$104 million. Yossi Weiss, the outgoing CEO of IAI: "IAI concludes the second quarter of 2018 with the largest order backlog in its history, currently reaching almost USD 13 billion, also reflected in an increase in sales in the quarter, which is expected to continue into the next quarters. Concurrently, the growth trend in the various markets in which IAI operates is pursued, with emphasis on North America, Europe and Southeast Asia, and we continue offering our customers the most advanced tailored solutions for the constantly changing map of threats.

ST Engineering incorporates new company 'Keystone 5' for aircraft leasing business

Singapore Technologies Engineering (ST Engineering) has incorporated a new company, Keystone 5 Pte. (Keystone 5) in Singapore as a wholly-owned subsidiary of Keystone Holdings (Global) Pte. (Keystone Holdings), with a paid-up capital of US\$1.00. Keystone Holdings is a 50-50 joint venture held between ST Aerospace Resources Pte. and SJ Aviation Capital Pte. A holding company for aircraft leasing investments, Keystone Holdings has subsidiaries across various geographies with a portfolio of aircraft which are currently on lease to global airlines. Through Keystone 5, ST Engineering will grow its aircraft leasing business by acquiring more mid-life narrow-body aircraft that are currently on lease to airlines.

Air Lease Corporation reports second-quarter 2018 results

Air Lease Corporation has reported that revenues increased US\$17 million, or 4.4%, to US\$398 million for the three months ended June 30, 2018 from US\$381 million for the three months ended June 30, 2017. This increase was principally driven by the increase in the net book value of its fleet, partially offset by a reduction in sales and trading activity. For the three months ended June 30, 2017, Air Lease Corporation sold 17 aircraft, generating US\$18 million in gains, and for the three months ended June 30, 2018, the company chose not to sell any aircraft. Income before taxes for the quarter ended June 30, 2018 was US\$147 million compared to US\$156 million for the quarter ended June 30, 2017. As the company chose not to sell any aircraft in the second quarter of 2018, income before taxes decreased compared to the second quarter of 2017. Net income for the quarter increased to US\$115 million, compared to US\$101 million for the quarter ended June 30, 2017. The increase in net income in the second quarter of 2018 as compared to 2017 was primarily due to a lower income tax expense as a result of the U.S. Tax Cuts and Jobs Act (the "Tax Reform Act"), which, among other things, lowered the corporate tax rate from 35% to 21%, effective January 1, 2018. Adjusted net income before income taxes for the three months was US\$160 million, compared to US\$167 million for the three months ended June 30, 2017. The change in adjusted net income before income taxes was due to the decrease in the number of aircraft sold from 17 aircraft for the three months ended June 30, 2017 to zero aircraft for the three months ended June 30, 2018. ALC's fleet grew by 11.9% to a net book value of US\$14.9 billion as of June 30, 2018 compared to US\$13.3 billion as of December 31, 2017. As of June 30, 2018, our fleet was comprised of 271 owned aircraft, with a weighted-average age and remaining lease term of 3.8 years and 6.8 years respectively, and 49 managed aircraft. Air Lease Corporation has a globally diversified customer base of 93 airlines in 56 countries. During the quarter the company took delivery of 14 aircraft from its order book and four incremental aircraft from the secondary market, ending the quarter with 271 aircraft in its operating lease portfolio.



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Seabury Solutions, a subsidiary of New York-based **Seabury Capital Group** and one of the market leaders in providing information technology solutions for the aviation industry, has announced that **Ravn Air Group** had selected the company's Alkym® Management and Control System for Aircraft Maintenance. Alkym® is expected to streamline and increase the operating efficiency of the airline group's growing fleet, ensuring a substantial return on investment. The comprehensive implementation process has already begun, which will see Seabury Solutions provide the Ravn Air team the expertise in configuration and training of the system for the three organizations under the group. The pre-implementation workshop has already been completed to ensure the most effective deployment of the solution, tailored to the airline's requirements. On a phased basis, each of the airlines in the group will go live with Alkym. Ravn Air Group consists of **Corvus Airlines**, **Hageland Aviation**, and **Frontier Flying Service**. Combined, the companies have been flying for about as long as Alaska has been a state. Corvus Airlines, trading as **Ravn Alaska**, can be traced back to 1948. The group fleet consists of nearly 70 aircraft (Beech 1900s & Cessnas), which serve almost 100 destinations across the Last Frontier.

Satcom Direct (SD) is the newest Value Added Manufacturer (VAM) and service provider for **Iridium Certus** aviation products. SD will be designing and manufacturing new terminals for compatibility with the Iridium Certus service, while also providing the service direct to the business aviation community. The new products and services are being added to the SD Connectivity portfolio, integrating with the company's existing technology and software value additions to enhance the end-user experience. As a global leader in connectivity and avionics solutions, SD's mission is to synchronize the aircraft with flight operations. Iridium Certus will integrate with existing SD hardware and software, including the already popular SDR® Series and SD Hub Series of cabin routers, as well as the SD Pro® platform, to provide customers with features and capabilities like real-time data analytics, cyber security, account management and more. This partnership will help extend the reach of SD's existing customer base by offering fully global L-band broadband coverage, while creating a complete end-to-end customer experience for aviators. This latest announcement builds on the existing agreement between Iridium and **COMSAT**, an SD company which named COMSAT as an Iridium Certus service provider for U.S. Department of Defense (DoD) users in February this year.



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Investors buying up surplus engines and parts for the CFM56.
Photo: Magnetic MRO

The CFM56 is the most popular engine flying today. **Keith Mwanalushi** looks closer at the leasing market and maintenance trends for the powerplant.

Back in May, aviation consultancy firm IBA reflected on the overall stability of the engine market and flagged some strengthening market values for engines indirectly impacted by recent engine EIS issues. IBA highlighted growing awareness that some operators are extending existing leases on current engine options and this is keeping values buoyant whilst new generation technology enters the market. IBA also sees stronger short-term lease rates for the CFM56-5B/-7B due to tightening availability of supply and increased shop visits.

As with last year, the CFM56-5B/-7B and the V2500-A5 engines are still experiencing frequent trades and stable values with demand expected to grow as more engines are removed for maintenance. Due to the supply, demand and ease of access to credit, IBA have seen investors buying up surplus engines and parts, resulting in artificial inflation.



Rune Veenstra, Chief Business Officer at Aero Norway

"CFM56-5B/-7B short-term lease rates are also stronger than in the past two years, driven by shop visits and reduced availability of spare parts," said Kane Ray, Head Analyst - Commercial Engines at IBA.

At Stavanger-based Aero Norway, the company uses modern equipment and integrated technologies to ensure the engineering capabilities to cope with increased demand. "In addition, our ERP

system, combined with planning tools and the focus on streamlined paperless processes, keeps us organised and operating at maximum lean efficiency," declares Rune Veenstra, Chief Business Officer – Aero Norway. The company presently operates a 2-shift system with 155 employees, "we are forecast to ship 84 engines in 2018 and have the investment and structure in readiness for future growth," he adds.

The AJW Group is actively buying engines to meet the demand for USM from these engine variants, states Ian Malin, the Chief Investment Officer. "Admittedly, it's presently difficult to source engines at realistic prices to satisfy the demand that is expected to increase due to a shortage of engines and material on the market," he observes.

Over the past 12 months, AJW have bought several both unserviceable and serviceable -5B and -7B engines specifically to address this. The unserviceable engines go right into tear down to be sold through AJW's Parts, Sales and Support ("PS&S") division.

The serviceable engines are part of AJW Leasing's broader strategy to establish a pipeline of product supply. AJW Leasing burns off the greentime in the engines by providing the AJW Group's customers short term engine leasing support. "Once an engine reaches its cycle limit, it is then given to the PS&S division for disassembly and third-party sales.



Ian Malin, Chief Investment Officer, AJW Group.



MROs are working on buying as many assets as possible to meet demand.
Photo: Magnetic MRO

This strategy allows the AJW group to forecast the pipeline plan around expected engine removals and be more selective in its engine purchasing," Malin states.

Magnetic MRO are working on buying as many of these engine assets as possible to meet the demand in the market. "Arrangements have already been made with part repair vendors and teardown facilities, so we can prepare materials for sale as soon as possible," confirms Filip Stanisic, Head of Engine Management Department at Magnetic MRO.

Hans-Dieter Reimann, Director Engine Programmes for MTU Maintenance says the CFM56-5B should have its shop visit peak before the end of the decade and start to tail off slowly thereafter, though with a large installed fleet, there should still be strong demand throughout the next decade.



Filip Stanisic, Head of Engine Management Department at Magnetic MRO.

"MTU Maintenance is extremely well prepared for this wave of shop visits and the maturing assets, with both variants being served in Hannover, Germany and Zhuhai, China."

MTU performed close to 150 shop visits on -5B and -7B engines last year at its facilities in Hannover (Germany), and Zhuhai (China). "We are

currently increasing our capacity in response to rapidly growing customer demand, especially on the CFM56-5B. We expect to process close to 200 CFM56 shop visits in our shops in 2019, with a further increase in the following years."

Furthermore, MTU have a mature engines programme suited to maturing fleets in the longer term. The programme focuses on reducing costs for operators of ageing engines through cost-effective MRO alternatives.

Volo Aero MRO are adding capital equipment and training the workforce in anticipation of increased volumes, whilst at the same time focusing the business on where the future growth will come from regarding the customer base. "Using lean processes, we are working to increase our capacity and throughput without adding cost and headcount. In the North American market, the largest challenge we face is the labour market constrains," affirms Andrew Walmsley, President at Volo Aero MRO.

When looking at the market, it seems investors are buying up surplus engines and parts, resulting in artificial value inflation. And lease rates are being driven by shop visits and reduced availability of spare parts.



Hans-Dieter Reimann, Director Engine Programmes for MTU Maintenance

"Prices on tear down engines and green time flyers have increased this year on CFM56-5B/7B and until there is a change in demand we do not expect that to change in the short term," Walmsley anticipates. He observes that factors such as the delivery of new aircraft, the growth in single aisle fleets by the low-cost carriers and the relative low cost of fuel are all pushing the values upward.

On spare parts, Walmsley says the industry supply chain is being stressed by the significant ramp up on new engine deliveries as well as the increase in 5B/7B engine overhauls. "The suppliers are the same so are dealing with increased demand on two fronts with an added pressure of an ageing work force and a tight labour market."

Veenstra from Aero Norway reckons it is very difficult to find CFM56-5B engines available for lease in the marketplace and this engine type accounts for approximately 35% of Aero Norway's shop visit activity. "We are one of Europe's largest providers of CFM56-3 maintenance and with regard to this engine module swaps - and small visits that we call surgical swipes - account for circa 35% of our maintenance activity. We find there is generally many retired aircraft to generate enough surplus and spares for this engine type."

There are now more speculative financial investors than ever pursuing investment strategies for these assets, according to Malin. "In addition, the engine shops are actively buying available engines from the market directly and managing the disassembly of these engines, to procure USM to support their own shop visits. In the past, the MROs would focus primarily on their shop visit activity rather than investing in such whole assets."

While this activity is expected, given the demand for this material, AJW still sees plenty of opportunity in this space. "Financial investors won't necessarily have the capability, nor the appetite to develop a go-to-market strategy for selling off USM, whereby holding assets for lease is a much lower barrier to entry. In disassembling engines and selling off their constituent parts, often a spare parts partner is required, thus eroding sales margins to compensate such partners for their efforts," Malin adds.

Stanisic agrees that there is growing interest by the industry to buy engine parts and try to trade them, but most of them are selling them instantly, so this is probably not making some artificial extension of shop visit duration, he says. "It does however increase the price of parts. Lease rates are also increasing based on the fact that more and more engines are sent for repair these days and there are no additional spare engines on the market to cover the demand. We see the increase in lease rates because of current market supply and demand situation."

Experts say limited availability of spare parts could mean longer downtime during maintenance compounded by a longer wait and higher pricing for those parts, plus possible increases in lease rates too.

Veenstra agrees. Aero Norway has already seen that some of the used parts with limited availability have increased in price. "Limited availability of spare parts will inevitably increase TAT on engines in the workshop thus creating the need for more -5B lease engines. We are focusing on a flexible range of maintenance modules to cope with older aircraft that utilise the -3 engine. Our customers need to ensure they can remain in profitable operation for as long as possible - so we offer a workscope that provides enough EGT margin to match remaining EFC lives of LLPs in the HP modules."

The folks at AJW also agree, albeit partially. Malin says despite

heightened demand, markets are inherently efficient, and airlines will demand rapid turnaround times to satisfy their operations. "We do believe that the scarcity of these engine will cause the cost of parts to increase and as a result the investors in these assets will suffer from compressed margins. We expect speculative investors to move on to other opportunities and those asset managers who have the ability to extract value across the spectrum of an engine's life to remain successful during periods of more frequent engine shop visits."

Though as with every challenge, there are also opportunities. MTU together with its customers are always looking at alternatives. USM is one example, as is customised workscooping, which is used to avoid the removal of supply chain critical parts, wherever possible. "Furthermore, our high-tech EASA-approved repairs represent an alternative that also can significantly reduce costs as well as extend on-wing times as a way of keeping our customers flying," says Reimann.

MTU Maintenance is expanding its Zhuhai facility by 50% to a capacity of 450 shop visits per year by 2021 and are also expanding the throughput of its Hannover facility as part of a multi-pronged strategy to increase overall capacity throughout the network.

Aero Norway is continuing investment in apprentices supported by the Norwegian Government and increasing capacity to manage more engine overhauls and smaller shop visits. Aero Norway is also investing in inventory of spare parts to reduce TATs. The recent announcement that the International Air Transport Association (IATA) has formed an agreement with CFM International (CFM) to improve the opportunities available to third-party providers of engine parts and MRO services on the CFM56 and the new LEAP series engines will have a great impact on Aero Norway and we are ready to absorb this.

Magnetic MRO are working on establishing more capabilities to strengthen their position in the market and make more complicated on-site repairs. To achieve this, the company is making additional investments both in tooling and training fields.

The CFM56-5B and -7B platforms are going to be a considerable source of repair work in the coming years particularly with the OEM MRO facilities clearing space for the next generation LEAP platforms. Walmsley sees this platform as an area of growth and opportunity for Volo Aero MRO moving forward. "We have recently invested in increased capabilities for grinding so that we can support larger parts off these engine types."



Andrew Walmsley, President at Volo Aero MRO.

In the hot seat.....

Itsik Maaravi, CEO, ePlane USA

AviTrader MRO: Can you please tell us the story behind ePlane?

Maaravi: ePlane was founded in 2015 by a strong team of technology and aviation pioneers. Our proven record includes iMesh Online Music Service, Viber Mobile Messenger, and partnerships with Google, Yahoo and Ask.com.

We have set out to streamline and simplify all aspects of the buying-selling-repairing process by creating a truly intuitive e-commerce experience

Today, ePlane is a free one-stop-shop marketplace for aircraft parts and repair services that caters for airlines, OEMs, distributors, MROs, and brokers. As a buyer, you can search for part numbers, compare items, chat directly with vetted vendors, send and receive documents, and finalise deals online.

Our vendors enjoy a global exposure to a broad network of qualified customers, who are ready and motivated to buy factory-new, new-surplus, overhauled, repaired and as-removed parts.

After only three years in business, I can wholeheartedly say that we have managed to completely consolidate all procurement stages into one user-friendly platform, substantially reducing the average source time.

AviTrader MRO: What, in your opinion, are the challenges that airlines face today regarding parts procurement?

Maaravi: It's no secret that all industries are going online, seeking to leverage technology

for increased productivity and efficiency. The aviation industry is no exception. Today, a successful procurement strategy cannot rely on old procurement methods only.

We witness a lot of online/offline irrelevant and incomplete listings, and when an airline needs a mix of rotables, expendables, and consumables – things become even more complicated. The challenge is to find a “real” part with all its documentation and be able to purchase it in a quick, easy, and efficient way. We overcome this problem by syncing the inventory to the seller's ERP and providing a user friendly platform.

AviTrader MRO: How can an online platform change the way airlines source aircraft parts?

Maaravi: The right platform can revolutionise an airline's sourcing process. The time of endless phone calls, fax messages, and tedious emails just to buy a part is soon to be over. Parts and services can be found and purchased literally within minutes. When you search for aircraft parts through an online marketplace, all of the information you need (availability, condition, location, etc.) is consolidated into a single interface. You can cross-reference part numbers automatically, seamlessly send RFQs, and access analytical tools to help you assess your productivity and define trends. In addition, all your activities are logged for future use.

AviTrader MRO: Tell us a bit about ePlane's new features: ePlane Autopilot and Real-Time Sync.



Itsik Maaravi, CEO, ePlane USA

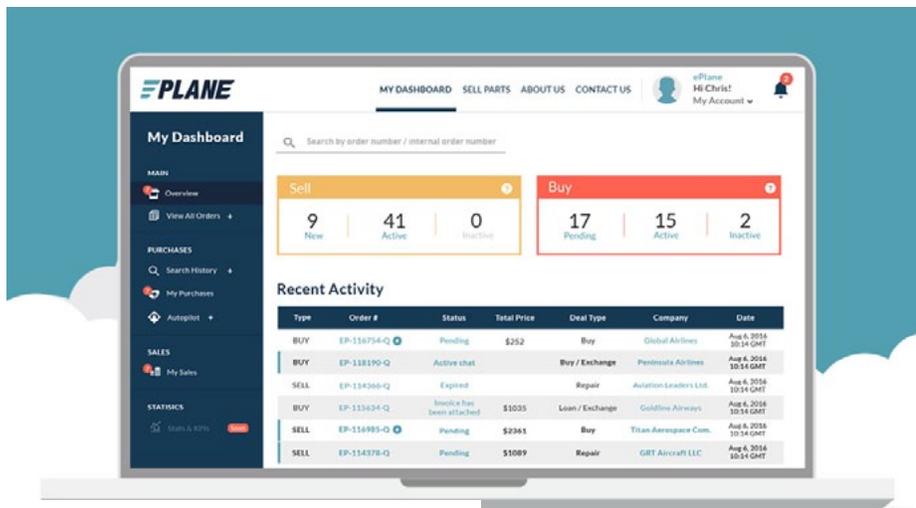
Maaravi: ePlane Autopilot fully automates your RFQ process and reduces your average source time with one click. At the heart of Autopilot is a powerful machine-learning algorithm that identifies your needs and automatically sends RFQs to relevant sellers on your behalf. All you need to do is upload your demand list and let ePlane Autopilot take care of the entire process.

Real-Time Sync is a feature we have recently built. Upon buyer's manual or automated RFQ, our platform connects with the vendor's system (Spec 2000 protocols or any other customised EDI connectivity). Under these protocols, ePlane obtains real-time availability and pricing details, personalised per buyer. This way, each buyer can see information which is relevant to its agreements.

AviTrader MRO: What can we expect from ePlane in the near future?

Maaravi: Our goal is to become the industry's standard tool for data, procurement, and aftermarket parts.

We will introduce paid ancillary services such as Finance, Logistics, AOG Customer Support, and Advanced Statistics and Analytics. ePlane users will be able to manage everything from sign in to check out: payment collection, transaction insurance, advanced payments, integrated fleet management, logistics and supply chain management, etc.



eplane is a marketplace for aircraft parts and repair services.
Photo: eplane

Engines for growth



Based in Dallas, BeauTech opens its first European office in Frankfurt this year.
All photos: BeauTech

BeauTech Power Systems, LLC (BeauTech) was founded by Lee Beaumont in 2011 with the objective of providing low cost engine operating solutions for regional and narrow body aircraft operators. BeauTech uniquely combines engine leasing, engine sales and repair event management to provide flexible and cost efficient CF34 and CFM56 engine solutions. The company's headquarters is in Dallas, Texas, with an additional sales office in Frankfurt, Germany.



The E-Jet airframe platform continues to be the largest tradeable asset.

BeauTech's lease portfolio is currently 100% GE / CFM consisting of all CF34 engine model variants operated on the CRJs and E-Jets as well as CFM56-5B and -7B engine models for narrow body operators. BeauTech acquires engines directly from the OEM, harvests engines from aircraft purchases and occasionally acquires engines with a lease attached from a competitor. The blend of these activities has allowed BeauTech to efficiently grow its engine lease portfolio at the lowest cost while maintaining top quality assets.

BeauTech's lease portfolio has grown more than 60% per annum in recent years with operators overwhelmingly embracing their unique low-cost, high quality engine operating proposition. BeauTech's primary strategy is acquiring off-lease and stub lease aircraft in order to harvest engines for its lease portfolio. The E-Jet airframe platform continues to be their largest tradeable asset, contributing to record 2018 revenues which are expected to surpass \$300 million. To keep pace with demand, BeauTech recently doubled its sales and technical teams, hand selecting some of the best people in the industry. All these efforts have allowed BeauTech to operate at one of the highest levels of profitability per asset dollar employed and

achieve exceptional revenue per employee.

As an example of assisting airlines to minimise their cost of operations and streamline fleet transition, in August 2018, BeauTech entered into an agreement with Air Canada (ACA) to purchase their entire fleet of 25 Embraer E190 aircraft and lease back the aircraft through the exit period. This allowed ACA to immediately monetise the fleet and use the funds to begin the acquisition of their replacement Airbus 220's. BeauTech partnered with Nordic Aviation Capital (NAC) to reposition the majority of these Embraer 190 aircraft into various emerging markets while back-stopping NAC with teardown support for those aircraft not expected to be re-leased following their return from ACA. The CF34 engines from the retired aircraft will be added to BeauTech's engine lease portfolio for support of the emerging fleets, with the related airframes reduced to spare parts.

BeauTech has rapidly grown its CF34 engine lease portfolio to a position where it is one of the largest CF34 engine leasing companies in the world. Their customer base ranges from airlines, Maintenance Repair and Overhaul (MRO) companies and the OEM itself. In support of its growth, and to best serve their European customer base, BeauTech is opening its first regional office in Frankfurt, Germany in October 2018.



BeauTech provides low cost engine operating solutions.

Managing the asset to the very end

Extending asset life is a carefully managed business.
All photos: Magnetic MRO

Micromanagement of an aircraft on a subassembly level is the key to maximising the value of aircraft at the end of their operational lives. "Sweating the asset" is a well-used phrase to describe the practice of getting every bit of value from a possession or property. In aviation, the asset referred to most is an aircraft and airlines certainly like to ensure they get the maximum value from the asset in which they have invested.

That usually means high utilisation. After all, an aircraft makes money for an airline by being in the air. But what about the asset as it ends its operational life? How much value can be extracted at that point of its life cycle?

It has been said that there's no such thing as an aircraft per se. It's several thousand components joined together at a point in time and flying. When a 'collection' stops flying, not every one of those components is worn out, so there is value within those waiting to be released.

Decommissioning an aircraft and disassembling it – also known as teardown is a specialist task. Done properly it enables many parts and components to be put back into operation, either via the previous owner's own spares stores or via sale on the open market.

Risto Mäeots, CEO of Magnetic MRO, believes that teardown can be taken to a higher level, viewing the whole process as more than a mere teardown. "The big challenge for all the owners and lessors is to maximise the yields on the end-of-life assets," he explains. "What was done less well was, to put it one way, the micromanagement of the aircraft on a subassembly level.

"The aircraft is often looked at as a whole [when it comes to disposal]. There is very little of what we call a 'Lego-project'. For example, say you have a package of four Airbus A320s coming out of operation. One has high cycles on the airframe, so it needs to pass the

extension programme on the fuselage; another one has run out its LLPs, and there is no point in organising a full overhaul because it's just going to be too costly. Another one might have landing gear and the fourth perhaps APU issues," Mäeots elaborates.

"We have done several analyses and projects where we have helped an airline – in a situation such as this – to put together a Lego-project. We have used a fuselage which had enough life, refreshed its livery, installed a new cabin, taken engines from another aircraft and landing gears from a third one, and we have made an aircraft which would serve maybe another 24 months until the next C-check is due.

"On an A320 that could be an additional \$200,000 a month for 24 months, so you're talking about \$4-5 million in extra revenue," Mäeots emphasises. "After that, we will gladly take over and do the tear-down. We can even quote to the airline a guaranteed buy-back price after the aircraft is run out."

Embracing end-of-life assets

Mäeots points out that while many lessors are content to operate in the "mid-life lease area", very few want to be in the end-of-life lease business. "That would mean that the lessor also becomes an engineering of-



Risto Mäeots, CEO of Magnetic MRO



At Magnetic MRO, end-of-life asset management of aircraft will move into a new generation of MRO services.

“fice,” he observes. “Instead of running the financial numbers, you’d need to start analysing the risks you have on the end-of-life asset. Suddenly, you need a huge amount of engineering knowhow.

“That’s the spot we have filled,” he declares, while admitting that Magnetic MRO developed this role as a maintenance provider which added asset management knowhow. “Very rarely do you see MROs out there which have both the MRO mindset and approach plus a capability to analyse the asset from a financial perspective. Those who master it will be better off, because there is a vast amount of ageing assets coming every day.”

The numbers of aircraft retiring over the next few years is indeed considerable. Richard Brown, principal at consultancy ICF, noted in his presentation *Aerospace Market Dynamics & Trends*, given at the 2018 Farnborough Air Show, that around 9,100 aircraft are expected to retire over the period from 2017 to the end of 2026. Of these, 23% will be from the A320 family and 13% from the 737NG family.

With plentiful feedstock over the coming years, the next thing to consider is the level of usable parts which can be retrieved from an aircraft teardown. C&L Aviation Services takes teardown very seriously and continues to offer this service and parts retrieval.

“Our customers normally provide us with a harvest list of parts per aircraft that they want us to remove for them, so we do not always get involved with market analysis or risk analysis in those cases,” reports C&L’s SVP business development MRO, Calvin Tuit. “As a service to customers, we do offer advice regarding the parts that they may want to remove during a teardown. Harvest lists normally contain between 600 to 1,100 parts depending on the customer and how many parts they feel that they can either use for their own operations, or sell to third parties.”

Desired outcomes

Magnetic MRO’s Mäeots uses a consequence of the company’s recent change of ownership to a Chinese investor as an example of what most asset managers want from the end-of-life process. “In China we regularly see 15-year-old assets coming out of operation. The airlines generally have quite new fleets there, but 15 years old is

good in Europe,” he remarks, noting that this means there is considerable life left in the airframe.

“Certainly under the new ownership structure, a gateway has opened for us into Chinese markets,” the CEO continues. “The first difference that comes into mind is that airlines are seeking risk and reward sharing solutions.

“I think it is a matter of time before we see airlines looking more actively to partner-up to such programmes. There may not be financial gain in the short-term, but there will be long-term visibility and access to assets before they become publicly available.

What to tear down

Experience clearly plays a part, but market analysis and risk assessment also influence which aircraft to disassemble. “C&L has torn down aircraft to support our own MRO shop and to sell as used parts to our customers,” Tuit remarks. “The decision to tear down an aircraft can depend on a number of factors, the first being whether or not the aircraft is in our long-term plans to support both parts and maintenance.

“Other factors affecting our decision to tear down an aircraft for internal purposes could be the aircraft type and number in operation, the condition of the aircraft being considered, the cost of new versus used parts, the market value and demand for the aircraft versus the market value and demand of the parts plus the age of the aircraft type,” Tuit adds.

Setting standards

Teardown and parts recovery, as noted, has to be handled carefully as there are environmental issues to consider. There is also the task of keeping the documentation of each re-usable part in order. The overall teardown process is not yet deeply regulated.

“The issue is important enough for IATA to have a group called the Aircraft Decommissioning Industry Group (ADIG) which is putting together guidelines that will be pushed forward to tackle industry concerns over end-of-life assets and the decommissioning for airframes,” Mäeots comments.



There is significant opportunity in aircraft asset management.

ADIG's role is to develop best practices to manage aircraft decommissioning in a controlled process, taking into account safety, economics and the environment. These best practices will then be complementary to those already established for the dismantling and recycling process itself.

"It will become an industry practice, just as you have EASA Part 145 regulating the MRO industry or Part 147 regulating training," the CEO adds.

This IATA document will thus provide a global benchmark for decommissioning. "Until now, most of the end-of-life management, the teardown process and the environmental issues have been a local country's concerns," he says.

Profiting from parts

Once teardown is completed, the options for how the recovered parts are used can range from the customer taking them back for stock for their own use, marketing the parts on the open market via outright sales, deploying them in an exchange pool, or continuing their life as leased assets.

KLM UK Engineering, for example, sticks to the first of those for its business model. If the company disassembles an aircraft, the recovered parts are requested by the customer and only the teardown work is carried out. Having not purchased to disassemble and re-market for some time, the company's service these days is purely on-demand.

Magnetic MRO has gone in the other direction. "Mostly we acquire the assets and keep ownership of the parts before selling them," Mäeots confirms. "As I mentioned though, some airlines are looking for partnerships. Buying, tearing down and selling is straightforward.

In a risk-and-reward-sharing programme though, we can evaluate assets in a much more optimistic way," the CEO continues. "Right now, we have about 80 part numbers on a narrowbody aircraft which stand to carry a price tag."

In a partnership though, some low-value parts with life left could find a place with the operator. "This is what we are discussing with potential partners. Reusing will certainly happen more, especially now that the A320ceo-to-neo change has happened. There is little difference between the A320ceo and the A320neo.

MRO – the next generation

Magnetic MRO is convinced that its new approach to end-of-life asset management of aircraft is actually a move into a new generation of MRO services. "We saw 10 years ago the MROs being the cheap labour providers. To survive they transformed into total technical care providers," Mäeots elaborates. "I think the transition to a third phase will see MROs raising capital and entering into asset management tasks in addition to their powerhouses. Few understand the underlying risks of end-life. We praise it."

Mäeots believes that asset owners/managers/airlines/lessors will be equal beneficiaries in the new services which Magnetic MRO is offering. "The real gain will be in the partnerships rather than getting rid of the asset via individual tenders. It's the risk-and-reward-sharing programmes where we will see both parties – airline and MRO provider – benefit in the long run," he comments.

"We are on the brink of the third generation of the MRO industry," Mäeots concludes.

Source: Magnetic MRO



Stefano Bortoli

ATR, with the unanimous support of its shareholders Airbus and Leonardo, has appointed **Stefano Bortoli**, currently President of the ATR Board and Senior Vice President Strategy, Marketing Development and Sales of Leonardo Aircraft Division, as new CEO of ATR with immediate effect. This follows the announcement last week by Airbus appointing **Christian Scherer** as its Chief Commercial Officer. Stefano Bortoli has a deep knowledge and understanding of the company, the aviation industry and the regional market. He held various top management positions and has a very international background, providing the right profile and experience to continue the positive developments at ATR.



Tom Vecchiolla

ST Engineering has appointed **Tom Vecchiolla** as President & CEO (Designate) of its U.S. Headquarters, VT Systems. He will take over as President & CEO from **General (Ret.) John Coburn** on December 1, 2018, who will relinquish his CEO position but remain as non-executive Chairman of VT Systems. Gen. Coburn has been helping VT Systems for 17 years since it was set up in 2001 to support the Group's overseas expansion. Today, the U.S. is the Group's single-largest market outside of Singapore, with operating companies and major operations in 16 cities, contributing more than 20% to Group revenue.

GA Telesis has appointed **Mauro Francazi** as Director of Business Development – Europe. Francazi brings nearly 30 years of aviation experience in leasing, finance, procurement and fleet management. He joins GA Telesis from Alitalia, where he served from 1989 in many roles including Director of Irish entities of the Alitalia Group. His most recent position was Head of Fleet and Technical Procurement where his responsibilities included managing a fleet of 118 aircraft. Joining the GA Telesis Asset Transaction Group, Francazi will be responsible for transaction origination, developing new and maintaining existing relationships with airlines, financial institutions, leasing companies, OEM's and MRO's in Europe and beyond.



Igor Zahradníček

Czech Airlines Technics (CSAT), a daughter company of the Czech Aeroholding Group which provides aircraft repair and maintenance services, has appointed a new Vice-Chairman of the Board of Directors. Effective September 3, 2018, **Mr. Igor Zahradníček** will be in charge of finance, development, procurement and logistics at the company. "Czech Airlines Technics is a company with a long tradition where unique high-level expertise goes without saying and quality and safety are not subject to discussion, but a must. Becoming a part of such a company's further growth and this team is a challenge for me as a manager and I therefore look forward to working at CSAT," Igor Zahradníček, the new Vice-Chairman of the Czech Airlines Technics Board of Directors, said. For the last nine years, Igor Zahradníček worked as the CEO of TOUAX s.r.o., a producer and designer of modular buildings. In the 1990s, he held several management positions at PepsiCo and later was also in charge of DHL Logistics and Maersk Logistics in the Czech Republic.



Jon Sharp

Jon Sharp will retire at the end of this year from his long-serving position as Engine Lease Finance's President and CEO. Sharp founded the Company in 1989, pioneering the spare engine operating lease industry. After 28 years of continuous evolution and growth, the Company now offers the complete range of engine leasing services from long-term operating leases through to short term AOG support and the provision of engine parts through its investment in INAV, the Chicago-based parts provider.

ELF owns and manages some 300 engines valued at over US\$2.7bn with a current customer base of over 80 customers in 43 countries. ELF's Chief Operating Officer, **Tom Barrett**, will succeed Sharp as President and CEO. Barrett, who qualified as a chartered accountant with KPMG in 1989, has been with ELF since 1990 and in that time has worked closely alongside Sharp in developing the company to its current position of market pre-eminence. In addition to this appointment, ELF's Chief Commercial Officer, **Joe O'Brien**, will become Deputy CEO, supplementary to his current role as CCO; O'Brien has had 22 years involvement with ELF. Jon Sharp will continue as a part-time consultant to ELF after his retirement and will continue to share his industry experience by writing press articles and by speaking at conferences.

Dallas Aeronautical Services has appointed **Terry Cooper** as its new General Manager and has welcomed him to the DAS team. Cooper brings more than 30 years of aviation knowledge to DAS. His experience ranges from working with bonded structures and sheet metal assemblies, to quality control, both in the corporate and commercial markets.

Aircastle has announced the promotion and appointment of **Jim Connelly** as Chief Accounting Officer. Connelly has been Aircastle's controller since January 2013. He joined Aircastle in May 2007 as Assistant Controller, Operational Accounting. Prior to joining Aircastle, he was with Lehman Brothers as Controller, beginning in January 2001. He received a B.S. in Accounting from Syracuse University.



Lee Burgess

Monarch Aircraft Engineering (MAEL) has promoted **Lee Burgess** to Head of Maintenance and welcomed **Keith Earnden** back to the company as Interim Head of Engineering. As Head of Maintenance, Lee Burgess will be in charge of managing MAEL's heavy maintenance facilities in Luton and Birmingham, as well as its numerous Line Stations across the UK and Europe. He will also lead MAEL's new Component Maintenance Centre, which is due to open in Northampton later this year. Keith Earnden returns to MAEL to become Interim Head of Engineering, with responsibilities including leading the Engineering team, as well as the Continuing Airworthiness Management Organisation, Part M, and Planning. He re-joins MAEL from Flybe where he was Director of Maintenance and Engineering, and prior to that with Marshall Aerospace in 2015. He previously worked with MAEL from 2010 to 2015.



Keith Earnden



Brendan Curran

Boeing has named **Brendan Curran** president of Boeing AvionX, an organization formed last year to pursue the development and production of avionics and electronics systems. Curran, who has more than 20 years of aerospace industry leadership, joins Boeing from Crane Co., where he served as president of the Aerospace & Electronics Group. In this newly created position, Curran will work across Boeing's commercial, defense and services businesses to further ma-

ture the company's aftermarket strategy. He will help advance overall capabilities of the Boeing AvionX organization to provide greater value to customers while driving long-term services' growth. Curran will report to **Stan Deal**, president and CEO of Boeing Global Services.

Lockheed Martin's board of directors has approved the appointment of **Michele Evans**, as executive vice president of the aeronautics business area, succeeding Orlando Carvalho, who intends to retire later this year. Evans' appointment is effective Oct. 1, 2018. Evans has more than 30 years of industry experience and currently serves as deputy executive vice president for the aeronautics business area. She is responsible for all aeronautics programs, including F-35, F-22, F-16, C-130 and Advanced Development Programs.

Other News

Virgo Investment Group is expanding its aviation business via **Zephyrus Aviation Capital**. Several former **CIT Aerospace** executives have partnered with **Virgo** to transform **Zephyrus** into a full-service platform and the Company is completing a large portfolio acquisition. Zephyrus is a fleet management solutions provider to lessors and commercial airlines around the world. The Company is focused on older and end-of-life aircraft and engine leasing & trading. Zephyrus is backed by funds managed by Virgo, who has been investing in aviation since 2010. With offices in Dublin and Fort Lauderdale, Zephyrus has assembled a team of seasoned industry veterans. Tony Diaz, former President of CIT Aerospace, and Damon D'Agostino, former Chief Commercial Officer of CIT Aerospace, who previously worked together for over twenty years, have joined the Company as Chairman and President & CEO, respectively. Along with two other former CIT colleagues, the team will lead the next phase of development and growth of the Zephyrus enterprise. The Zephyrus team has significant experience having previously completed over 850 aircraft sales, leases and deliveries with over 150 distinct customers in 49 countries over the past decade alone.

L2 Aviation has received an FAA Supplemental Type Certificate (STC) for the installation of the **Rockwell Collins** Iridium SATCOM system on Airbus A330-200 and A330-300 aircraft. While L2 has achieved similar STCs for the Iridium SATCOM installation on other airframes (including the 737, 747, 757, 767 and 777), this latest STC represents the first Iridium ICS-220A/IRT-2120 approval for Air Traffic Service (ATS) Safety Voice service. The Safety Voice service provides aircraft operators with an alternative to existing HF radio systems, replacing one with a secure satellite-based option for long-range communications. The Iridium SATCOM installation includes single and dual channel, ATS Safety Voice, and data link capability. Addition-

Mark Smith, Group President STS Aviation, will oversee the operations of newly launched STS GSE Services alongside **Gabriel Girard** who has been promoted from his former role as Operations Manager for STS Mod Center to Director of Operations for STS GSE Services. STS GSE Services, a company based out of Melbourne, Florida is dedicated to offering cost-competitive maintenance, refurbishment, spare parts and warranty services to the aircraft ground support equipment market. In addition STS GSE Services looks forward to soon troubleshooting and repairing aircraft ground support equipment at STS' growing network of 30+ line maintenance stations across the United States and the Bahamas.

HAECO Americas, a wholly owned subsidiary of the HAECO Group, has released that **Bill Collins** will join the company's leadership team as President of Airframe Services. In this role he will oversee the Maintenance Repair and Overhaul (MRO) business segment of HAECO Americas. Collins has more than 30 years' experience in the aviation industry, leading MRO operations. For the past year, he has been developing the MRO practice at ICF, a global consulting and technology services provider. Prior to this, he worked with the Bristow Group as Senior Vice President of Flight and Technical Operations, and with American Airlines as Corporate Vice President of Technical Operations, overseeing three sites and 1,000 aircraft. He has also held senior sales and operational roles within GE Aviation.

ally, L2's design for this STC also incorporates a multi-purpose doubler provisions that will allow the installation of either the **Inmarsat** HELGA, Low Gain Inmarsat antenna or an ALGA antenna, defined by ARINC 771, supporting Iridium Certus services without having to make additional structural modifications to the aircraft.

Danish MRO **Skyways Technics** has announced a new strategic partnership with US-based MRO **INAir Legacy Avionics**, for the continuous support of legacy cockpit avionics for **ATR** and **Bombardier** bi-turboprop operators. With thirty years of experience in cockpit avionics smart repairs and solutions, INAir keeps consolidating its market-leading position, benefiting from highly skilled staff performing beyond-CMM-quality repairs, privileged and secured access to spare parts, and superior customer service. A formal partnership through an exclusive representation agreement for Europe, Asia Pacific, Africa and Middle East region, appeared natural and was recently signed between the two companies, which are sharing a 'best value for money' philosophy and aiming to provide the best service possible to regional carriers on CRT displays, which represent a significant maintenance cost-driver. Operators in the selected regions can already take advantage of cost-efficient repair solution and dedicated support via a pool of selected units placed in Europe and Malaysia.

Subsequent to the end of the first quarter of fiscal year 2019, **Viasat**, a global communications company, was selected to outfit 100 new **American Airlines** Airbus A321neo aircraft with its IFC and Wi-Fi entertainment systems. Viasat will also provide logistics support and network monitoring for its systems on these aircraft. Delivery of these airplanes is expected to begin in early 2019.