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Opinion

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Technology is at the heart of Airbus' 20-year forecast

Senior officials from Airbus gathered in London recently to give their outline on how the aviation industry will shape up in the future, which made for some interesting insight. Airbus' forecast for aviation over the next 20 years emphasised, in particular, technology, aviation sustainability and increasing passenger demand.

Airbus forecast the need for over 39,000 new aircraft in the next 20 years and the interesting aspect of this forecast is reflecting today's evolving aircraft technology. Airbus has simplified its segmentation to consider capacity, range and mission type. For example, a short haul A321 is Small (S) while the long-haul A321LR or XLR can be categorised as Medium (M). While the core market for the A330 is classified as Medium (M), it is likely a number will continue to be operated by airlines in a way that sits within the Large (L) market segmentation along with the A350 XWB.

Airbus services forecast mentions new technologies such as predictive maintenance including an increase in the number of connected aircraft that will lead to growth in digital services. It will bring new opportunities to deliver services that will benefit not just airline customers but also the passenger. Access and analysis to data from aircraft and their operations will be at the heart of these innovations.

Predictive maintenance is now included as part of the digital solutions in Airbus' global services forecast.

Editor

Photo: British Airways

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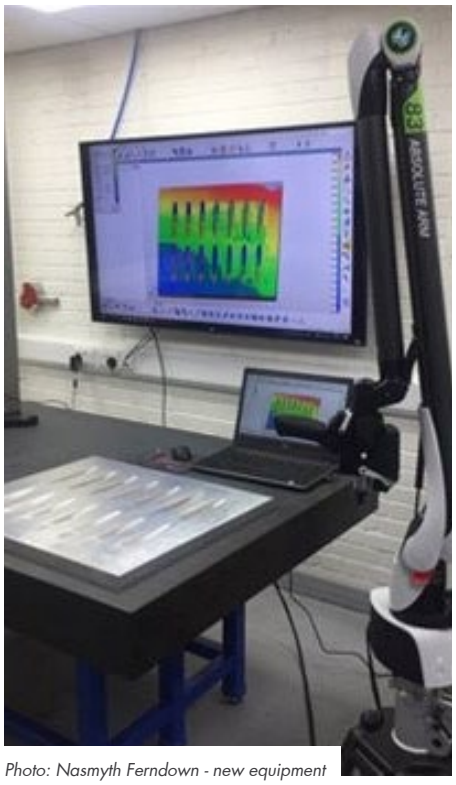


Photo: Nasmyth Ferndown - new equipment

Nasmyth Ferndown makes significant investment in new component inspection and design equipment

Nasmyth Ferndown, part of the global engineering Nasmyth Group, has made a major investment in new equipment which will significantly enhance its component inspection and design process. The new Hexagon Absolute laser arm will improve the efficiency of the inspection process by approximately 50%. Providing much greater accuracy across more dimensions supported by the RS5 Laser Scanning/Probe kit, compared to traditional equipment, enables a more accurate comparison with drawing requirements. The software can also automatically produce full-dimensional reports, saving a great deal of time compared to the current manual creation of such reports. This new equipment will also help Nasmyth Ferndown to further enhance its international reputation for the reverse engineering of legacy components for the aviation industry. For aircraft dating back to the 1950s, where drawings are not available, the only way to remake a particular part is to physically redesign it from a sample. This process will now be significantly easier with the introduction of the latest scanning equipment. Nasmyth Ferndown is a dynamic and forward-thinking engineering support partner for many of the world's leading OEMs across a range of complex sectors.

Joramco signs new maintenance agreement with ICBC Aviation Leasing

Joramco, the Amman-based MRO and ICBC Aviation Leasing, a leading leasing company based in China, have signed a heavy maintenance agreement. Joramco will perform a redelivery check including a full paint livery for one A330 aircraft of ICBC's fleet. Strategically located at a free zone area in Queen Alia International Airport in Amman-Jordan, Joramco's facility includes five hangars that can accommodate up to 15 aircraft. Joramco is certified by a number of international regulatory authorities including the European Aviation Safety Agency (EASA), the U.S. Federal Aviation Administration (FAA) and the Jordan Civil Aviation Regulatory Commission (JCARC).

Magnetic MRO opens office in Kuala Lumpur

Magnetic MRO, a global provider of Total Technical Care for aircraft operators and lessors, has announced the launch of its Representative Office in the capital of Malaysia, Kuala Lumpur. The company's new office will focus on developing new customers and partners in South East Asia. The Kuala Lumpur-based team will focus on the introduction of Magnetic MRO services in the local market by developing Technical Training, Engineering and DOA solutions for Malay, Indonesian, Singaporean, Thai, Vietnamese and other aircraft operators and maintenance organizations in the region. In addition, Magnetic MRO will provide local airlines, MROs and other market players with scheduled and AOG aircraft spare parts supply.

S7 Technics launches aircraft seat cover repair facility

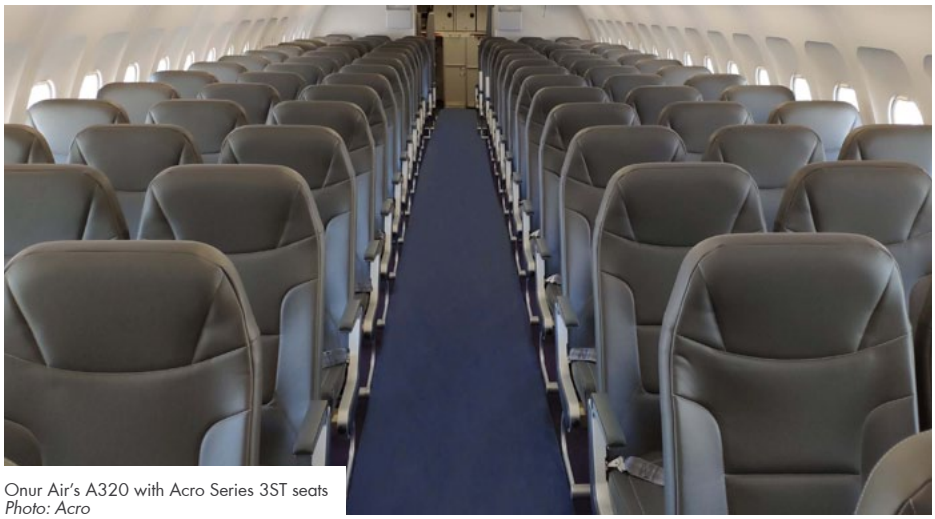
Russian aircraft maintenance provider S7 Technics has launched a new facility for the repair and refurbishment of cabin components for Western-built aircraft at its Novosibirsk Tolmachevo maintenance base. In doing so it becomes the first of its kind beyond the Urals to be able to help airlines in Siberia, the far east of Russia, and in the central Asian regions to efficiently ensure their aircraft cabins are in good condition. The European Aviation Safety Agency (EASA) has extended its approval to the Tolmachevo facility as part of a broader agreement for the production and repair of aircraft cabin components. This involves two other dedicated workshops which produce plastic details for passenger seats, metal parts, soft inventory (such as seat covers, curtains and soft partitions) and placard stickers for external and internal use. The new facility's launch customer is S7 Airlines, which has had its Airbus A320 leather seats refurbished. There are currently five specialists working in the cabin component repair shop, all of whom underwent extensive training and who also received hands-on experience at S7 Technics' Moscow production base where a similar facility, the first in Russia, has been in operation for several years. The annual capacity at the Novosibirsk facility is 4,300 components.

Photo: S7 opens new seat cover repair facility at its Tolmachevo maintenance base

MTU Maintenance Zhuhai now has the capability to maintain CFM International LEAP engines
Photo: MTU

MTU Maintenance Zhuhai to maintain, repair and overhaul LEAP engines

MTU Maintenance Zhuhai now has the capability to maintain CFM International LEAP engines. The General Support License Agreement (GSLA) signed between China Southern, MTU Maintenance Zhuhai's 50/50 joint venture partner alongside MTU Aero Engines, and CFM International will enable the facility to maintain, repair and overhaul LEAP-1A and -1B engines. The first quick-turn LEAP-1B engine was inducted on September 10. Alongside the newly introduced capabilities, MTU Maintenance Zhuhai was also celebrating groundbreaking on its 50% expansion, taking it to a capacity of 450 shop visits by 2021. The fleet of CFM International's advanced LEAP engine is building up rapidly, logging more than five million engine flight hours through August, just three years after commencing commercial service. MTU Maintenance Zhuhai has carried out significant preparations for the implementation of the LEAP program at its facility in the Zhuhai Free Trade Zone, close to Hong Kong and Macao. These include the procurement of tooling and testing equipment, review of technical documents, employee training, as well as obtaining the necessary aviation authority approvals. The LEAP engine is a product of CFM International, a 50/50 joint company between GE Aviation (a division of General Electric) and Safran Aircraft Engines.



Onur Air's A320 with Acro Series 3ST seats
Photo: Acro

Acro's Series 3ST chosen for Onur Air A320s

AerCap has selected Acro's Series 3ST seat for two A320 aircraft. AerCap, a global leader in aircraft leasing and aviation finance and Acro have a long-standing relationship. Acro has supported the lessor for several years with their seating requirements on a range of aircraft leasing programs. On this occasion, AerCap has leased the two A320 aircraft to Turkish low-cost carrier, Onur Air. Based at Istanbul Airport, Onur Air operates its service throughout more than 120 international destinations, scheduled and non-scheduled in 25 countries, serving over 100 million passengers since 1992.

GA Telesis' increase in product demand leads to increase in Q3 engine and airframe inventory levels

GA Telesis Component Solutions Group (CSG) has acquired one CFM56-5B, six CFM56-5A, two CF6-80C2B engines, two 777-200ER and two 737NG to meet the demand of its customer inventory requirements. The inventory will be used to support the GA Telesis SNAP, ACCESS, and Flight Hour Programs, as well as day-to-day replenishment requirements of the Company's Airline and MRO customers worldwide. The company further stipulated that its Q4 production might exceed its announced Q3 scope. Alex Tuttle, Chief Operations Officer at GA Telesis stated, "Our team has seen a dramatic increase in demand for our products and services and we have had to step up our game. Customers, globally, have communicated their need for increased levels of inventory to support their operational needs and their expectation of GA Telesis to support their increasing levels of seat capacity."

FL Technics expands EASA Part-145 approval with Airbus A320neo family type

FL Technics, a global provider of integrated aircraft maintenance, repair and overhaul services, has extended its EASA Part-145 approval with the Airbus A320neo-family type (LEAP-1A & PW 1100G) for Line maintenance services. The company has already added this new type to its main line station in Vilnius (VNO), Lithuania. Further expansion of the certificate addition is being planned towards Dubai (DXB), Vienna (VIE), Tbilisi (TBS), Riga (RIX), and Kiev (IEV) airports, where FL Technics currently operates their EASA Part-145 approved line stations with A320-family aircraft, Airbus A330, and Boeing 737 capabilities.

Horizon Air and Embraer sign heavy maintenance services agreement

Horizon Air, a subsidiary of Alaska Air Group, has selected Embraer Aircraft Maintenance Services (EAMS) in Nashville, Tennessee, as the exclusive heavy maintenance provider for the company's fleet of 30 Embraer E175 aircraft. The multi-year agreement includes airframe maintenance, modifications and repair services provided by Embraer's portfolio of solutions TechCare. Fittingly, the deal was signed at the Regional Airline Association's 44th Annual Convention that took place in EAMS's hometown of Nashville, Tennessee.

Liebherr-Aerospace on Board VRT-500

Liebherr-Aerospace has signed an agreement with VR-Technologies, a subsidiary of Russian Helicopters, to be the supplier of the environmental control system for their new civil helicopter VRT-500. The agreement to supply the light single-engine multi-purpose VRT-500 helicopter with the environmental control system also includes the cooling system. VR-Technologies anticipates the VRT-500's breadth of application to be quite diverse – from private use, taxiing, tourism, news/media and logistics all the way to rescue and ambulance services. The forecast for deliveries of the VRT-500 is quite solid. The helicopter was first revealed to the world in 2018. Liebherr-Aerospace is proud to share the news that they will partner with VR-Technologies which channels the proven expertise in developing helicopters with today`s market demands.

Contract signing at the 16th MAKS Airshow between Liebherr Aerospace and VRT
Photo: Liebherr Aerospace

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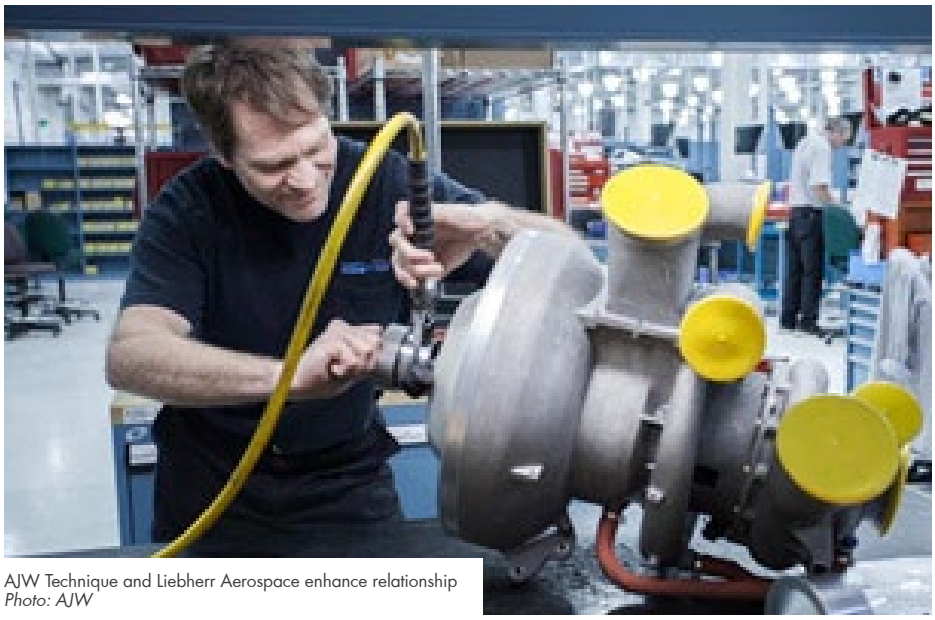

AJW Technique and Liebherr Aerospace enhance relationship
Photo: AJW

AJW Technique enhances relationship with Liebherr-Aerospace

AJW Technique, the maintenance hub for AJW Group's component repair and overhaul service, based in Montreal, has announced a commitment for enhanced collaboration with Liebherr Aerospace Saline, a leading OEM service center in North America. The effort will enable the two businesses to better support airlines across the globe, with AJW Technique receiving access to the OEM's new and serviceable market and exchange inventory. This means that AJW Group will have direct access to Liebherr-Aerospace components that can be traced, sold, and exchanged dependent on a customer's individual needs. AJW Technique will provide Liebherr-Aerospace with component packages of inventory for their Used Serviceable Material (USM) offering, whilst AJW Leasing will provide Liebherr Aerospace with component packages for sales and leasing when needed. Further, the exchange of services workload will be reviewed as well.

CIRCOR Aerospace & Defense California awarded aftermarket service agreement with Emirates Airline

CIRCOR Aerospace, a CIRCOR International company, has reported that its Aerospace & Defense California business has been awarded an exclusive five-year Aftermarket Service Agreement with Emirates Airline. CIRCOR will provide aftermarket parts support, component repair, and overhaul services.

Precision Aircraft Solutions redelivers 24th conversion to SF Airlines

Precision Aircraft Solutions has redelivered one Boeing 757-200 aircraft, MSN 29941, to SF Airlines, a subsidiary of SF Express. The conversion is the 24th Precision passenger-to-freighter Boeing 757 aircraft to join the SF air operation. SF Airlines, MSN 29941, was converted at the AMECO facility in Chengdu, China.

Airbus plans additional industrial projects in Malaysia

Airbus plans to further develop its industrial presence in Malaysia with three new initiatives. These include the expansion of Airbus' wholly owned maintenance facility, Sepang Aircraft Engineering (SAE); the establishment of the Airbus Malaysia Digital Initiative, and an increased participation in the Aerospace Malaysia Innovation Centre (AMIC). The projects are covered by a Memorandum of Agreement (MOA) signed in Kuala Lumpur by Airbus Chief Executive Officer Guillaume Faury and AirAsia Group Bhd Executive Chairman Datuk Kamarudin Meranun. The expansion of SAE will include the construction of a new hangar capable of accommodating four single-aisle or two wide-body aircraft for heavy checks, as well as the addition of new paint and component repair shops. The facilities will be ready to incorporate the latest smart technologies, including data analysis and planning using the Airbus Skywise digital platform and automated inspection techniques. Under the Airbus Malaysia Digital Initiative, Airbus will work with local stakeholders to develop a master plan and select and perform dedicated projects to enhance the competitiveness of the Malaysian aerospace sector through the application of new digital technologies. The initiative will also contribute to the alignment of Malaysian industrial partners with new processes and systems being introduced by Airbus across its manufacturing and supply chain. Building on its position as a founding member of AMIC, this new agreement will see Airbus appoint an Innovation Technical Director to support the non-profit organization and increase its funding for joint research programs. These will include research at AMIC into the potential production of alternative and sustainable aviation biofuels in Malaysia.

Signing of the MOA in Kuala Lumpur, Malaysia, between Airbus and AirAsia Group Bhd
Photo: Airbus

Tech Ops - Tulsa
Photo: American Airlines

American's maintenance base in Tulsa to hire more than 400 new team members

American Airlines is expanding the work conducted at its maintenance base in Tulsa, Oklahoma (Tech Ops – Tulsa), resulting in the need to hire more than 400 new team members. Over the next few months, additional maintenance work will be sent to Tech Ops — Tulsa, including scheduled maintenance work on the Boeing 787 fleet. This work will require the skills of more than 400 new Tech Ops team members in various areas to assist with the additional work coming to the base. The new team members, primarily Federal Aviation Administration-licensed mechanics, will focus on various maintenance areas, including aircraft overhaul, landing gear overhaul for the Boeing 737 and 777 aircraft, CFM56 engine maintenance and Airbus A321 interior modifications. In late 2019, the base will receive its first 787 aircraft to undergo scheduled maintenance checks. Additionally, the base will increase its 777 and 787 maintenance work and will make investments into the Landing Gear Shop enabling greater production. More than 5,200 people currently work at the base with 22 buildings on the main base, including 3.3 million ft² of hangar and shop space sitting on 330 acres.

Skyways Technics Asia branch obtains CAAM Approved Maintenance Organization certificate

Skyways Technics Asia branch has obtained CAAM (Civil Aviation Authority of Malaysia) approval to become an Approved Maintenance Organization. This new certification will enable its ATR-focused composite and leading edges repair shop activities to be in full compliance with Malaysian operator's quality requirements, and this also constitutes the first step towards other foreign approvals to be applied for and received over the coming months.

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Sergei Shkolnik (from left), Base Maintenance Director of Magnetic MRO with ASL Airlines representative Lajos Bagi
Photo: Magnetic MRO

Magnetic MRO marks 600th C-Check

Magnetic MRO has marked a new milestone by welcoming a Boeing 737 freighter for the company's 600th C-Check! The latest symbolic achievement echoes the company's ever-improving efficiency, as well as the geographical expansion of its clientele. The aircraft under maintenance is a Boeing 737-400 freighter, operated by a Central European airline ASL Airlines Hungary. The aircraft reached Magnetic MRO's facilities in Tallinn, Estonian earlier in August 2019 and is due to be returned into service in mid-September 2019.

Heston MRO adds ANA for Perth station, gains JCAB approval

Heston MRO, an independent MRO organization in Australasia, has gained Japan's JCAB approval for its Perth line station and extended cooperation with ANA airlines. In addition to the p daily flight between Tokyo (Haneda) and Sydney which has been operating for almost four years, ANA has launched daily flights to Perth. As part of its drive to become a regional independent MRO of choice for international airlines flying into Australia, Heston MRO successfully passed a series of stringent quality audits from the Japanese Regulator, adding its Western Australian Line station to its existing Sydney JCAB approval. Heston MRO Perth is the second technical handling agent for ANA worldwide to be awarded full certification (CS) privileges from the commencement of ANA services at a new station.

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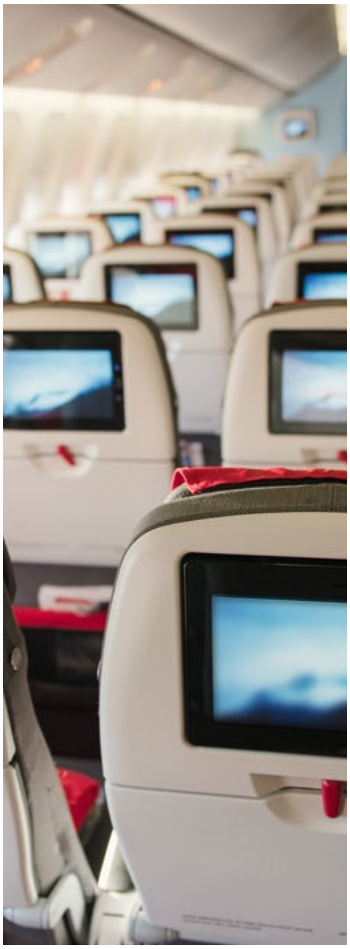

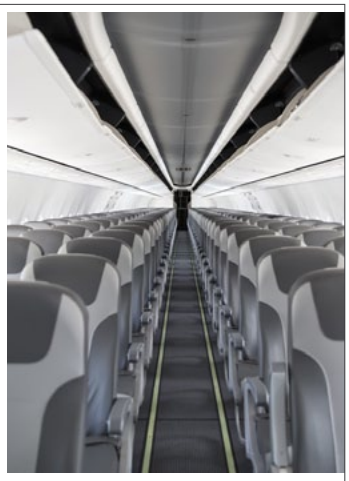

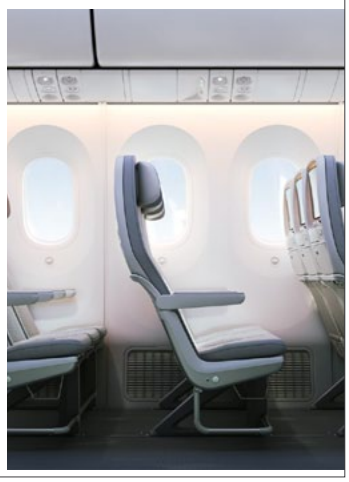

TBD has delivered eighteen sets of towable passenger stairs to the Ground Handling branch of Silk Way Airlines in Azerbaijan
Photo: TBD

Silk Way Airlines entrusts TBD to deliver towable passenger stairs to its Silk Way Ground Handling branch

TBD, the British manufacturer renowned for professionally engineered ground support equipment and specialist access solutions for the global aviation industry, has delivered eighteen sets of towable passenger stairs to the Ground Handling branch of Silk Way Airlines in Azerbaijan. The total order, worth over was focused on a general upgrade for Heydar Aliyev International Airport in Baku. In addition to towable passenger stairs, TBD has recently supplied a significant quantity of baggage trailers, container dollies and pallet dollies for Silk Way's ground handling needs.

GKN Aerospace announces worldwide reorganization

GKN Aerospace has announced details of a worldwide reorganization in order to create a simpler, more competitive, customer-focused business. The business has grown rapidly by acquisition over recent years, increasing in scale from a £600m (US$726m) turnover in 2006 to more than £3.5bn US$4.2bn) at the end of 2018. Today, it is structured with four independent divisions, each focused around products and internal capabilities. In the new structure, GKN Aerospace will fully integrate as one business, with customer-facing teams and a single, connected network of global sites, all supported by shared services. The new structure will enable the business to better serve its customers, improve operational performance, collaborate internally and maximize its potential for future growth. Hans Büthker, Chief Executive Officer GKN Aerospace, said: "We are creating a single, fully integrated business aligned to our customers' needs, which will ensure we are better positioned within the competitive global aerospace market. The reorganization will take place within the next two years and, following the move to simplify the business, GKN Aerospace's global headcount is expected to reduce by around 1,000 roles. These will be non-production roles, as it reduces layers of management and support functions, and increases its focus on operations. GKN Aerospace will aim to manage as much of this reduction as possible through natural means, such as the usual turnover of people, vacancy management and redeployment of employees. GKN Aerospace has 50 manufacturing sites across 15 countries and today employs around 18,000 people.

Trenchard Aviation Group opens facility on island of Mauritius

In order to better serve its long-standing customer, Air Mauritius, Trenchard Aviation Group has opened a new facility on the Indian Ocean island of Mauritius. Trenchard Aviation Group has long been providing a dry-cleaning service for Air Mauritius as well as the cutting and sewing of seat covers from its base in the U.K. near Gatwick Airport. Now, with its new facility on the island of Mauritius, Trenchard Aviation Group will be able to deliver a full service with a faster turnaround time and at a reduced cost. Trenchard Aviation Group is a leading provider of cabin products and services including soft furnishings, carpets and dry cleaning. With its own cut and sew facilities, the company's expertise covers the manufacture of all types of seat covers and curtains as well as cockpit covers, fire containment sacks and other cabin bags and warning streamers. Trenchard's team are creating and developing new covers and curtains to match customer specifications and all textile materials used in manufacture are tested in the company's on-site UKAS-approved vertical burn test chamber.

Semmco wins contract with JetBlue Airways

Semmco, an innovative engineering company that designs and manufactures a wide range of aviation maintenance solutions, with a U.S. manufacturing base in Arlington, Texas, has signed a contract with JetBlue, a major carrier in the U.S., Latin America and the Caribbean. Semmco will be supplying access platforms and ground support equipment to JetBlue line stations across the U.S. The contract will be delivered over the next 12 months and represents Semmco's first major order since opening its U.S. office and manufacturing facility in January 2019. Semmco's bid proved successful in the competitive contract process and was recognized for its complete range of equipment and capabilities for the Airbus A320 family. Semmco's equipment is designed by engineers for engineers and offers new innovations in aviation maintenance for the American market. In June, Semmco delivered eight access platforms to its first line station in Palm Beach, Florida. This forms part of the total order of 151 units that Semmco will be providing to 11 line stations in states across America, including California, Virginia, New York, New Jersey and Massachusetts.

Semmco to supply access platforms and ground support equipment to JetBlue line stations
Photo: Semmco

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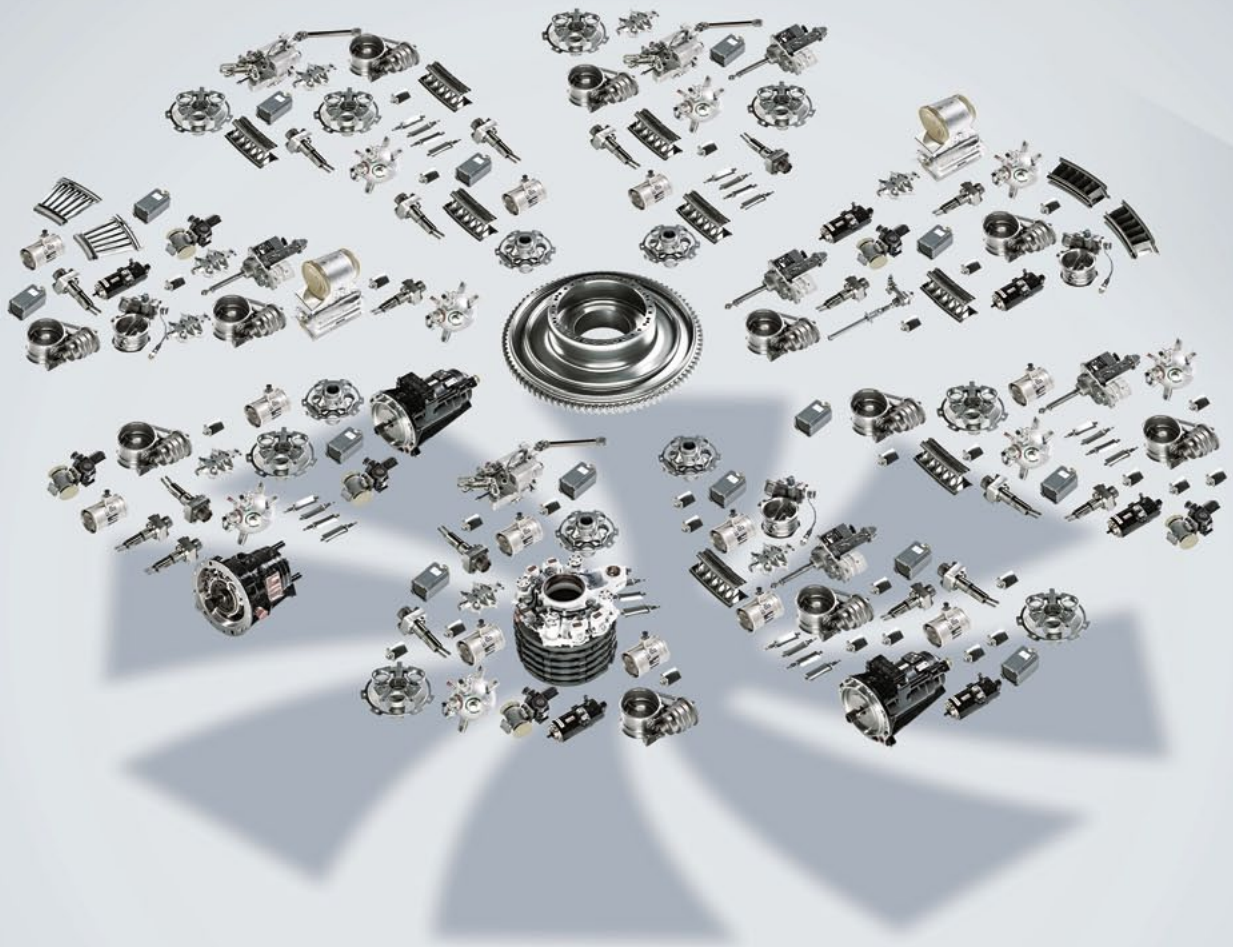

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Photo: © Rolls-Royce

Rolls-Royce to provide TotalCare Flex services for Air Canada's Trent 700 fleet

Rolls-Royce has signed a new TotalCare® Flex agreement with Air Canada that will ensure the availability of the airline's Trent 700 until fleet retirement. The agreement marks a new milestone for TotalCare Flex, designed for owners and operators of mature engines. It is the first to be signed for the Trent 700, which entered service in 1995, and is in addition to TotalCare Flex agreements on Trent 800 and Trent 500 engines. To date, the Air Canada fleet of Trent 700-powered Airbus A330s has achieved more than 700,000 flying hours. With the first aircraft now reaching approximately 20 years in service, the reliability and durability of the Trent 700 is unparalleled.

Embraer E170
Photo: S7 Technics

S7 Technics to maintain Embraer E170s at Irkutsk line station

S7 Technics' Irkutsk line station has won approval from the Bermuda Civil Aviation Authority (BCAA) to provide line maintenance services for the Embraer E170 aircraft type. Previously, the only facility able to maintain Embraer E170s in Siberia and the Russian Far East was the S7 Technics base at Novosibirk's Tolmachevo airport where specialists have been performing periodic maintenance checks on the aircraft type for two years. S7 Technics' Irkutsk line station won its authorization to perform line maintenance works on the E170 aircraft in August and the organization's specialists plan to start maintaining the type within the fleet of S7 Airlines – the only Russian operator of the E170 – in September.

FACC manufactures radomes for Airbus A220

Austria-based FACC, a leading technology partner of the aerospace industry, has been commissioned by Bombardier Aviation to manufacture radomes for the Airbus A220, in addition to the Bombardier Challenger and Global business jet families. Deliveries for the A220 commercial aircraft are scheduled to start in 2020. Bombardier and FACC can look back on a long-standing partnership as the Upper Austrian aerospace company has been collaborating with the Canadian aircraft manufacturer ever since it was founded 30 years ago. Over the years, FACC has developed into a renowned partner to Bombardier through continuous innovation and efficient state-of-the-art manufacturing processes. FACC will start delivery of the radomes in 2020 and will manufacture them for the Airbus A220 under a life-of-program contract. Radomes are part of the cockpit section protecting the radar antenna. Stability, weight, reliability as well as minimal attenuation of the signal transmitted or received by the antenna are critical features of these components. In addition, parts must have high-strength properties to protect the radar antenna in the event of a bird strike or hail at high speeds.

Gulfstream expands MRO operations in Appleton, Wisconsin

Gulfstream Aerospace has officially expanded its maintenance, repair and overhaul (MRO) operations at Wisconsin's Appleton International Airport with the opening of a newly built aircraft maintenance facility. The facility has been operational since Aug. 10. The nearly 190,000 ft² building, northeast of the airport terminal, was constructed with an investment of approximately US$40 million. The expansion to the Appleton service center includes 101,853 ft² of hangar space, which will accommodate 12 Gulfstream G650ER or G650 aircraft. In addition to offices, back shops and general support space, the expansion adds a new sales and design center and increased customer access to Gulfstream's design portfolio. The project, announced in February 2018, has resulted in nearly 100 new jobs at Gulfstream Appleton, with the potential for more in the next few years.

On August 10, Gulfstream officially opened its new MRO service center in Appleton, Wisconsin
Photo: Gulfstream

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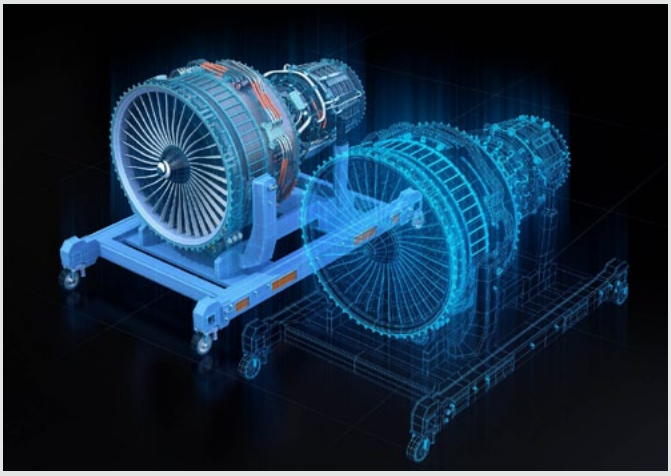

Engine stands *Photo: Locatory.com*

Locatory.com to invest US$10 million in engine stand leasing business

Locatory.com, part of the Avia Solutions Group and an aviation IT company primarily acting as an aircraft parts locator, has invested in a new business. The company is spreading its services portfolio and has started the global leasing of aircraft engine stands. It is planned that in the five upcoming years Locatory.com will invest over US$10 million. The company has partnered with AGSE for their stand manufacturing and will start its service by providing two options – stands for CFM56A/B and CFM56-7 engines. Locatory.com will offer a high-quality equipment lease for a preferred period so that clients worldwide could productively carry out maintenance operations. In addition, the company will offer worldwide shipping services for all leasing orders. The first operations have already started in Europe and will advance soon as the first orders are being planned for Asia in 2019.

Valsoft enters Aviation Vertical with acquisition of Commsoft Oases

Valsoft Corporation (Valsoft), a Montreal-based company specializing in the acquisition and development of vertical market software businesses, has acquired Communications Software (Airline Systems) Limited (Commsoft OASES), a leader in the aviation engineering and maintenance software market, based in Tiptree, U.K. Founded as a software house in 1971, Communications Software (Airline Systems) Limited won its first airline contract in 1975 with industry innovator Laker Airways in the U.K., leading to the launch of the predecessor to OASES (Open Aviation Strategic Engineering System) the following year. Since its first association with the airline

industry over 40 years ago, Commsoft has been continually developing its MRO IT system, now called OASES – a process that has been shaped in large part by feedback from its clients. The directors will remain involved to ensure a smooth transition, while Nick Godwin will continue to lead the company as Managing Director. The company will continue to develop and support OASES, as well as all other products and services, providing a robust software solution to customers.

StandardAero acquires Safe Aviation Solutions

StandardAero has acquired Safe Aviation Solutions (including Safe Fuel, Accel and B&E ACR), formerly the MRO services subsidiary of the B&E Group, which will continue to expand StandardAero's Components, Helicopters & Accessories (CH&A) division and its portfolio of MRO and component repair services. Terms of the transaction were not disclosed. Houlihan Lokey acted as exclusive financial advisor to B&E Group in its sale of Safe Aviation Solutions. Save Aviation Solutions (Safe Fuel, Accel and B&E ACR businesses) is a privately held company that provides comprehensive testing, repair, overhaul and modification of engine fuel system components, pneumatic/hydraulic/actuation systems and aircraft power generation systems for airlines, freight companies, OEMs and other MRO providers. The company operates from two primary locations in South Florida, with nearly 56,000 f²t of operations and approximately 120 employees. Safe Aviation Solutions has an outstanding reputation for superior repair quality on difficult-to-repair components and highly skilled and experienced employees focused on serving commercial aerospace programs with large installed bases of aircraft. Some of the more notable programs currently served include V2500, CFM56-5, CFM56-7, RB211 and Boeing 787 platforms.

Pattonair expands portfolio with acquisition of aircraft spares company Adams Aviation

Global aerospace and defense industry expert Pattonair has expanded its portfolio with the acquisition of aircraft spares company Adams Aviation. The agreement is the second move in the aerospace industry in the space of a month by Pattonair, the Derby, U.K.-based provider of innovative supply chain solutions to the global aerospace market. It follows the company's US$1.9bn merger with Wesco Aircraft Holdings, significantly expanding its U.S. presence and reinforcing its operations elsewhere in the world. Both Pattonair and Croydon-based Adams have nearly 50 years of experience in each of their respective industries, with Adams developing into a successful airframe, avionic parts and accessories distributor in Europe. The acquisition will see the aircraft spares specialist introduce its large network of more than 2,000 private air customers to the Pattonair portfolio.

Permira to acquire Topcast Aviation Supplies Company

Global investment firm Permira has released that a company backed by the Permira Funds will acquire the majority of the shares of Topcast Aviation Supplies Company Limited and its affiliates, the largest independent aircraft parts distributor in the Asia Pacific region, from its founders. The founders and current management team, including Managing Director Thomas Hung and Director of Marketing and Sales Calvin Li, will remain shareholders and continue to play an important role in the ongoing development of the Company. Founded in 1991 and headquartered in Hong Kong, Topcast has nineteen offices across Asia, the Americas and the U.K. Topcast connects suppliers with customers in all segments of aviation including airlines, Maintenance, Repair, and Overhaul (MRO) service providers and Original Equipment Manufacturers (OEMs). As a value-added partner, Topcast operates as an extension of the suppliers offering not only aftermarket support, but also the development of new businesses for its principals. In addition to the core aircraft parts distribution business, Topcast also provides technical support and maintenance services and distribution of industrial cables and wires. It has a repair station in Hong Kong that operates as a service center for many of the products it sells and can provide warranty repairs for customers on behalf of its suppliers. The company's largest market is Greater China, the fastest-growing aviation region of the world.

Nordic Aviation Capital reports revenue of US$890 million for financial year 2018/2019

Nordic Aviation Capital DAC (NAC) has announced its financial results for the year ended June 30, 2019. Total revenue increased by 21% to US$890 million and lease revenue increased by 17% to US $748 million. With a Business Performance result of US$162 million, NAC delivered a 15% return on equity. NAC generated cash flow from operations of US$540 million and made investments of US$1 billion. The company increased its fleet by 43 aircraft to 480 and total assets by 6% to US$8.2 billion. NAC has announced two new orders at the Paris Air Show for over 100 ATR and Airbus aircraft. The company welcomed GIC as a new shareholder.

CAE enters strategic partnership with Directional Aviation Capital

CAE announced today that it has entered into a strategic partnership with Directional Aviation Capital (DAC), one of the largest, fastest growing, and most innovative corporate aviation service companies globally. As part of this transaction, CAE will form a joint venture with DAC's affiliate, Volo Sicuro, LLC and acquire for approximately US$85 million a 50% stake in SIMCOM Holdings, Inc. In addition, DAC's affiliated business aircraft operators, which include Flexjet, Flight Options, Flairjet, Sirio, Nextant Aerospace and Corporate Wings will enter into a 15-year exclusive training services agreement with SIMCOM and with CAE. Together, these aircraft operators have a rapidly growing fleet of approximately 175 business aircraft. In addition, to enhance its training offering, SIMCOM will purchase equipment from CAE's latest product offering, including five full flight simulators. The transaction is subject to customary closing conditions.

Apollo and Athene to acquire PK AirFinance from GECAS

Apollo Global Management (together with its consolidated subsidiaries, "Apollo"), Athene Holding and GE Capital, the financial

services arm of GE, have entered into a definitive agreement for Apollo and Athene to purchase PK AirFinance, an aviation lending business, from GE Capital's Aviation Services (GECAS) unit. In connection with this transaction, Apollo will acquire the PK AirFinance aircraft lending platform and Athene will acquire PK AirFinance's existing portfolio of loans. PK AirFinance is a leading aircraft lending business that serves airlines, aircraft traders, lessors, investors and financial institutions globally with loans to borrowers in more than 40 countries. Financial details of the transaction were not disclosed, although the US$3.6 billion of PK AirFinance financing receivables that were held for sale in the second quarter of 2019 are being sold at a premium-to-book value in this transaction. Alec Burger, GE Capital President & CEO, said, "Apollo's vast lending experience, complementary platforms, and exceptional track record across diversified assets and geographies make it the ideal partner to accelerate PK AirFinance's growth. This sale is aligned to GE Capital's overall strategy to become smaller and simpler, and our commitment to reduce our assets by US$10 billion in 2019 is now more than halfway complete. We continue to focus on shrinking GE Capital's balance sheet, achieving a debt-to-equity ratio of less than four times by 2020, and supporting GE Industrial growth through our remaining GECAS, Energy Financial Services, and Industrial Finance businesses." The completion of the acquisition is subject to customary conditions and is expected to close during the fourth quarter of 2019.

BBAM and Nomura Babcock & Brown close first aircraft in a US$1.12 billion combined EETC JOLCO transaction with British Airways

BBAM Limited Partnership (BBAM), alongside its long-term partner Nomura Babcock & Brown Co., (NBB), have closed a Japanese operating lease with call option (JOLCO) transaction with British Airways for an A350-1000. This is the first JOLCO closing in a US$1.12 billion transaction combining senior secured enhanced equipment trust certificates (EETC) and JOLCO equity in relation to a number of new-generation British Airways-operated aircraft. The transaction will provide financing for six A350-1000 aircraft and two A320neo aircraft. The deal allows the aircraft to be financed by the proceeds from the British Airways 2019-1 EETC certificates and JOLCO equity arranged by NBB and BBAM.

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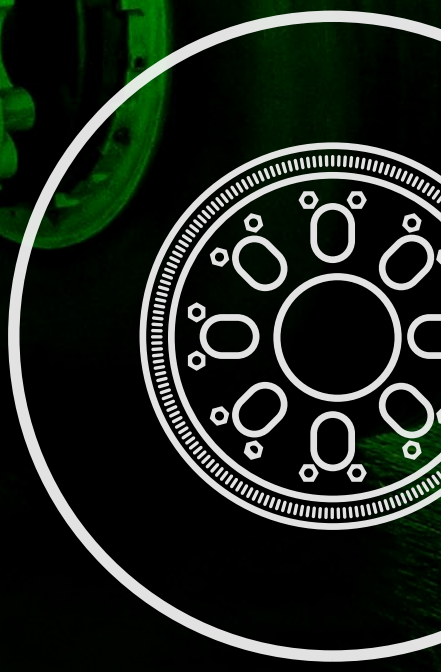

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Lanmei Airlines
Photo: Rusada

Cambodian low-cost carrier **Lanmei Airlines** has signed up for **Rusada's** MRO and Flight Operations software, ENVISION. Lanmei Airlines commenced operations in September 2017 and has since seen a rapid expansion of its fleet and routes. It now serves the destinations of Bangkok, Hong Kong, Macau, Sihanoukville and Palau from its bases in Phnom Penh and Siem Reap. The airline's fleet now stands at nine aircraft, all of which are A320 family. Rusada will begin the implementation project immediately with a view to go live by the end of the year. Lanmei has signed on for nine of ENVISION's modules including Base, Line and Component Maintenance, as well as Finance & Accounting and Human Resources.

Iridium Communications has named **Thales** as the newest Iridium Certus aviation service provider. While already developing the Iridium Certus-based FlytLINK terminal and antenna, Thales will now be able to offer both Iridium Certus terminals and Iridium Certus connectivity services to business jets, commercial aircraft, rotorcraft, general aviation and UAVs. Iridium Certus is an L-band broadband platform providing truly global connectivity and upon aviation terminal availability, will provide a state-of-the-art solution for two-way flight deck and business cabin communications. Iridium Certus will turbocharge the company's existing suite of aircraft safety services, including providing Iridium Future Air Navigation System (FANS) applications such as standard and "enhanced" ADS-C, controller-pilot data link communications and ATS Safety Voice, once certifications are complete. Beyond safety services, Iridium Certus will deliver flight deck and business cabin-friendly internet capabilities such as electronic flight bag services, graphical weather, blackbox streaming, email, credit card processing, VPN access and social media posting and monitoring.

Japan Airlines has selected **GE Aviation** for Digital Records Management across its fleet of more than 200 airplanes. The implementation is currently underway and adds to the 700 million aircraft maintenance records being maintained on GE's digital records management system, AirVault. The agreement includes maintenance and engineering integration of the system at the JAL facilities around the world. The AirVault Digital Records Management system provides a comprehensive solution that digitizes, indexes and archives all airline record types. AirVault provides a centralized location for record search, administration, support and processing. The AirVault web search tool makes it simple to search and retrieve by utilizing word search or indexed data filters. Document indexing can also be exported for use in dashboards, reports or analytics.

Commsoft has released that Kuwaiti airline **Jazeera Airways** has selected OASES as its MRO software system. Kuwait City-based Jazeera Airways is the first non-government owned airline in the Middle East, continuing to be one of the few Middle East-based private airlines to this day. An IATA member, Jazeera Airways currently flies to 29 destinations operating a reliable fleet of Airbus A320 aircraft from its own terminal at Kuwait International Airport. In June 2018 it was the first airline in the Middle East to introduce the A320neo into its fleet. Starting in November 2019, Jazeera Airways will progressively implement OASES with its Core, Airworthiness, Planning and Materials modules across its nine A320-214 and one A320Neo aircraft, with more A320Neo aircraft joining the fleet in 2019 and 2020. OASES modules are designed to provide a flexible and cost-effective framework that allows users to 'design' the perfect system and configuration for their operation.

UTair helicopter fleet
Photo: Swiss-AS

Russian rotary wing MRO provider **UTair Engineering** has chosen **AMOS** and has already planned the first project steps. UTair Engineering now becomes the second member of the UTair Group to choose AMOS, following the UTair Aviation airline, who joined the AMOS Community in 2012. AMOS offers a wide scope of dedicated functions for helicopters to cater to their special needs and requirements. Vibration monitoring is used to identify the early stages of helicopter component degradation, connecting this to the dynamic counter options within AMOS to optimize maintenance control and performance. AMOS offers a complete suite of engineering requirements to control the maintenance needs of the helicopter industry. In addition, AMOS can handle the management of extensive pooling contracts which are tailored to the specific operational environments of helicopters, such as search & rescue as well as oil & gas industries. AMOS covers the wide range of different helicopter OEM requirements and is not limited to specific helicopter brands or types. Due to the number of OEMs in the market, AMOS' adaptability supports the operator to manage approval for modification installations on any particular model.

Photo: thyssenkrupp Materials Services, toii Digitalization

In 2017, **thyssenkrupp Materials Services** began to digitally connect its machinery network, using their self-developed IIoT platform toii. Now that the product has successfully proven its value, thyssenkrupp plans to make the potential of digital networking available to other industrial companies in the future. "From the beginning, we built toii not as a project, but as a product," says Axel Berger, Head of Digital Transformation at Materials Services. "toii has a modular structure, so it is highly scalable and suitable for use by other companies dealing with the challenges of Industry 4.0" More than 30 thyssenkrupp locations are now working with toii – including companies from Materials Services, Components Technology and Steel Europe. Nearly 300 machines have been integrated into the system, including numerous slitting and cut-to-length lines, slitting lines for steel slabs, packaging lines, band saws, measuring systems and high-bay warehouses. In addition, there are numerous cranes, forklifts, wheel loaders and other vehicles in the network. In total, toii encompasses thousands of "Things" from the individual machine control panels to sensors to the manual measuring devices. The advantages are reflected in concrete figures. For example, a single plant in the production of slit strip and sheet can expect an increase in annual production of up to 10,000 tons. In other areas, production line downtimes have been reduced by up to 10%. Although Materials Services developed toii especially for its own requirements, the platform can be easily integrated into the processes of other companies. "Now that we have brought digital change to our facilities, the next step is to offer toii to our customers and other industrial companies," said Klaus Keysberg, CEO of Materials Services.

Utair has selected **GE Aviation** to supply wireless mini Quick Access Recorders (QAR) to assist in meeting its flight data collection requirements from the State Civil Authority of Russia (SCAA). The miniQAR will be supplied from Avionica, a joint venture of GE Aviation. Deliveries are currently taking place across Utair's fleet of 45 Boeing 737 and 767 aircraft, adding to the nearly 16,000 unique aircraft and assets connected to GE Aviation's digital solutions. Avionica's wireless QARs require minimal setup and configuration requirements and can be transitioned in the future to new aircraft if required. More than 9,000 of Avionica's QARs have been delivered around the world, with Supplemental Type Certification (STC) earned on more than 300 models of air transport, business and general aviation aircraft.

IAMA and EURO-COMPOSITES sign LOI *Photo: IAMA*

IAMA, the Independent Aircraft Modifier Alliance, has announced that aviation supplier **EURO-COMPOSITES®** has signed a Letter of Intent to join as IAMA's first Advisory Member. EURO-COMPOSITES, a leading parts supplier and EASA 21J Design Organization in the aviation aftermarket, has operations in Luxembourg, Germany and the United States. IAMA, which was launched in early April by EAD Aerospace, Envoy Aerospace, Etihad Airways Engineering and Lufthansa Technik, advocates for trustworthy STCs (Supplemental Type Certificates) in the aviation retrofit market. "Our recent achievement as a Design Organization (EASA Part 21J Certification) was an important milestone for us, and becoming an Advisory Member of IAMA is another key step in our business strategy," said Rolf Mathias Alter, CEO of EURO-COMPOSITES. "With our extensive interiors, machined parts and panels, we are joining IAMA to help advance STC quality. Bringing our valuable know-how, manufacturing capabilities and R&D resources to the alliance will benefit current and future IAMA members and more importantly, aircraft owners and operators." Once IAMA is a legal entity, at the end of 2019 it will be open to all aviation market participants including aircraft manufacturers, airlines, suppliers and lessors. IAMA offers three primary types of paid memberships: Full, Advisory and Basic. Members have access to specific benefits depending upon their role in the aviation ecosystem, and their membership level. Full and Basic memberships are for organizations with STC capabilities, while Advisory memberships are for airframe and system OEMs (Original Equipment Manufacturers). Airlines, banks and lessors may join for free. Members can shape the alliance's direction through participation in a variety of working groups. Those already established are: STC Standard, Certification and Authority Affairs, IAMA Community and Aligned Information campaign, and the Intellectual Property working groups.

AAR, a leading provider of aviation services to commercial airlines and governments worldwide, and **WSU Tech** have announced their new aviation maintenance education and training partnership to further enhance instruction, as well as student job experiences and career prospects at AAR upon graduation. AAR's EAGLE Career Pathway program will expand the curriculum of WSU Tech's aviation maintenance technology program to include job shadowing and mentoring, as well as academic support and monitoring. WSU Tech students who pursue the FAA-certified aircraft mechanic's certificate are eligible for up to US$15,000 in tuition reimbursements from AAR. AAR's partnership with WSU Tech is one of many ways the company is connecting students with education and real-world job experience to fill the gaps in aviation for middle skills that do not require a bachelor's degree. There is demand for 189,000 new mechanics in North America through 2037, according to a Boeing study, and aircraft maintenance technicians (AMTs) are already in short supply. AAR is introducing the EAGLE Career Pathway at schools near its five U.S. aircraft repair stations. EAGLE demonstrates how students can earn portable, stackable skills leading to multiple career paths at AAR. The stackable skills will enable interested students to pursue the coveted position of an FAA-certified airframe and powerplant (A&P) mechanic.

Alcoa Corporation, a global leader in bauxite, alumina, and aluminum products, has reached a tentative agreement with **United Steelworkers** on a new four-year labor agreement for approximately 1,700 active employees at five U.S. locations. The union members will now schedule a vote on the proposed contract, the result of extensive negotiations between the Company and United Steelworkers. On May 15, the parties agreed to honor the existing contract, which was set to expire at midnight on that day, so negotiations for a new contract could continue without a work stoppage. United Steelworkers will now set the date for its members to vote on the proposal, which will cover employees represented by the union at Warrick Operations in Indiana, Massena Operations in New York, Gum Springs in Arkansas, Wenatchee Works in Washington, and Point Comfort in Texas. Most of the union members eligible to vote on the proposed Master Agreement are employed at Warrick Operations, where the union represents employees at the aluminum smelter and rolling mill, and at the Massena Operations smelter. The Point Comfort alumina refinery and the Wenatchee Works aluminum smelter are both fully curtailed.

Luftfahrtgesellschaft Walter (LGW) has successfully passed the IATA Operational Safety Audit (IOSA) of the International Air Transport Association (IATA). On this basis, it will apply for membership in the IATA. The IOSA is the worldwide industry standard for operational quality and safety procedures in air traffic. During certification, all operational departments such as organization, flight operations, aircraft maintenance and cabin crew are checked for the course of established procedures. IATA is an international association representing some 290 airlines or 82% of all air traffic. Its members play a major role in shaping industrial policy issues in aviation. This means that both airlines of the Zeitfracht Group are certified with the IOSA. In addition to LGW, WDL Aviation, which has already been successfully audited in the past, is also part of the Berlin family business. Luftfahrtgesellschaft Walter mbH (LGW) is an airline founded in 1980 and active in regional and feeder traffic. It has its headquarters at Dortmund Airport and further locations in Düsseldorf and Stuttgart. The company is a leading provider in the wet lease business. LGW was taken over by the Berlin-based Zeitfracht Group in April 2019.

Luftfahrt Gesellschaft Walter (LGW) operating Dornier 228-201 aircraft *Photo: AirTeamImages*

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Up, and away

Managing AOGs means getting an aircraft off the ground as quickly as possible. *Photo: Embraer*

AOGs are unexpected events that can lead to costly consequences and disruption to airline operations. **AviTrader MRO** gathers the key experts to discuss best practice for keeping planes in the air with minimal impact.

Aircraft on Ground (AOG) is the dreaded term airlines love to hate. Justifiably, having an aircraft stuck on the apron with a problem preventing it from flying creates significant problems for airlines including cost and scheduling issues.

GA Telesis saw the benefits of having a global live AOG desk quite some time ago. "As a result, we now have a live AOG desk positioned in the US, UK, and Turkey," declares Jason Reed, President of the Component Solutions Group at GA Telesis. He says having the right inventory was a key driver in making the service a success.

Jason Reed, President of the Component Solutions Group GA Telesis

"GA Telesis made an investment in high moving inventory, at which point our hit rate for AOG tripled over the last year from that commitment. As for our flight hour programmes, we have signed on additional suppliers who are supporting with additional inventories to ensure our contractual customers are covered long term," Reed mentions.

Airlines can manage AOG time critical spares and routine shipments, and Reed believes the right RSPL and MBK management is key for category 1 parts, however, he says, this is a supplier management issue more than an inventory topic. Having solid strategic agreements and placement of inventory with the right supplier base is the key to success – "That holds especially true with consumable and expendables suppliers since a simple standard part could cause an AOG as well."

If the aircraft is grounded, the spare part needs to be available immediately and as close to the aircraft as possible otherwise the airline dispatch will be impacted. "To make sure that our airline customers have the required part when and where needed, Spairliners has a worldwide pool locations as well as optimised logistic concepts to serve the need of our customers around the clock," states Francois De Larambergue, Head of Engineering, AOG desk and Procurement at Spairliners GmbH. Besides that, Spairliners has developed

François De Larambergue, Head of Engineering, AOG desk and Procurement at Spairliners

AOG services need to cover nose to tail applications.
Photo: Pattonair

a very accurate methodology to size their customers' main base stock (on-site at the customers' premises) as well as their own inventory. "We target to have exactly the right level of stock available which is needed to serve the customer demands. In the case we are identifying any risk of non-availability of a part for an AOG item, we purchase the part on the market or place a standard exchange order before the need for the part arises in order to ensure that we are always ready to supply such a part from our warehouse."

Tom Covella, Group President of STS Component Solutions stresses that AOGs are a very important part of STS' business with coverage around the clock. "Although we have made significant investments in technology across our business, when it comes it AOGs we feel that this service requires the focus and attention of dedicated teams."

The biggest investment STS has made regarding AOG services is the expansion of stocking locations to support these urgent requirements. STS currently has inventory located in the US, UK, Ireland, Singapore, Shanghai, Dubai and Hong Kong.

Airlines are constantly challenged to manage their inventories in the most cost-effective manner. Covella emphasises that identifying the proper stock levels and managing the min/max requirements, along with supplier performance levels and intermittent demand make this a very challenging task. He says the location of the inventory verses the location of the AOG makes the timing and method of shipments very important – "The airlines must find the proper balance of all of the above to manage AOGs in the most effective and efficient manner."

Over the past year, MTU Maintenance has been growing its on-site and near-wing services team, and the number of actions performed by that team – 420 events by the count in 2018. "The focus of those actions was on borescope inspections, end of lease checks and quick turn events as an alternative to shop visits, for instance module swaps or HPT blade repairs. This means not only AOG services but events on-site and near wing that bring customer value. The team aims to further increase the number of on-site and near-wing events in 2019, says Sylvia Stuenkel, Director On-Site Services, MTU Maintenance.

Regarding AOG services, MTU like many others have a 24/7 AOG hotline. "We can arrange immediate material supply – from single screws to LRUs and fan blades, for instance – up to full actions on-site, if required," Stuenkel continues.

As for AOG time critical spares and routine shipments Stuenkel says good fleet management and oversight is the best way to minimise downtime. "This can cover material planning too, including LRUs and accessories. In this respect, MTU can support customers with LRU and accessory management services, where MTU manages the supply of the required parts to customers within 24 hours.

"Another way of ensuring AOG coverage is to enter into a comprehensive maintenance, repair and overhaul agreement (for instance an exclusive fly-by-hour contract), which includes AOG coverage and fleet management through MTU's engine experts," Stuenkel suggests.

As a supplier of rotatable spare parts to narrow body aircraft and regional jets, Werner Aero Services are constantly investing in Just-

Mike Cazaz, President and CEO at Werner Aero Services

In-Time inventory to ensure they have availability of at least the MEL spares to support AOGs to customers. "However, we encourage airlines to sign up to our services as ad-hoc services cannot be guaranteed. We work with a predictive analysis applications provider, utilising our data and our customer's data to provide airlines with different options than just availability of a pool of parts," elaborates Mike Cazaz, President and CEO.

At Werner Aero, one of the main specialties is supplying and managing Nacelle items. "We recognise that these items can be challenging to transport around the world, hence we positioned some of them in three major locations in Asia, Europe and North America. The goal is to provide quicker access to our customers in challenging locations while cutting their wait time and transportation costs significantly. We, at Werner also provide a point to point service which helps customers in managing freight, custom clearance and TAT and hence shorten the delivery time," Cazaz continues.

Richard Smith, Director of Charter at ACC Aviation

ACC Aviation Group's role is to provide rapid air logistics and sub-charter solutions to airline clients when AOGs occur. Richard Smith, Director of Charter says ACC's services focus on the most urgent of shipments and the supply of replacement capacity on an ACMI basis – only in full AOG circumstances. "We have an array of time-critical solutions aimed at minimising expensive ground time for our clients' fleets, however, more routine shipments are usually handled by regular freight forwarders, who will aim to minimise cost rather than expedite delivery."

ACC Aviation maintains a constantly updated database of aircraft availability through its global network of supplier airlines and Smith asserts the team excels at locating air charter solutions wherever the clients' needs arise – "We hold fleet and contact data for thousands of airlines worldwide, allowing us to provide round-the-clock support at a moment's notice, anywhere in the world."

ACC have a 24-hour office-based team who can provide a charter or onboard courier solution within a couple of hours if needed – these services can range from carriage of an engineer on an executive jet through to carriage of very large items, such as engines on dedicated freighter aircraft. ACC's large network of supplier airlines means that they can quickly identify the most cost-effective solution for operators.

Problems can occur with aircraft at anytime, anywhere, so it's the speed of the solution that counts, highlights Guy van den Berg, Director of Contract Services at AJW Group. AJW owns extensive inventory strategically positioned around the globe, which prevents the need for them to source a part number from a third Party. "We have an assured logistic network that has been refined to provide a true AOG delivery service, including airside delivery. This last point is important as without airside delivery, freight forwarders will suffer significant delays in getting the part number to where it is required. Our integrated AOG solution is a true end-to-end performance that is designed to reduce customers operational disruptions."

Guy Van den Berg, Director of Contract Services, AJW Group.

Within the industry, Van den Berg points out that it is not unknown for airlines to claim an event is AOG when in reality the part number is a MEL that is only required in 3-5 days' time. "We advise customers that there is little advantage, apart from the part being available ahead of the scheduled removal date, as it remains at an AOG cost."

Following a successful consultation with customers last year, AJW made the decision to expand the AOG team. "This investment in people has given us the ability to offer an even faster response time when delivering the right part to the right place and at the right time.

"In addition to our investment in people, we have also been investing heavily in the strategic distribution of inventory," Van den Berg adds.

In a nutshell, Ajay Agrawal, President, Aftermarket Services at Collins Aerospace reckons the best way to manage an AOG event is anticipating material requirements, and having product positioned proactively to support when needs arise.

Ajay Agrawal, President, Aftermarket Services, Collins Aerospace.

"Airlines are very good at watching and assessing potential material shortfalls," says Agrawal. "In our experience, airlines are most successful when there is a high level of communication with their support provider about potential shortages. For airlines looking to partner with a support provider, they should look for programmes that offer full inventory management and asset support. One example is hardware availability at their line and base stations, as well as access to an expansive regional pooling network. If an airline prefers to manage its own inventory, a programme which offers advanced exchanges and loaners for repaired units might be a good fit."

At Regional One, they have found that in order to best minimise downtime due to AOG time critical spares and routine shipments, they believe that one of the fundamental items in doing so is to assist airlines with upkeeping an onsite inventory at their critical hub locations. "Unfortunately, this option isn't always a viable one, therefore we try to mitigate this by keeping a well-stocked inventory of parts tagged by approved vendors and ready to go for shipment when that call does come in. Additionally, ensuring that relationships with the various courier services are well maintained is an integral part of that process as it ensures quicker turn times and support, "explains Daniel Rosenthal, VP Customer Support at Regional One.

Quick resoponse to AOGs are reflected by 24-hour operations.
Photo: SAS

Viktoras Baltaduonis, the PBH Programme Manager at Magnetic MRO comments saying for AOG situations it's very important for airlines to choose correct trustworthy partners for component support who are customer oriented, helpful, with an empathetic attitude. "For instance, our customer support is willing to go an extra mile and tend to customer needs while data analysts are working to form and maintain a sustainable and relevant pool of components available for customers on AOG basis."

In terms of regions and locations, Baltaduonis says Magnetic MRO offers to put together a kit dedicated specially for a particular customer 's fleet and place it in remote destinations - or even on board the aircraft. "This kit should consist of highly rotating and main no-go items in order to minimise AOG situations. A reliable logistics team that has a wide net of useful contacts and is able to think outside the box for solutions is also important for the successful cooperation," he states.

Jim Smith, Commercial Director MRO and Aftermarket at Pattonair says airlines can manage AOG time critical spares and routine shipments but its quite an exhaustive and long list, but prior preparation, planning and risk mitigation goes a very long way in solving the problem. "Sure, you want to try switch from reactive to proactive, but the nature of a true AOG is very challenging."

Viktoras Baltaduonis, PBH Programme Manager at Magnetic MRO.

Smith explains that having robust and readily deployable systems and solutions aimed at mitigating operational disruption are the fundamental systems treatments. However, he questions that big data and predictive maintenance are great and work well, but does it really work well on the unexpected $.50c seal or gasket that's suddenly decided to go unserviceable?

Smith: "Airlines need an array of services and solutions available, some of which should be trusted to a capable and competent third-party provider with a demonstrable track record. Services range from planning, scheduling, deployed and forward stock locations, rapidly deployable infrastructure and resource and parts availability type services."

AOGs are often unexpected and difficult to predict and supposidley new or emerging technologies can make AOG services more efficient or more predictable. Pattonair feel new technologies are extremely important in order to make AOG service more predictable and more efficient. Smith states analysing MTBUR (Mean Time Between Unscheduled Removals – operational measurement) you can determine interval on how many flight hours component usually spends installed on an aircraft before failing. He says further supplementing with operational data from field (e.g. BITE, actual component removal data) interval becomes more precise thus giving a chance to not predict but even prevent AOG situations – "Shortly, it's a big data analysis and we're working to have a very powerful customised tool in order to provide timely assistance for our customers."

In Rosenthal's opinion, data is key in this industry and there is need to explore the latest and greatest technology to continue to function and fine-tune the process. He states that Regional One is especially proud of a new in-house developed system called NAVA. "This system extrapolates data from various resources and provides the AOG team with a snapshot of not only our own inventory, but our partners inventory as well as inventory offered to us through reciprocal trading vendors or MROs." Rosenthal adds that this sort of information compilation allows for the Regional One AOG team to provide better and quicker feedback on critical information such as shop lead times, alternates, last sale data, fleet platform details, ATA chapter, etc.

The industry should continually work to refine analytics to improve the predictability of AOGs.

Jim Smith, Commercial Director MRO and Aftermarket at Pattonair

Raising the standard

CFM56 maintenance at work.
All photos: StandardAero

StandardAero is one of the world's largest independent providers of services including engine and airframe maintenance, repair and overhaul (MRO), engine component repair and engineering services. StandardAero serves a diverse array of customers in the airline, business and general aviation, military and energy markets.

StandardAero's Airlines and Fleets division provides OEM-authorised MRO services for civil aeroengines and APUs in the 900-43,100 lb and 500-5,071 shp classes, including:

- CFM International CFM56-7B
- GE Aviation CF34-3/-8
- Honeywell GTCP36-100/150
- Honeywell RE220
- Pratt & Whitney Canada APS 2300
- Pratt & Whitney Canada JT15D
- Pratt & Whitney Canada PT6A
- Pratt & Whitney Canada PW100
- Pratt & Whitney Canada PW150A
- Rolls-Royce AE 3007
- Rolls-Royce RB211-535

StandardAero supports owners and operators of these engines through a network of 13 OEM-authorised MRO facilities worldwide. StandardAero's global footprint includes eight overhaul locations across the Americas, Europe, Africa, Asia and Oceania, which support operators with services such as overhaul, hot section inspection (HSI), boroscope inspections, foreign object damage (FOD) repair, component repair, metal in oil (MIO) repair, Service Bulletin (S/B) compliance, and engine/module performance testing, supported by on-site engine test cells:

- Brisbane, QLD, Australia: PT6A
- Gonesse (Paris), France: PT6A, PW100
- Lanseria (Johannesburg), South Africa: PT6A
- Maryville, TN, USA: AE 3007, APS 2300, GTCP36-100/150, RE220
- San Antonio, TX, USA: RB211-535
- Selatar, Singapore: PW150A
- Summerside, PE, Canada: JT15D, PT6A, PW100
- Winnipeg, MB, Canada: CF34-3/-8, CFM56-7B

These overhaul facilities are supported by eight service center locations, capable of providing services such as HSI, borescope inspections, power section repairs, fuel nozzle testing, component repair and light overhaul:

- Brisbane, QLD, Australia: JT15D, PW100, PW150A
- Calgary, AB, Canada: PT6A, PW100
- Gonesse (Paris), France: PT6A
- Grapevine (DFW), TX, USA: JT15D, PT6A, PW100, PW150
- Kennesaw (Atlanta), GA, USA: JT15D, PT6A
- Lanseria (Johannesburg), South Africa: PW100
- Latrobe (Pittsburgh), PA, USA: JT15D, PT6A
- Nairobi, Kenya: PT6A, PW100

In addition to the services provided through these facilities, StandardAero also supports customers in the field through a team of 20+ field service representatives. The company also keeps operators flying with a pool of 200 lease engines, ensuring that customers' aircraft remain up in the air even while their powerplants are in the shop.

StandardAero complements its MRO services with a range of additional capabilities, including:

- Engine health monitoring (EHM) services, covering engine condition trend monitoring (ECTM) for all Pratt & Whitney Canada products (as a CAMP Systems Designated Analysis Center (DAC)) and EHM support for the CFM56-5/-7 and CF34-3/8
- Extensive in-house component repair and overhaul (CRO) capabilities via StandardAero Component Services (SACS)
- Line replacement unit (LRU) support, including LRU management through StandardAero's Total Engine Asset Management (TEAM™) programs
- In-house engine trading solutions, including short- and long-term engine leasing, engine rental pool management, serviceable engine/parts sales, and engine exchanges
- Broad engineering capabilities, including supplemental type certificate (STC) development, as a Design Approval Organization (DAO)

P&W turboprops are among the capabilities.

With more than 80 years of engine MRO experience, StandardAero has developed a reputation for quality workmanship, industry leading turn-around times, exceptional customer service and competitive pricing. Contact us today to lean how we constantly raise the standard.

Plane smart

Members of the Farsound Aviation team.
All photos: Farsound Aviation

Kevin Sargent, Executive Chairman at Farsound Aviation talks about growth in the aero engine parts sector and how new investment will shape the business for future expansion.

Founded in 1979, originally as a manufacturer of small machined and fabricated aerospace parts, Farsound Aviation has developed into a significant global presence as a major supply chain solution provider for the aero engine MRO sector.

The manufacture of parts was the core business initially back in the 70s and 80s and having sold that unit off the focus is now on supply chain solutions which has taken off significantly.

The business supports a range of engine platforms, including all Trent engines, RB211, V2500, GTF, GE90 and CFM56 engines specialising in the supply of C-Class, B-Class and other fast-moving consumable parts.

Kevin Sargent, the Executive Chairman at Farsound Aviation and Sterling Aircraft Product Inc, joined the company in 2014 with the task of manoeuvring the business to growth and five years down the line he says the supply chain solutions side of the business has now grown significantly. Last year the company recorded growth of over 25%, this year it's on target for 36% and next year growth is expected at around 40-45%.

"The business has won big contracts in the last 12 months which is adding significantly to the growth and successes of the business," Sargent reports. In 2018 Farsound renewed or won contracts with HAESL, TEXL and TS&S.

In terms of key capabilities for supply chain services Sargent explains that Farsound takes on the whole supply chain for all the small parts that go into the engines – "We specialise in aero engines. It's all the C-Class parts like the nuts and bolts, washers, filters, housing, the small bits that basically hold the engine together and we supply all of the parts that the customer typically needs."

In a recent contract win Farsound supplies a kitted solution to an MRO shop in Madrid with all their C-Class parts required to rebuild their engines after repair. "They strip it down, they take it apart, repair it and when they put it back together again, we supply kits with parts that are required to rebuild the engine. All their requirements come through us."

Delivered directly to the customers' assembly lines, Farsound's kitting solutions ensure that all the parts required at any single location are available whenever needed. Kits can also be delivered on consignment at customers' facilities, so they only pay for what they use, after they use it.

Sargent reckons the trends towards MRO's outsourcing this business is good news for the small parts business saying there is typically 7% growth year on year in outsourcing activity. "It's just a real pain in the back side to manage for customers. C-Class parts are low value but there are a lot of them. Typically, in an engine, 80% of the parts are those kinds of parts, so it's a lot of noise and they [MRO's] just want to handover to a company like Farsound because that's what we do, and we are very good at it.

"We typically have 99.5% on time delivery for those parts, so they will outsource the whole lot and give it to us to manage."

With regards the possibility of moving into larger engine parts business, Sargent notes the higher up the components list the more expensive the parts are, and OEMs typically have a much tighter control over such parts. "The OEMs don't tend to be interested either in the nuts, bolts and washers because they are so inexpensive but when you start venturing up the supply chain the more expensive the parts get

-the OEMs have a very tight control on that and it's difficult to break into that sector. So, we typically tend to focus on supplying the 80% of the parts they require to put the engine together and that is where we do our business."

Investment and expansion

In July 2018, Farsound extended its operations with the acquisition of Sterling Aircraft Products Inc, based in Toronto, Canada. Sterling has a broad portfolio of customers across the aerospace and Industrial Gas Turbine sectors and is an excellent complementary addition to the Farsound business. With excellent reputations in their respective markets and with an expanded product portfolio, Farsound and Sterling are now pursuing opportunities for further development, particularly in Asia and the Americas. Also, a new facility in Spain is now up and running in support of a carrier in Madrid.

In July this year the company announced it had been acquired by AGIC Capital a European-Asian private equity company and Sargent is bullish about the prospects ahead.

He reminds that Farsound was previously owned by a private equity company – "they held the business for seven years and decided they had grown the asset to a level where they could make a good return and sold the asset to another private equity company."

The team at Farsound were delighted with the response upon going to market. Sargent says there was huge interest with 17 companies putting in a bid for Farsound with about 50/50 trade and private equity interest. "It was a very healthy competition and we got a very good price for the business because there is good demand and desire to get into the MRO sector at the moment."

AGIC paid £115m for the company and Sargent feels AGIC is the right choice to drive the business forward. "Firstly, they were in the top tier of the offers for the value of the company and secondly they were a good fit and we seemed to get on with them through the process. We quite like that fact that we are going to be working for another private equity company and to a degree still oversee our own destiny rather than getting sucked into another trade organisation."

New investors are key to growth in Asia.

Our main target for growth over the next three to five years is breaking into other OEM engine platforms - *Sargent*

With AGIC's Asian connections Farsound Aviation is now well positioned to expand its presence in the Asian markets. "We are now going to focus a lot on the Chinese market, we already have major aero engine customers in China now so it's about AGIC giving us even more support to get more traction in that region."

The wider Asian region also presents significant opportunities such as South Korea, and Farsound Aviation now has an office in Japan and Singapore. Certainly, with the anticipated is 6% year on year growth in airline capacity in Asia Pacific over the next 20 years this represents phenomenal growth and Farsound are exactly in the right place to get on the back of that.

Sargent is keen to explore both capacity and geographical expansion – "We are looking at both of those. We are looking at potential acquisition opportunities in Asia and at potential facilities in that region to complement our North American acquisition to give us a truly global footprint."

Looking ahead Sargent is optimistic about the growth potential and moving into other engine types will be focal. He says certainly within the next five years there will be a focus entirely on getting onto different engine platforms like the CFM56 and the V2500 which Farsound just starting to break into but now needs to get into in a much bigger way. "We have a lot of exposure on Rolls Royce engines but not so much on other platforms. Our main target for growth over the next three to five years is breaking into other OEM engine platforms."

As for next generation engine types these are exciting times for the company. With the recent contract win in Madrid, the Spanish carrier will perform CFM LEAP overhauls and Farsound again is well positioned to provide its services in addition to CFM56 and V2500 kits. "They are going to be one of the first shops to do the CFM LEAP engine overhauls and they have already started talking to us about kitting solutions for that new engine type. They don't want to go back to sourcing these parts from the OEMs, they want kitting solutions.

"We are well positioned to get on these newer engines."

Core decisions

Exchanges and inventory management

To date, 2019 has seen the fastest growth in airline failures since 2013, with nine operators and 74 aircraft affected*. Oil prices, a strong dollar and increasing competition are all squeezing profits.

As a result, many airlines are looking to streamline their inventory with the risk that they are not able to secure access to components they need at short notice which could lead to costly aircraft on ground (AOG) situations.

Inventory management options include buying airframe and engine components outright, or outsourcing repairs through a fixed price plan such as a power-by-the-hour (PBH) agreement, pooling, borrowing or exchanging. Usually airlines will use a combination of these approaches, depending on their operations, fleet, OEM restrictions, cash flow and the type of component.

Exchange is a good option for catastrophic events, when a required part is expensive and infrequently removed, or for when airlines don't hold the components in their inventory. It enables them to still access parts quickly when needed and is generally a cheaper option than outright buying.

An exchange works like this: an aircraft part is needed; it is shipped by the exchange partner, usually within one day, with its relevant papers; and fitted to the aircraft. The removed unserviceable component is returned with its papers to the exchange partner, usually within 30 days. The airline pays an agreed fee (a percentage of the part's market worth), plus the full cost of the repair and any shipping.

There are two types of exchange – cost-plus and flat rate. Cost plus is when an airline pays a fee at the time of the initial shipment and then the cost of the repair once it leaves the MRO shop; and flat rate is when a fixed cost is agreed in advance for all exchanges. This option enables better budgeting but can be a gamble as actual repair costs vary enormously, meaning airlines could pay a substantial fee for a minor or no fault found (NFF) job.

An exchange does not require a complex contract, it can be one or it can be many, but there is no long-term contract to tie airlines in.

Airlines are looking to streamline their inventory.
All photos: AJW

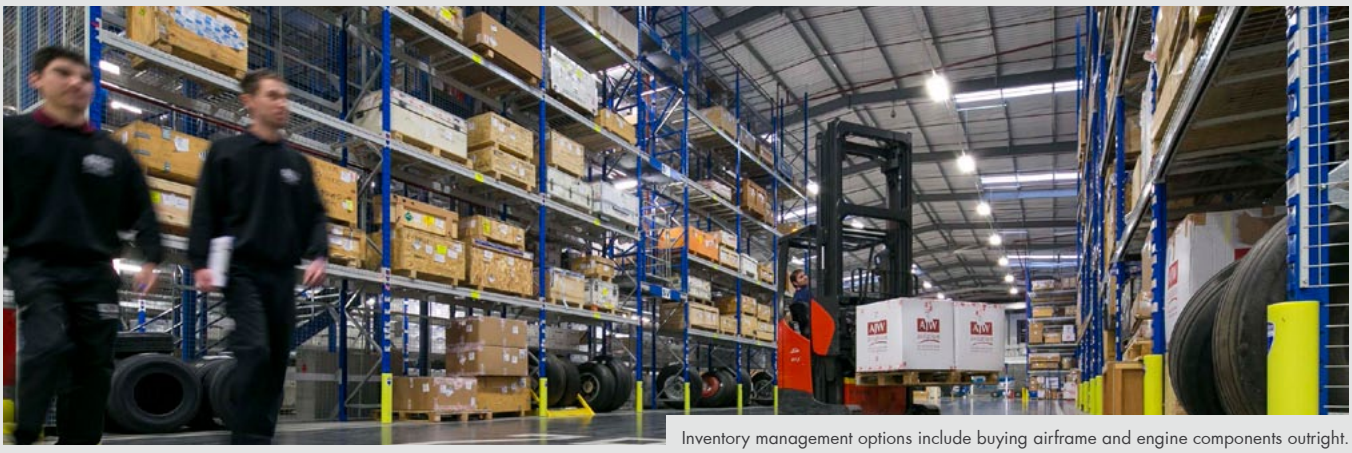
It sounds like a perfect solution. The exchange partner earns their agreed fee and keeps the component on their inventory list, but there are factors airlines should consider. These include lease restrictions, OEM influences and their own operations and market conditions. This makes the selection of exchange partner increasingly important.

At AJW Group exchange contracts are extremely flexible. AJW manages the repair of a part and accepts returns of overhauled units from an airline which reduces turn times significantly.

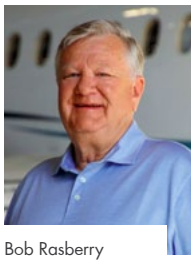
To determine the best option for a customer, AJW considers component availability, balance sheet risk and exposure as well as maximising revenue potential for airlines.

Overall, exchange offers an effective solution for airlines, regardless of their size and location. In combination with other asset management solutions, it can ensure fast, cost effective access to parts that might otherwise sit on shelves for months if they were part of the airline inventory.

- *IBA's market update March 2019
- **IBA's costs for the grounding of the MAX



Inventory management options include buying airframe and engine components outright.


Bob Rasberry

After nearly 20 years, Robert (Bob) Rasberry, Chairman of the Board, is retiring from West Star Aviation. Rasberry will continue with West Star's Board of Directors as Chairman Emeritus and join Norwest Equity Partners (NEP), a middle-market equity investment firm and parent of West Star Aviation, as a Senior Advisor supporting NEP's continued interest in aviation-related investment. Rasberry, in collaboration with his co-founders Sam Haycraft, Jim Swehla and Mike Durst, acquired the small MRO, Premier Air Center, in East Alton, IL in 2002. West Star Aviation in Grand Junction, CO was added in 2005, and ultimately, the companies were united and rebranded as West Star Aviation. The Company has grown from 150 employees to over 1,400.

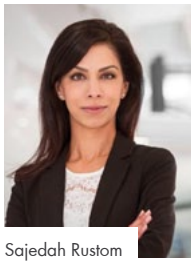
Richard F. Corrado

Air Transport Services Group has announced that its Board of Directors has elected Richard F. Corrado, currently chief operating officer, as president of the aircraft leasing and air transport services company, effective September 16, 2019. As president, Corrado will be responsible for goal setting and oversight of all ATSG businesses. Joseph C. Hete remains chief executive officer and a director of ATSG. The Board also elected Edward J. Koharik III as chief operating officer of ATSG, succeeding Corrado, effective September 16, 2019. He was most recently senior vice president of FlightSafety International in New York City. As COO, Koharik will take over the day-to-day operations management for the majority of the ATSG companies.

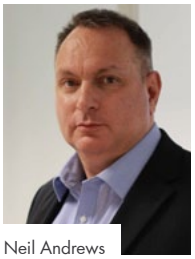
Jean-Marc Lenz

MRO service provider SR Technics has appointed Jean-Marc Lenz as new Chief Executive Officer with effect from September 6, 2019. He succeeds Frank Walschot, who has decided to take up a new opportunity in the aviation industry. Jean-Marc Lenz and Frank Walschot have been working side by side for many years as Lenz has played an active role in business operations, quality and safety and Lean CI. Walschot will remain available until the end of November this year to support the transition. With over 30 years of experience in the aviation industry, most recently as Chief Operating Officer and Accountable Manager at SR Technics, Lenz is a recognized industry leader and aviation executive.

HAECO has appointed Frank Walschot as Chief Executive Officer with effect from December 1, 2019. With over 30 years of experience in the aviation industry, Walschot is a recognized industry leader and aviation executive, most recently as Chief Executive Officer at SR Technics. He has previously worked in the aviation MRO industry in Europe, the United States, Singapore, and Mainland China.


Sajedah Rustom

AJW Technique, the maintenance hub for AJW Group's global component repair and overhaul activities, has appointed Sajedah Rustom as Chief Executive Officer. At AJW Technique, Rustom will be responsible for leading strategy and business development, products and services innovation, whilst ensuring flawless execution and customer satisfaction. Rustom brings with her more than fifteen years of strategic and operational leadership experience in both commercial and business aviation to her new role. She was previously responsible for aftermarket products and services development as well as the transformation of the business aircraft aftermarket at Bombardier Aerospace, achieving significant results.


Neil Andrews

Rusada, the global aviation software provider, has appointed Neil Andrews as Chief Technology Officer. During his 30+ years in software development Andrews has worked for the likes of Open GI, Experian and most recently SSP, where he held the position of Head of Delivery for their Pure Broker and Sector product lines. At Rusada, Andrews will be responsible for the ongoing development of the company's MRO & Flight Operations software ENVISION, using his extensive experience to drive the continuous improvement of its quality, functionality and accessibility. He will be based at the company's Banbury office in Oxfordshire, U.K. and will report directly to Rusada CEO, Julian Stourton.

Dragon Aviation Capital (DAC) has welcome Derek Meikle as Head of Business Development. Meikle brings with him close to 30 years' experience in the industry, primarily focused on leasing, transaction structure and asset management. He has a keen understanding of complex aircraft and engine transactions including lease / finance and maintenance provisions and has partaken in lease transactions in Asia, Europe, and the CIS, in addition to advising and managing aircraft acquisitions on behalf of startup airlines, fleet planning, aircraft management in service and end-of-life planning.

Jet Parts Engineering (JPE) has added two new members to its Sales team: Daniel Taylor, Sales Manager, and Yu Chin Teo, Sales Director for Asia-Pacific. Taylor has extensive experience in the aviation industry, having had roles as technician, inside sales, project line manager, and outside sales. Prior to joining Jet Parts Engineering, Taylor worked for Zodiac Aerospace and Wencor. He is based in Atlanta, GA. Yu Chin Teo comes to Jet Parts Engineering with a broad background, having previously worked in PMA sales, supply chain/production planning with TP Aerospace, and material planning with Singapore Aero Engine Services. He is based in Singapore and will be responsible for developing and growing customer accounts in the Asia-Pacific region.

Daniel Wodera

Daniel Wodera is to become CFO of thyssenkrupp Materials Services effective October 1, 2019. This was confirmed by the supervisory board of thyssenkrupp Materials Services at its meeting on Friday August 30. Klaus Keysberg, who was appointed CEO of thyssenkrupp Materials Services in January this year and who has additionally been acting as CFO since then, has held the post of CFO since 2014. Wodera has a degree in business administration and has been with the Group since 2001. He is returning to Essen from the Italian subsidiary Acciai Speciali Terni S.p.A. (AST) where he has been CFO since 2015 and where he played a key role in the company's successful restructuring.

Julien Millet

TrueNoord, the specialist regional aircraft lessor, has appointed Julien Millet to the post of Chief Financial Officer (CFO). Originally acting as interim CFO, Millet took up this new position earlier in the year. However, he has worked closely with the company since 2016 from an investor and Board perspective in his previous role at Bregal Freshstream, one of TrueNoord's cornerstone investors. The formal appointment to CFO is a natural continuation of this deepening involvement and comes at a time when TrueNoord is experiencing rapid growth and the regional aircraft leasing industry is undergoing significant change.