

North America In focus

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Opinion

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Untangling aircraft transactions and values

here are many factors that influence aircraft values, but these factors can be complex, says boutique advisory firm Alton Aviation Consultancy in their Airfinace Journal annual report.

The report says as manufacturers churn out aircraft at record rates, airlines and lessors are buying and selling aircraft among and between each other in increasing numbers to curate what they perceive to be their optimal portfolios. In the secondary markets, the normal transaction has evolved; singleton trades of aircraft on a standalone basis are few and far between. With the increased proliferation of aircraft operating leasing, the majority of aircraft transactions – on a unit and value basis – now involve attached leases.

The increasingly complex web of transaction types

and the decreasing occurrence of single-aircraft pure metal trades, as well as confidentiality and opaqueness in transaction prices, mean market value is an increasingly elusive concept. For different market participants, even the purpose of the valuation and intended use of the resulting figures may differ.

For an airline, an accurate valuation might be most pertinent for insight into residual value risk or for insurance purposes; for an investor, the incomegenerating ability of the asset – the stream of cash lows that can be expected, and with what risk, is paramount to values.

The full report is certainly worth a read.

Keith Mwanalushi Editor





"With the implementation of AMOS, we are able to strengthen our working practices across the company with an integrated endto-end solution. It will enable transparency, improve quotation and billing cycles and enhance communication with our customers. We will be able to deliver better services as well as exceptional value to our customers for a sustainable future,"

Kevin Kruger, Director & General Manager of HAECO Hong Kong



HAECO Group takes off with AMOS, the world-class M&E software solution.

AMOS, as a scalable end-to-end solution, is the right tool for the HAECO Group and has the potential to unlock new levels of efficiency and productivity.

AMOS will provide HAECO with a future-proof solution to fully support the Group's digital transformation process.



Finnair entrusts Magnetic MRO with painting and refurbishing of ATR fleet

Magnetic MRO and Finnair, the flag carrier of Finland, have signed a contract for complete paint work, full interior refurbishment and base maintenance on all 12 of the airline's ATR 72 fleet operated for Finnair by its partner company Norra. The first aircraft was delivered from Magnetic MRO's Tallinn hangars to the customer on May 8. The agreement includes painting all 12 of the ATR aircraft into the Finnair livery. In addition to the new livery, the aircraft will receive full interior refurbishment. For Magnetic MRO's interior team, this project involves producing the largest number of new details for an aircraft that the company has ever manufactured for a single interior project. The project is also a first for the company in providing base maintenance for ATR-type aircraft. The project is expected to be completed by the end of Q1, 2020.

Rotable Repairs completes relocation of new wheel and brake facility

Wheel and brake MRO services provider Rotable Repairs has completed the move into a new 49,000 ft² wheel and brake facility in Essex, United Kingdom. With the CAA's oversight, the phased transition went without a hitch or without impacting production. The company is now set to take triple its capacity. Strategically planned, the wheel and brake facility now houses a flowing and intuitive production line, new spring testers, wheel greasers, a nitrogen system, inflation cages, automatic wheel inflation and a new spray shop/oven eight-times the size of the original. This equipment complements the

company's existing build-up rigs and torque loader which all adds to the workshop's ability to process volume. Already with a healthy worldwide customer base, the support of the wheel and brake manufacturers and substantial investment in material by Desser for pooling and consignments, the maintenance at Rotable Repairs is set and ready to go. With Watts Aviation having an additional 40,000 ft² of tire storage and with both companies supporting all platforms from general aviation and corporate to commercial, Rotable Repairs can claim to be a true aviation wheel and brake specialist based on diversity and scope. Training and Technology have also seen investment as the management team feel it is important that an influx of new staff should see a benefit from training and from experience gained over time.

StandardAero expands Romania facility, surpasses 200,000th processed gate valve

StandardAero Component Services facility, located in Prahova, Romania, has expanded its manufacturing capacity from 32,000 ft² to 43,000 ft² and also recently exceeded over 200,000 gate valves processed with High Velocity Oxygen Fuel (HVOF) coatings. The company has also invested in a new clean line - new fluoride penetrant inspection and additional milling and turning capacity at its Romania facility, that supports customers in the oil & gas industry by manufacturing gates, seats and stems for valves and pipelines. The facility also manufactures landing gear bushings for the aerospace industry. Gate valves are commonly used in the oil & gas industry to completely shut off or provide full fluid flow

in a pipeline. The interior mating surfaces require reliable and durable coatings with flatness specifications measured in nanometers. Various additional site capabilities include CNC machining, grit blast, grinding, lapping, cladding, HVOF, Xylan, CMM, MPI and NDT.

Bombardier and JETEX to establish new line maintenance station in Dubai

Bombardier has signed an agreement with JETEX for the establishment of a new Line Maintenance Station in Dubai, further complementing the tip-to-tail maintenance services provided by Bombardier's Service and Support Network in the Middle East and around the globe. The new Line Maintenance Station will initially offer unscheduled maintenance services and build toward scheduled maintenance operations in the coming months. The technical engineers supporting the line station are certified for all Challenger series and Global series business jets, including Bombardier's flagship Global 7500 aircraft.

GA Telesis MRO Services Group receives landing gear certification from the FAA

GA Telesis' MRO Services Group has received its landing gear rating from the United States Federal Aviation Administration. This new rating allows the company to provide their customers additional maintenance services with the same high level of quality and customer service. During the certification process, the company successfully demonstrated its competency and stringent quality controls to produce a quality, airworthy product, while leading up to the certification, the company made substantial investments in equipment and people to ensure a successful launch of this new product line. The company will start with capabilities for narrow-body and regional aircraft for Airbus, Boeing, Bombardier and Embraer ramping up to service wide-body landing gear and will simultaneously obtain EASA approval and will seek China CAAC approval within the first 12 months. Landing gear repairs and overhauls will be carried out in the Miami facility located across from Miami International Airport and will support Florida Governor Ron DeSantis' job creation initiatives creating a significant number of new high-tech jobs. The company has secured its first launch customer and will deliver the first ship set of landing gear this month.



MTU Aero Engines establishes new repair facility in Serbia

MTU Aero Engines AG and the Govern-

ment of the Republic of Serbia have signed a Memorandum of Understanding (MoU) with regard to the company's intention to set up a new industrial site in Serbia. The Serbian gov-

ernment strongly supports this new venture, which will most likely be located in the Belgrade region. Due to ongoing negotiations, a decision regarding a specific location has not yet been made. MTU, a leading engine manufacturer and one of the world's largest engine maintenance providers, plans to expand its current network with a dedicated parts repair facility. After a carefully considered selection process including sites across Europe, MTU decided in favour of Serbia as the home of this growth project. Maintenance, repair and overhaul (MRO) for commercial aircraft engines is a major driver behind MTU's business success. An additional facility will provide flexibility and strengthen the company's global competitiveness in this promising market segment. MTU performs around 1.9 million repair hours per year at its existing facilities. An additional facility is expected to add approximately 400,000 annual repair hours. The new site will be a 100 percent subsidiary of MTU and is expected to be operational over the course of 2022.

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Etihad innovates its narrow-body fleet with Acro's Series 6 seat

Acro Aircraft Seating has been selected by Etihad Airways to supply its Series 6 Economy Class seat. The seats are to be retrofitted on twenty-three of the airline's A320 and A321 aircraft and are expected to enter service in May 2019. Series 6 is Acro's next-generation

Economy Class seat which incorporates the company's innovative Extra-spatial design. The fully composite seatback curve provides unparalleled levels of living space at the passenger's knee level and enhances passenger comfort. Acro has been working closely with Etihad to develop a customized version of Series 6 that includes a PED holder, upper and lower literature pockets, fast charging USB

provisioning, headrest, bespoke fabric seat covers and backrest cushions. Another unique seat design that will prove popular with passengers is a center seat that delivers more living space for passengers as it is an inch wider than the window and aisle seats. Etihad is progressively upgrading its narrow-body fleet of Airbus A320 and A321 aircraft with the Series 6 seats and plans to operate the aircraft on short-haul regional services, and further afield to gateways within five hours flying time of Abu Dhabi.

IAG Engine Center Europe receives EASA CFM56-5B certification

The European Union Aviation Safety Agency has approved IAG Engine Center Europe S.r.L.'s CFM56-5B certification. This certification allows the company to provide full CFM56-5B MRO services. MRO services will be carried out in the Rome, Italy facility located near the Leonardo da Vinci – Fiumicino Airport. IAG Engine Center Europe will focus on customized workscopes allowing lean operations.







S7 Technics' aircraft painting center completes its 100th order

S7 Technics' Mineralnye Vody-based aircraft painting center has reached its first significant milestone by completing the re-painting of its 100th aircraft. Some 250,000 man-hours, about 30,000 liters of paint and 60,000 liters of accompanying chemicals (solvents, paint removers, etc.), as well as more than 300,000 abrasive disks were required for the aircraft painting centre to reach the milestone. S7 Technics' painting team delivered the 100th aircraft to customer \$7 Airlines after the painting process was carried out according to the Intermediate Coat Paint System Base Coat/ Clear Coat MICA (base - lacquer coating) method, using PPG Aerospace painting materials. Leading Russian and Kazakh airlines have been regularly using S7 Technics' Mineralnye Vody-based aircraft painting center to repaint their aircraft. Some 59% out of 100 aircraft repainted were Airbus and 24% of them Boeing planes.

Honeywell and Lufthansa Technik to expand collaboration on Airbus A350 MRO-services in Asia Pacific region

Honeywell and Lufthansa Technik will heighten their collaboration on Airbus A350 maintenance, repair and overhaul services in the Asia Pacific region. Lufthansa Technik will act as a licensed component repair center and exclusive global asset service provider in Asia Pacific for more than 200 Honeywell shipped components onboard the Airbus A350. Greater accessibility to services, parts and best-in-class engineering support will help A350 operators in the region maximize operation of their aircraft through improved fleet availability and readiness. "Maintenance is a costly and complex process, but we see our work with Hon-

eywell as an opportunity to help A350 operators in Asia Pacific simplify their maintenance experience," said Gerald Steinhoff, Senior Vice President, Corporate Sales, Asia Pacific, Lufthansa Technik. "Honeywell provides top-ofline technologies that are crucial to the A350. By integrating our world-class asset management and in-region repair centers, we can provide operators in Asia Pacific with better access to support all of Honeywell's key components on the A350. Over the next one and a half years we will significantly expand our local capacities in this area."

Vortex Aviation expands operations to Dublin

On Monday, May 13, Vortex Aviation announced its expansion into Dublin, Ireland The new location will provide engine hospital shop visit maintenance activities to support its global customer base. Initial focus will be on CFM56-5B/7B engine models with other

engine models being added in the near future. Dublin was selected as a prime location as it is known to be the heart of the aviation community. This will help lessors, owners, and operators reduce heavy maintenance costs and expand on the existing facilities in Fort Lauderdale, Shannon, and Singapore. Vortex has operated as a Maintenance, Repair and Operations (MRO) shop under Kellstrom Aerospace Group since 2017. Their services have contributed to the continuously expanding portfolio of Kellstrom. Over the last couple years, the companies have aligned forces to expand into new regions, Dublin being the first impression of their expansion blueprint. "As we grow, we will continue to make our mark on a global level – it's an inspiring time for both Vortex and Kellstrom," commented Jeff Lund, CEO, Kellstrom Aerospace.

Acro delivers seats for ATRs operated by Finnish airline Norra

Acro's Series 3 ST+ seat has been selected as part of a fleet-wide cabin refresh on the ATR aircraft that the Finnish airline Norra operates for Finnair in regional traffic. The cabin refresh is a part of continuous efforts to enhance customer experience and comfort of Finnair customers. Acro has been working to deliver the project in an efficient lead time of eight months and it will be a first delivery for the Series 3 ST+ on an ATR aircraft. Norra operates the ATR aircraft for Finnair on domestic flights in Finland to the Baltics, to Gdansk in Poland and to Stockholm's Bromma airport. The first ATR aircraft with the Series 3ST+ seats installed is expected to be in operation in summer 2019, and the refurbishment of the 12 aircraft will be completed by the end of Q1, 2020.







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SafeDrone by Lufthansa Technik signs contracts with drone manufacturers Matternet and SwissDrones

SafeDrone by Lufthansa Technik has signed comprehensive contracts with drone manufacturers Matternet and SwissDrones. Both companies will use SafeDrone Health to improve the efficiency of their maintenance programs. SafeDrone Health is a holistic and manufacturer-independent diagnostic solution especially for flight-critical components of drones. The cloud-based service allows manufacturers and operators to monitor the technical condition of their drones, making technical fleet management safer and more efficient. Based on detailed failure descriptions and maintenance recommendations, repairs can be carried out at the optimal time rather than too early or in reaction to a critical situation. SafeDrone Health makes a proven approach from manned aviation available to unmanned aerial vehicles. This can reduce maintenance costs by 50% and more. For U.S. drone manufacturer Matternet, SafeDrone Health is an important part of its safety-first philosophy and will support flight operations in Switzerland as well as those conducted under the Unmanned Aircraft System Integration Pilot Program initiated by the U.S. FAA (Federal Aviation Administration). Swiss drone manufacturer SwissDrones aims to become the global market leader for multi-purpose, long-endurance heavy-lift civil drones. "Due to the increased operational expectations towards our products in use around the world, the deployment of a professional fleet health and safety management platform has become a key initiative for SwissDrones. We are very pleased with the partnership with Lufthansa Technik," says Lukas Obrist, Board Member of SwissDrones.

AFI KLM E&M American subsidiary enters into agreement to support ECA's ELTs in the USA, Canada and Mexico

Barfield, a subsidiary of Air France Industries KLM Engineering & Maintenance (AFI KLM E&M), has signed an agreement to continue providing repair service and warranty support for the full range of ECA Group Emergency Locator Transmitters in the USA, Canada, and Mexico. Barfield has provided these services for ECA Group airline and military customers since 2003 when the range of ADT406 Emergency Locator Transmitters (ELT) was introduced to the market. To complement its product support activities, Barfield is also the authorized distributor of ECA Group ELT products in the same regions.

Air Hong Kong and HAECO ITM renew long-term contract

HAECO ITM, a member of the HAECO Group, has renewed its long-term contract with Air Hong Kong to provide inventory technical management support for the airline's Airbus A300-600 freighter fleet. The contract extension covers component MRO, repair management, component pooling, component engineering, consumable and expendable parts support services, and AOG support. The extension will ensure HAECO ITM's customized and cost-effective solutions continue to bolster AHK's strong fleet performance. AHK currently has a fleet of ten Airbus A300-600F aircraft for its regional routes.

Joramco and Air Belgium sign fouryear base maintenance agreement

Joramco, the Amman-based MRO and the engineering arm of Dubai Aerospace Enterprise (DAE), has signed a four-year base maintenance agreement with Air Belgium for the first time. Joramco will perform Cchecks on the carrier's A340 fleet, for which the first check was already performed during last month and the rest of the checks are planned to commence between April and September of this year. Air Belgium SA/NV is a Belgian Corporation with its main office located in Mont-Saint-Guibert in Walloon-Brabant. The company's objective is to offer business and leisure travelers long-distance flights for a low price. Air Belgium operates from Brussels Charleroi Airport.





SR Technics Engineering finishes complex cabin reconfiguration for Virgin Atlantic

MRO service provider SR Technics has completed a complex cabin refurbishment on four Airbus 330-200s for partner Virgin Atlantic Airways. In addition to a customized trolley stowage unit, the cabin reconfiguration introduced business class and premium economy seating including IFE. Despite the tight deadline and the fact that the project took place during the busy holiday season, all four aircraft were delivered on schedule between December 2018 and January 2019.

StandardAero's Gonesse, France, facility renews PW100 and PT6A DOF licenses

StandardAero's engine MRO facility in Gonesse, France, is enjoying a strong start to 2019, with new capabilities and additional hires. Last month, the Gonesse facility, which is located mid-way between Le Bourget and Roissy Charles de Gaulle Airport in Paris, renewed its Pratt & Whitney Canada Designated Overhaul Facility (DOF) licenses for the PW100 and PT6A turboprop engine families, continuing its long association with these popular powerplants. The facility has a 33-year association supporting the PW100 engine, its predecessor company SECA having been the first independent PW100 shop to be appointed in 1986. Gonesse has approvals for 23 members of the PW100 family, including the PW127M variant powering the latest generation of ATR -600 turboprops, plus the PW127G engine which powers the Airbus C295 transport aircraft. Gonesse also has extensive approvals for the PT6A family, including the widely used PT6A-41/-42 models plus the Daher TBM 700's PT6A-64 powerplant and will shortly be delivering its 1,500th PT6A engine. In addition to renewing its PT6A DOF license, the Gonesse facility has also been re-selected by Daher as the PT6A engine maintenance, repair and overhaul (MRO) services provider for TBM very-fast turboprop aircraft based in Europe. StandardAero was originally selected by Daher in 2016, this agreement including engine support for the fleet of TBM 700 aircraft operated by the French Ministry of Defence and

managed by Daher under a Full Operational Support agreement. For 2019, the Gonesse facility plans to offer additional capabilities to its customers throughout the EMEA region with the introduction of a dedicated on-site service center capability and an expanded Mobile Repair Technician (MRT) team of field support reps.

FAI Technik receives FAA approval for EASA MRO license

FAI Technik GmbH, the maintenance division of Germany's FAI Aviation Group, has received FAA approval for its EASA Part 145 license. With the certificate in place, the company is fully authorized to perform maintenance, repair and overhaul on U.S.-registered business aviation aircraft at its Albrecht Duerer Airport headquarters in Nuremberg. This latest license follows similar approvals from the Nigerian authorities in October 2018 and from the Cayman Islands and Bermuda in 2017. Last month, FAI Technik started work on its sixth in-house Global Express cabin refurbishment which marked one of the most extensive refurbishment projects for the type. Named 'Project Pearl', the Bombardier BD700 will include 60-, 120- and 240-month inspections and feature Collins Aerospace's latest VenueTM cabin management system and high-definition entertainment system. FAI Technik provides MRO services for Bombardier Learjet, Challenger and Global Express aircraft, including the FAI rent-a-jet AG-operated fleet. It also supports FAI's dedicated fleet of air ambulance jets. The division is supported by some 60 full-time staff.





American Airlines opens Line Maintenance Station at Houston's George Bush Intercontinental Airport

American Airlines (American) will open a new Line Maintenance station at Houston's George Bush Intercontinental Airport (IAH) just in time for the summer peak season. The airline's 29th Line Maintenance station will provide additional support for the increased maintenance needed to ready American's aircraft for the busy summer travel season while also improving operational reliability and increasing the number of available aircraft to accommodate customers each morning. The newest Line Maintenance station — a more-than US\$42 million investment — will be completed in three phases. In the first phase, which begins in May, American will secure temporary space at IAH and start recruiting aviation maintenance technicians (AMTs). In the second phase, which begins in June, additional maintenance work will be added, such as service checks and engine washes, as well as other maintenance work on aircraft that remain overnight. The third and final phase concludes in the first quarter of 2020 and will include renovated breakrooms, offices and toolbox storage spaces for AMTs. The Line Maintenance station at IAH will be staffed with approximately 46 AMTs and other support personnel who will perform maintenance on the carrier's Boeing 737 and Airbus A319, A320 and A321 aircraft. These positions are in addition to the more-than 250 AMTs the airline is currently hiring across its network and further demonstrate American's commitment to ensuring that its Tech Ops team is positioned to continue providing the best service for customers and team members this summer and beyond.

Air Niugini selects StandardAero for PW123 Pay-Per-Hour support

Air Niugini, the national airline of Papua New Guinea, has re-selected StandardAero to provide Pratt & Whitney Canada PW123 engine maintenance, repair and overhaul (MRO) services in support of the Dash 8 regional turboprops operated by its subsidiary Link PNG. This new pay-per-hour engine maintenance agreement succeeds a previous contract between the two companies, extending StandardAero's partnership with Air Niugini and Link PNG. Air Niugini operates a large domestic and international network to Asia, Australia and the Pacific region. Since its establishment in 1973, the airline now operates a fleet of twenty jet airliners and six regional turboprops, carrying over 1.3 million passengers each year.

TAM gets EASA Part 21 Design Organisation Approval

Täby Air Maintenance, TAM, has received EASA Part 21 Design Organisation Approval, DOA, giving the company the ability to offer enhanced technical services to airlines. Already having a corresponding Production Organisation Approval (POA) in place, TAM is now well suited to offer its customers a wide range of services, including rapid design and production of parts necessary for maintenance, repairs and modifications. "This is a vital step for us, as we now can offer a vast range of technical services, primarily to our current customers who operate a Saab 340/Saab 2000-fleet but also to operators of other aircraft, ranging from biz-jets to major airliners," says Pär Gulle, TAM Managing Director. "Our approvals cover the inhouse design and manufacture of mechanical and structural parts for installation on aircraft, manufacture of metallic and non-metallic parts, allowing us to provide STC and minor design changes and repairs for large and small aircraft (CS23, CS-25, CS-27), related to installation of avionics equipment, electrical systems, structure, hydro mechanical systems, cabin interiors and OSD. - In addition, we now also have an approved Flight Test Organization," Pär Gulle summarized the new offerings.

Brunswick Aviation Services new preferred IFE installation and MRO supplier for AVIAA

AVIAA, the expanding group purchasing organization for business aviation, has announced Brunswick Aviation Services as a new communications and IFE MRO supplier in the USA. The East Coast-based FAA Part 145 certified business works across Gulfstream series; Bombardier Global family; BBJ and Dassault Falcon Jet aircraft platforms, providing IFE systems alongside avionics modifications. Its specialty installations are on the increasingly popular Honeywell Jet ConneX JetWave TM offering, delivering 15 megabits per second of seamless connectivity over the ocean. AVIAA members are guaranteed rapid installation and customization, as quickly as inside two weeks. A preferred Honeywell Center of Connectivity and authorized dealer specializing in JetWave Ka-band connectivity exclusively from Inmar-sat Jet ConneX, Brunswick devotes an entire team to one aircraft in the hangar, at any one time. It is one of the few shops in the USA dedicated to cabin connectivity, internet, Wi-Fi, and inflight entertainment.





Meggitt PLC and OEMServices sign long-term agreement for supply of aftermarket services

Meggitt PLC, a leading international company specializing in high-performance components for the aerospace market, has signed a Long Term Agreement (LTA) with OEMServices to supply component after-market support to operators in the Middle East, Africa and Rus-sia/ CIS. OEMServices is a market leader in providing component, logistic and trading ser-vices to airlines and original equipment manufacturers worldwide. Under the agreement, OEMServices will act as an integrated service provider for Meggitt aftermarket products within the named regions and will also operate a one-stop shop for maintenance, repair and overhaul, using dedicated global service centers and a 24/7 AOG hotline, committed to re-sponding to operator needs within the hour. OEMServices' considerable experience of serving operators in these markets will ensure that Meggitt OEapproved solutions are immediately available, optimizing repair turn-around times and minimizing unscheduled maintenance.

a system approach. The aim of the agreement is to launch a concrete collaboration among the parties for the study, research and evaluation of possible solutions for the member companies of the "ELITE Leonardo Lounge", with the goal of improving their financial soundness and supporting their consolidation and dimensional growth process. Consistent with its role as the National Promotional Institution, CDP promotes Italy's development, responsibly using the country's savings to foster growth and employment by supporting company innovation and the competitiveness, infrastructures and the nation as a whole. With its new 2019-2021 Business Plan, CDP foresees the mobilization of €83 billion of its own resources in loans to companies over the three-year period, through an integrated offer focused on innovation, growth and international expansion. With the goal of reaching 60,000 enterprises over the period of the plan, this offer covers areas such as facilitated credit arrangements, interventions to support exports and internationalization, alternative financing instruments, support for access to credit for companies, and

paths of growth and development by adopting

equity interventions. With this aim in mind, CDP has identified some of Italy's main strategic sectors that have a significant impact on the development of the country's competitiveness, launching specific initiatives – such as this agreement in the Aerospace and Defence field - intended to support companies in those sectors. ELITE is London Stock Exchange Group's international platform, launched in Borsa Italiana in 2012 in collaboration with Confindustria – with which it shares the goal of supporting the best Italian companies by increasingly exploiting synergies – and seeks to accelerate companies' growth through an innovative process of organizational and managerial development aiming at making already deserving enterprises even more competitive, more visible and more attractive to investors at global level. The international ELITE community currently has reached the number of 1,160 companies, of which more than 700 are Italian, with a total of 84 billion euros in revenues and 490,000 employees.

S7 Technics completes first heavy maintenance checks on A320neo

S7 Technics has become the first maintenance, repair and overhaul (MRO) provider in Russia and the CIS to perform base maintenance checks on the advanced Airbus A320neo narrow-body aircraft. The maintenance work was conducted at the company's Moscow Domodedovo airport site and included the 7500 FH / 5000 FC / 24-month 1C-check. A320neos from the fleet of S7 Airlines have two PW1127 engines by Pratt & Whitney. 25 S7 Technics engineers were involved in the first heavy maintenance checks on the A320neos, including eight specialists with B-type licenses. All in all, the task required 5,000 man-hours of labor and took six days for each completed check.

Leonardo, CDP and ELITE sign MoU to support growth

Leonardo, CDP and ELITE have signed a memorandum of understanding (MoU) dedicated to supporting the growth of the companies that make up Leonardo's supply chain. The agreement – which is linked to the partnership announced by ELITE and Leonardo last February and which is part of Leonardo's LEAP2020 program – provides for the launch of a partnership aimed at fostering the growth of Leonardo's strategic suppliers, providing structured financial and non-financial tools and solutions to accelerate their growth and support their development plans. Leonardo, CDP and ELITE have decided to pool their own strengths in order to support the manufacturers on their



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China's Airbus H135 final assembly line starts operations

Airbus Helicopters has expanded its indus-

trial footprint and partnership with China with the opening of the H135 final assembly line (FAL) in Qingdao. The factory is the first helicopter FAL built by a foreign

manufacturer in China, as well as the first H135 FAL outside of Europe. The opening of this FAL follows a cooperation agreement signed between Airbus Helicopters and China in 2016 for the purchase of 100 H135s destined for the Chinese market. Ninety-five of these 100 helicopters will be assembled on this FAL from 2019 onwards. Principal components including the main fuselage, main gearbox kits and rear fuselage will be shipped to Qingdao from Donauwörth, Germany and Albacete, Spain respectively. The 6,500 m² Qingdao plant is composed of four working stations, a paint booth, ground- and flight-test areas, and a delivery center. The site will employ around 40 people, 23 of whom received on-the-job training in Donauwörth. The first aircraft roll-out from Qingdao is expected to take place in the second half of 2019. Operations will start with an annual capacity of 18 helicopters, which could be doubled to accommodate future growth.





Jet Aviation completes integration of Hawker Pacific in Singapore

Jet Aviation has finished integrating its Hawker Pacific operations at Seletar Airport in Singapore, which now run under the Jet Aviation brand. Jet Aviation acquired Hawker Pacific in May 2018. The two physically adjacent companies each operated MRO and FBO facilities in Singapore. The combined MRO and FBO facility in Singapore now operates under the Jet Aviation logo. As a single unified company, Jet Aviation's expanded Singapore operation gains Authorized Service Center status for Embraer and Dassault aircraft, increases its available hangar space to nearly 20,000 m², and more than doubles its headcount, now at 299 employees. It also significantly broadens the range of OEMs and aircraft types it supports, while bringing its national aviation approvals up to 19.

EPCOR entrusted with Air Tahiti Nui's 787 APU support

The French Polynesia airline Air Tahiti Nui has entrusted AFI KLM E&M with the maintenance of the APS5000 auxiliary power units (APU) equipping its fleet of four Boeing 787-9 aircraft. The long-term contract includes repair and overhaul support, as well as the leasing of a spare APU when needed. All the work will be carried out by EPCOR, a wholly owned subsidiary and part of AFI KLM E&M's global MRO network. The contract is the latest development in a strong partnership between Air Tahiti Nui and AFI KLM E&M, which also provides component, engine and line maintenance services for the Polynesian carrier's Dreamliners.

Bombardier unveils Soleil Lighting System on its Global 7500 aircraft

Bombardier Business Aircraft has unveiled the Soleil lighting system, the advanced cabin lighting technology, on the Global 7500 business jet. Designed and developed exclusively for the Global 7500 aircraft, the innovative Soleil lighting system is aviation's first circadian rhythm-based cabin lighting technology fully integrated with the Flight Management System. It introduces the Dynamic Daylight Simulation feature, which can help combat jet lag. The Soleil lighting system's Dynamic Daylight Simulation uses specific combinations of red and blue light wavelengths that studies have shown help to stimulate or suppress the production of melatonin - which assists in regulating the sleep-wake cycle and can help contribute to synchronizing passengers' circadian rhythms to the time at their destination.

LHT presents VIP aircraft cabin design concept jointly developed with Ameco Beijing

At ABACE 2019 (April 16-18), Ameco and Lufthansa Technik are presenting a jointly developed narrow-body aircraft cabin for the first time. 'Nature's Touch' is based on an Airbus ACJ320 Business Jet as cabin concept, but the design anticipates the adaption to a Boeing 737 BBJ configuration as well. The VIP cabin is one of the first concrete and publicly visible results of the cooperation in business aircraft services for Chinese clients, which both companies signed at ABACE 2018. The new business jet cabin layout combines the cultures of East and West, exploring the harmonious beauty in the symbiosis of nature, technology and human demands, offering a brand new business jet travelling experience for customers. Mr. Jan Grube, head of Asia sales at Lufthansa Technik, said: "With this new concept we want to showcase our joint vision for the next generation of cabin technology. Here, Chinese design and German technology play hand in hand. Lufthansa Technik's many years of experience in perfect craftsmanship and engineering know-how and Ameco's deep insights into the Chinese culture and customer wishes form a symbiosis that can fulfil every wish - expressed or unspoken - for Chinese customers." The unique new VIP cabin features a live-cooking aircraft galley, a guest area, a lounge, a dining/meeting area, a cinema, and a master bedroom. Taking full consideration of both customer needs and space efficiency, a convertible sofa, a coffee table in the multi-functional lounge and a bar with transformable dividers are there to ensure flexible usage. The dining/meeting area offers several modes such as business, entertainment, and leisure.





HILITECH opens new production plant

HILITECH has officially opened its new production plant in the Austrian town of Kindberg. HI-LITECH is a joint venture of F. LIST GMBH, an internationally active provider of high-end business jet interiors, and Hintsteiner Group GmbH, a leading expert in lightweight composite technology for motorsports and defense applications. On more than 20,000 ft2 in the first expansion stage, over 100 professionals (planned by 2020) develop and manufacture innovative cabin systems, linings and composite components, mainly from carbon fiber. HILITECH's components count among the lightest on the aircraft market; its portfolio ranges from single components - like sliding doors, tables, toilet seats, shower trays etc. - to full lining accourtements, high-class cabinets and decorative carbon surfaces and applications. HILITECH components are delivered as a complete and tested interior solution, combined with the benefit of high-quality veneer processing and high-gloss finish by and through F/LIST. With special production methods and a unique combination of materials, HILITECH has been able to reduce the weight of components by up to 25% compared to conventional construction techniques. Multiple areas of application and the variety of components in business jets demand variable manufacturing processes, tool application, and materiality defines the final product. For this reason, all tooling is done in-house for maximum precision and flexibility, via a highly modern production infrastructure including autoclave-/prepreg-technology, vacuum processes, compression molding, wet laminate technology, rapid prototyping technologies, CNC milling, prepreg cutter and 3-D scanning.

TAG Aviation undertakes first 60-month check on Bombardier Global 6000

TAG Aviation's Maintenance Services Centre in Geneva has completed its first 60-month check

on a Bombardier Global 6000 aircraft. The aircraft, which is owned by a private customer, underwent its first heavy maintenance check which included routine inspections and repairs, as well as a deep clean of the aircraft's cabin. This important major maintenance milestone event marks the first time TAG Geneva's highly trained technicians have performed a 60M inspection on a Global 6000 aircraft since their status as a Bombardier Authorised Service Facility (ASF) was extended in May 2018 to also include Global business jets.

C&L Aviation Group provides ADS-B solution for JetSuiteX fleet of EMB-135/145 gircraft

C&L Aviation Services (C&L), a C&L Aviation Group company, has been awarded the contract to provide ADS-B solution for the JetSuiteX Fleet of EMB-135/145 aircraft. The program will see C&L provide Honeywell Primus II, as it is the best option for the JetSuiteX fleet to comply with the FAA Automatic Dependent Surveillance-Broadcast-Out (ADS/B-Out) mandate requiring compliance before January 1, 2020. C&L already offers Garmin and Universal ADS-B solutions for a variety of regional and corporate aircraft types including Dash-8, Beech 1900D, EMB-120, Beechjet 400A, Hawker 800 Series, Challenger Series, Gulfstream, and more. C&L also completed an STC certification in the fall of 2018 for an ADS-B solution for the Saab 340 aircraft which can also be used for transponder/ GPS pairing in other Part 23 and Part 25 aircraft.

Universal Avionics partners with AerSale to certify Airbus A320 EFVS solution

Universal Avionics (UA), an Elbit Systems Company, is partnering with AerSale to develop an FAA Supplemental Type Certificate (STC) for the ClearVision™ Enhanced Flight Vision System (EFVS) on the Airbus A320 aircraft. FAA certi-

fication for the retrofit upgrade is expected by the end of the first quarter of 2020, with CAAC and EASA STC validation to immediately follow. The ClearVision EFVS solution includes the SkyLens™ Head-Wearable Display (HWD), a cost-effective and more modern alternative to a traditional fixed Head-Up Display (HUD). The SkyLens high-transparency visor presents high-resolution symbology/imagery, including Enhanced Vision System (EVS), Synthetic Vision System (SVS), and Combined Vision System (CVS) for superior see-through transmission in all weather conditions, day and night. The stateof-the-art Head-Wearable Display requires significantly less installation effort, and can often be installed in just a few days compared to a fixed HUD which requires disassembly of the aircraft cockpit and which can take weeks - all while the aircraft is grounded.

SR Technics breaks ground on new center of excellence for aircraft maintenance in Malta

SR Technics has reported the ground-breaking of the new six-bay hangar including significant back-shop facilities for its center of excellence (CoE) for aircraft maintenance in Malta. The project, as announced in February this year, will enable SR Technics to continuously provide high-quality aircraft maintenance and cabin modification services, now for up to six narrowbody aircraft of the B737 & A320 families, simultaneously. The first bays of the hangar will be completed by the beginning of 2020. Such new CoE does not only open its doors to customers located within the region in a very central hub but it is a great opportunity for Malta's economy as the project requires a significant number of new skilled employees.

StandardAero certifies new seat configurations for Embraer 135/145 aircraft

StandardAero, via its Organization Designation Authorization (ODA) from the Federal Aviation Administration (FAA), was recently awarded a Supplemental Type Certificate (STC) for 30- and 42-seat configurations for Embraer EMB 145. The company had previously received an STC for a 30-seat configuration for the Embraer EMB 135. Both 30-seat configurations allow companies to use these aircraft for Part 135 operations. In addition, the STC allows increased seat pitch which provides a more enjoyable travel experience. The 30-seat STC for EMB 145 aircraft was developed to meet the demands from many customer inquiries. The company has previously sold several STCs per year for the EMB 135 and expects the same for the EMB 145.

StandardAero delivers PT6A-67D engine services to Alpine Air Express

StandardAero is to support a new entry into the cargo aircraft market, the Alpine Air Express Beech 1900D Super Freighter. As a Designated Overhaul Facility (DOF) with distribution rights for the Pratt & Whitney Canada PT6A family, StandardAero is delivering Alpine Air and its customers with responsive PT6A-67D support for its Super Freighter program. Developed through a Supplemental Type Certificate (STC) program by well-known scheduled air cargo services provider Alpine Air, the Super Freighter converts the Beech 1900D into a highly capable cargo aircraft with a 40% capacity increase over the established 1900C freighter. Powered by the reliable PT6A-67D, the Super Freighter also offers a 23% range advantage over the 1900C, along with a 7% speed increase. Equipped with a large 62 in. x 25 in. rear cargo door and fitted with a new Z-track cargo system, the Super Freighter's 900 cu. ft. cabin can accommodate a useful payload of 7,439 lb. Alpine Air secured STC certification of the Super Freighter in October 2018, and the aircraft is now in operation in support of Alpine Air's client base, which includes the United Parcel Service (UPS) and the U.S. Postal Service (USPS). Alpine Air is now undertaking full-rate conversions of Beech 1900Ds to Super Freighter configuration, both for its own use and for sale to third-party operators.

ST Engineering secures aerospace contracts worth S\$1.3 billion for 1Q2019

Singapore Technologies Engineering (ST Engineering) has announced that its Aerospace sector has secured new contracts worth about S\$1.3 billion (US\$0.95 billion) for the first quarter (1Q) of 2019. These include a 10-year service agreement from a long-time customer, a major North American operator, to provide heavy maintenance checks for its entire fleet of Airbus A300s and Boeing 757s. This agreement, as announced on February 25, 2019, covers over 160 wide-body and narrow-body aircraft to be serviced at the sector's U.S. facilities in San Antonio and Pensacola starting in 2020. The aerospace sector also secured contracts from new airline customers in Africa and Europe to provide component repair services to

support their Bombardier Q400s. Other contracts cover engine wash and equipment leasing solutions to customers in the Middle East and Europe. The sector conducted a total of 2,562 engine washes in 1Q 2019.

RUAG STC integrates customized avionics and night vision capabilities for two new Airbus Helicopters H125s

RUAG has designed, developed and integrated a Supplemental Type Certificate (STC) featuring Night Vision Imaging Systems (NVIS) for the new Airbus Helicopters H125. RUAG realized the STC on behalf of customers Swiss Federal Office of Civil Aviation (FOCA) and Swiss Transportation Safety Investigation Board (STSB). Approved by the European Aviation Safety Agency (EASA), the STC is specifically designed to maximize situational awareness for all mission flights, day or night. RUAG integrated the customized avianics package, NVIS and cockpit upgrade STC on two new Airbus Helicopters H125s (formerly AS350), belonging to FOCA and STSB. The original equipment manufac-





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turer (OEM), Airbus Helicopters, delivered both aircraft directly to RUAG in Alpnach, Switzerland, from their production line in France.

Pattonair announces new contract win with TEXL

Aerospace and defense supply chain provider, Pattonair, has won a new contract with MRO specialist, TEXL, the China-based joint venture between Swire Group and GE. Pattonair is one of the most innovative providers in the MRO sector and this new award with TEXL, supporting the GE90 engine, draws on its track record and experience of providing world class service and availability, together with innovative and value-adding solutions, including its market-leading agile vending machines.

Delta CEO highlights long-term TechOps growth

Delta CEO Ed Bastian outlined the importance of the airline's maintenance, repair and overhaul business to its long-term future at the annual MRO Americas conference in Atlanta. The business is expected to generate close to US\$1 billion in revenue this year, he said, and is on a path to double that figure over the next five years. Bastian highlighted the investments Delta has made in TechOps, particularly the new engine shop and test cell which recently opened. "These are investments in Delta's future," he said, noting that the new state-of-the-art test cell is the first built in the U.S. in more than 20 years. He also stressed the importance of Delta's workforce development to ensure a steady pipeline of new Delta people in coming years. "We're going to be hiring 500 AMTs just this year," he said.

Manta Air signs five-year maintenance agreement with ATR

Manta Air, the new domestic carrier of the Republic of Maldives, has signed a Global Maintenance Agreement (GMA) with European turboprop manufacturer ATR. This five-year contract covers the Maldivian airline's full fleet for the repair and overhaul of easily replace-able components (Line Replaceable Units), propeller maintenance and an on-site leased stock of spare parts. This long-term agreement also includes on-site technical support through which a dedicated Customer Support representative assists Manta Air in their daily operations. The airline is benefitting from tailored recommendations to make an optimal start to operations, based on its very specific needs and ATR's ex-

pertise to enhance aircraft reliability. The first two ATR 72-600s of Manta Air, secured through Nordic Aviation Capital, were delivered in late 2018, and a third aircraft was delivered in early March 2019. With their dual-class configuration of 64 seats, Manta Air's ATR 72-600s will help improve connectivity for the hospitality industry in the beautiful Maldivian atolls. They will be mainly operated on short sectors where ATR aircraft have already proven their operational and economic efficiency.

AOG-247 signs with B&H Worldwide in the U.K. and Germany

B&H Worldwide, the aerospace logistics provider, has signed a multi-year deal to provide the fast-expanding aircraft and engine components supplier, AOG-247, with warehouse and inventory management services at both London Heathrow and Frankfurt. Under the terms of the contact B&H will provide full inventory management at both locations including complete consignment handling and access to the B&H FirstTrac online portal. B&H will initially be responsible for managing the U.K. headquartered company's commercial engine inventory (introducing CFM56-7 Life Limited Parts) which AOG-247 will base from B&H's Frankfurt warehouse. "As with all component suppliers, AOG-247 need to be very close to their markets and by utilizing space at both our Heathrow and Frankfurt facilities they are well placed to meet any of their own customers' requirements while at the same time having the scope to expand their activities in the years to come," states B&H Worldwide Group CEO, Stuart Allen.

Spatial selected by Azul to manufacture A320/330 Cabin Emergency Evacuation Trainer

Spatial, a provider of cabin crew training simulators, is to manufacture a hybrid A320/A330 Cabin Emergency Evacuation Trainer (CEET) for Azul. Manufactured at Spatial's 50,000-squarefeet facility in Dubai, the CEET will be specifically designed to provide a highly realistic training environment for the Brazilian airline's cabin crew. The state-of-the-art simulator will enable crew to become proficient in vital Safety and Emergency Procedures (SEPs) of the A320 aircraft type including door operation, evacuation, fire and smoke training, cabin communications and aircraft systems familiarization, secure cockpit procedures and emergency equipment usage. The CEET will be fitted with a fully functional galley, cabin lighting, passenger seating, replica lavatories, overhead stowage and attendant seats so that the simulator can also be used for passenger service and management

training. The CEET will be fitted with an A330 door that will enable crew to train in the safe operation of this door type under a variety of normal, abnormal and emergency conditions.

First time for 3-D print from CATIA V5

The European "Bionic Aircraft" research project has reached yet another milestone for additive manufacturing: For the first time ever, components can be printed directly from the CATIA V5 CAD system. This is made possible with the interface developed by CENIT. With it, there is no need to leave the development environment. All process steps, including post-processing, can be mapped in CATIA V5. Now, exact data is available in CATIA V5 for removing the support structures during 3-D part post-processing elaborate reconstructions of the model and the support structures are a thing of the past. Future users will be able to reduce their time and costs resulting from the closed process chain for additive manufacturing, because now the development process for a part until series maturity has become significantly leaner. Jochen Michael, Senior Consultant at CENIT, provides background information: "Support structures of additive manufactured components should not be removed manually in series production, but instead with NC machines. When creating NC programs of this type, the STL format, which in the past was used primarily for the representation of component and support structures in the 3-D print data chain, is inadequate, because it can only represent the geometry imprecisely. In that case, the model and support structures must be reconstructed for refinishing, resulting in unnecessary expense. We can prevent this with the 3-D print from CATIA V5 directly, because the exact geometry data for this post-processing is already available." In order for the 3-D print to be successful via CATIA V5, CENIT provides support to the engineer in the preparation of data from topology optimization. During topology optimization, in a computer-aided process, the material for the component is reduced to the amount that is absolutely necessary to meet the requirements. The CATIA V5 Slicer, newly developed by CENIT, then slices the component into layers. The contours of these slices are sent directly to the 3-D printer via the post-processor developed by CENIT.

Rolls-Royce expands services infrastructure for business aircraft

Rolls-Royce is further strengthening its global network of Authorised Service Centres (ASCs) for CorporateCare® customers. The global ASC network forms an essential component of Rolls-Royce's services portfolio for business air-

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craft and adds to its existing global aftermarket capabilities. Rolls-Royce has 76 ASCs with key maintenance providers worldwide allowing for rapid response times to meet its customers' needs. The latest member of the ASC network is Bombardier's Tianjin Service Centre, supporting the BR710A2 engines, which power the successful Bombardier Global Express, Global Express XRS, Global 5000 and Global 6000 aircraft. The powerful service infrastructure of the ASC network is complemented by On Wing Service specialists in the USA, Europe, Middle East and Asia as well as a number of spare parts and

lease engine storage locations, all placed strategically around the world. Recently Rolls-Royce opened a new store for business aviation parts in Beijing to support its growing customer base in Greater China and Asia-Pacific.

HAECO Group selects Boeing as supply chain solution provider

Boeing and HAECO Group have signed a consumables and expendables services agreement

naming Boeing as an integrated supply chain solution provider for global MRO support. The agreement, managed by Boeing Distribution Services Inc. (BDSI), accelerates availability of Boeing's parts and products to customers and takes advantage of stock availability and process efficiencies realized through Boeing's acquisition of KLX Aerospace Solutions, now known as BDSI. Boeing will support HAECO with its portfolio of Boeing proprietary parts, vendor parts and distributed products that are readily available from multiple centers of excellence around the globe.

Finance News

Embraer posts fifth straight quarter loss ahead of Boeing deal

A combination of the delivery of fewer planes and a surge in spending ahead of the deal which will see Boeing take an 80 per cent stake in the commercial jets arm of the Brazilian planemaker has resulted in Embraer posting a US\$42.5 million loss for the first quarter, 2019. Revenue fell 26 percent to US\$281 million in the commercial aviation section as a result of the delivery of only 11 jets as opposed to 14 for the same quarter last year, while revenue for the whole company fell 14.1 per cent. Despite the weak results and a fall of US\$512 million in available cash, Embraer remains positive for its 2019 delivery forecast and is looking to boost numbers over the coming quarters. In all, Embraer hopes to deliver between 85 and 95 passenger jets and between 90 and 100 executive jets. In 2018 90 passenger and 91 executive jets were delivered. The crash involving one of its yet-to-be-launched KC-390 military planes cost the company many millions of dollars, weak demand for executive jets and reduced deliveries of commercial jets created a considerable burden. However, the selling of 150-seat commercial jets has been profitable for several consecutive quarters, which highlights the concerns many have that Embraer is selling off the only profitable segment of the business. Though the sale to Boeing is still awaiting regulatory approval, current problems with its 737 MAX program are not expected to delay the acquisition of a stake in Embraer. Embraer's Chief Financial Officer Nelson Salgado also confirmed that Boeing's problems would "absolutely not" boost demand for Embraer's planes.

AeroCentury posts first-quarter net loss of US\$1.3 million

AeroCentury, an independent aircraft leasing company, has reported a first-quarter net loss of US\$1.3 million, compared to a net income of US\$0.3 million for the first quarter of 2018. First-quarter 2019 results reflect the combined operations of AeroCentury and its subsidiary, Jet-Fleet Holding (JetFleet), which was acquired on October 1, 2018. EBIT-DA was US\$4.4 million compared to US\$1.9 million in the preceding quarter and US\$5.7 million a year ago. Average portfolio utilization was 98% during the first quarter of 2019, compared with 95% in the preceding quarter. The increase was a result of the sale of off-lease aircraft during 2018. Average portfolio usage was 90% during the first quarter of 2018. The year-over-year increase was a result of the net effect of the acquisition of two aircraft during the second quarter of 2018 and sales of off-lease assets during 2018. Total revenue and other income increased 18% to US\$7.6 million for the first quarter of 2019, compared

to US\$6.4 million in the preceding quarter.

SIA Engineering Group posts profit of \$\$160.9 million for full year 2018-19

SIAEC Group has posted full-year 2018-19 results. Revenue was S\$1,020.9 million, a decrease of S\$74.0 million or 6.8%, mainly due to a decline in airframe and fleet management revenue. Expenditure at S\$964.1 million was lower by S\$52.0 million or 5.1%, largely due to a reduction in material and subcontract costs in line with the lower workload. Operating profit at \$\$56.8 million was \$\$22.0 million or 27.9% lower year-on-year. Share of profits of associated and joint venture companies increased by \$\$4.1 million or 3.7% to \$\$113.9 million. Notwithstanding a one-time tax charge and an upward revision in tax provision by certain engine and component centers in FY2018-19, contributions from the engine and component segment increased \$\$5.5 million, to S\$115.4 million. This was partially offset by a S\$1.4 million decrease in contributions from the airframe and line maintenance segment. Profit attributable to owners of the parent company was \$\$160.9 million for the financial year ended March 31, 2019, a decrease of \$\$25.9 million or 13.9%. Profit last year included a S\$15.0 million gain on the sale of the Group's shares in an associated company, Asian Compressor Technology Services Company Limited (ACTS).

ATSG reports strong first quarter 2019 results

Air Transport Services Group, a leading provider of medium wide-body aircraft leasing, contracted air transportation and related services, has reported consolidated financial results for the quarter ended March 31, 2019. Results as compared with the first quarter of 2018 include: Customer revenues were U\$\$348.2 million, up U\$\$145.1 million, or 71%. Omni Air International, acquired in November 2018, contributed U\$\$135.8 million to external ATSG revenues, reflected in revenues of the ACMI Services segment. GAAP Earnings from Continuing Operations were U\$\$22.6 million, U\$\$7.0 million higher than the prior period. Adjusted Earnings from Continuing Operations (non-GAAP) increased 26% to U\$\$26.0 million. Adjusted EBITDA from Continuing Operations (non-GAAP) were U\$\$113.8 million, up U\$\$41.9 million, or 58%. Capital spending was U\$\$91.9 million, up 16%. Capital expenditures in the first quarter of 2019 included U\$\$70.5 million for the purchase of four Boeing 767 aircraft and for freighter modification costs.

Panasonic Avionics Corporation and TAP Air Portugal have signed an agreement

Panasonic Avionics Corporation (Panasonic) and TAP Air Portugal have signed an agreement to provide inflight entertainment and connectivity (IFEC) solutions for the carrier's new fleet of 14 A321neo LR aircraft. Panasonic's X Series inflight entertainment system, along with a suite of connectivity services, are being line-fit installed on the new aircraft. TAP Air Portugal passengers will be able to enjoy a personalized and immersive home theatre entertainment experience with HD screens and surround sound audio and video entertainment available on demand. The system also comes equipped with in-seat power USB charging facilities at every seat. All the new aircraft are being fitted with Panasonic's inflight Wi-Fi service, with a host of next-generation connectivity benefits including fast internet, all powered by its new satellite modem which offers bandwidth up to twenty times greater than previously available. The news follows the recent agreement between TAP Air Portugal and Panasonic to provide inflight entertainment and connectivity (IFEC) solutions for the carrier's new fleet of A330-900neo aircraft. The carrier is the first airline to operate Airbus' next-generation A330-900neo, and will operate 21 of the aircraft.

Willis Lease Finance reports quarterly pre-tax profit of US\$27.8 million

Willis Lease Finance Corporation has reported pre-tax profit of US\$27.8 million and total revenues of US\$103.8 million in the first quarter of 2019. The Company's first-quarter 2019 pre-tax results were driven by continued revenue growth in the core leasing business, an increase in trading activity and continuing spare parts sales. Aggregate lease rent and maintenance reserve revenues were US\$73.7 million for the first guarter of 2019. Total revenue increased by 47.2% to \$103.8 million in the first quarter of 2019, compared to US\$70.5 million in the same guarter of 2018. Lease rent revenue achieved a record quarterly high of US\$48.4 million in the first quarter of 2019; 22.0% growth from US\$39.6 million in the same quarter of 2018. Quarterly Maintenance reserve revenue increased by US\$9.9 million, or 64.2%, to US\$25.4 million in the first quarter of 2019, compared to US\$15.4 million in the prior year period. Spare parts and equipment sales increased by 34.8% to US\$17.5 million in the first quarter of 2019, compared to US\$13.0 million in the same quarter of 2018.

Leonardo reports first-quarter results

Leonardo has released that at the end of the first quarter, new orders amounted to €2,518 million and showed, compared to the first three months of 2018 (€2,164 million), an increase of 16.4%, mainly due to Defence Electronics & Security. Order Backlog amounted to €36,575 million, increasing 9.6% compared to €33,360 million in 2018 and ensuring a coverage in terms of equivalent production equal to about three years. Revenues amounted to €2,725 million, an increase of 11.2% compared to the first quarter of 2018 (€2,451 million), mainly in relation to Defence Electronics & Security and, to a lesser extent, to Helicopters. EBITA, amounted to €163 million, an increase of 6.5% compared to €153 million in the first quarter of 2018; EBIT amounted to €156 million, showing an improvement of €35 million (+29%), compared to the first quarter of 2018 (€121

million), due to an improved EBITA and also to the decrease in restructuring costs and lower amortization of assets deriving from the business combination of Leonardo DRS. Net Result before extraordinary transactions amounted to €77 million, (€50 million in the first quarter of 2018) and benefited from both an improved operating result and from lower restructuring costs and lower amortization of assets deriving from Purchase Price Allocation, as well as financial expenses. (€1.00 = US\$1.13 at time of publication.)

4,000 jobs at stake as Bombardier puts Northern Ireland and Morocco plants up for sale

Only three months after acquiring the wing manufacturing unit from Triumph Group, Bom-bardier has announced its intention to sell both its wing-making plant in Belfast, Northern Ireland, and its aerostructures plant in Morocco. While both enterprises supply customers beyond Bombardier, 3,600 jobs are now at stake in Belfast, while the Morocco unit has over 400 employees. The move comes as part of Bombardier's strategy which, according to a company statement, will see the "strategic formation of Bombardier Aviation, consolidating all aerospace assets into a single, streamlined and fully integrated business." Core assets will be in Montreal, Mexico and Texas, according to a Bombardier statement from Thursday, May 2, the division being led by David Coleal, the head of Bombardier's business-jet operations. The Canadian plane and train maker confirmed it would look for a buyer that would "operate responsibly and help us achieve our full growth potential," promising to work closely with employees and unions during the sale process. The trade union Unite has been seeking reas-surances that the Northern Ireland plant will remain operational if a buyer cannot be found. While the set-up may be of interest to Airbus, which has invested heavily in what is a current JV with Bombardier for the former Bombardier CSeries, now Airbus A220 family of single-aisle jets, Brexit uncertainty may well hold the French plane maker back. The principal prob-lem here lies in the lack of clarity over trade tariffs between the U.K. and Europe that will be put in place post Brexit.

Spirit AeroSystems reports solid first-quarter results

Spirit's first-quarter 2019 revenue was \$2.0 billion, up 13% compared to the first quarter in 2018. This increase was primarily driven by higher production volumes on the Boeing 737 and 787 programs, favorable model mix on the Boeing 737 program, and higher revenue recognized on the Boeing 787 program, partially offset by lower non-recurring activity on certain Boeing programs. Spirit's backlog at the end of the first quarter of 2019 was approximately US\$48 billion, with work packages on all commercial platforms in the Boeing and Airbus backlog. Operating income for the first quarter of 2019 was US\$233 million, up compared to US\$160 million in the same period of 2018. This increase was primarily due to higher production volume and model mix on the Boeing 737 program, the absence of forward losses recognized on the Boeing 787 program during the first quarter of 2018, and higher margin recognized on the Airbus A350 program. First quarter EPS was US\$1.55, up compared to US\$1.10 in the same period of 2018. First quarter adjusted EPS was US\$1.68, excluding the impact of the planned Asco acquisition. Cash from operations in the first quarter of 2019 was US\$242 million, up compared to US\$167 million in the same quarter last year, primarily due to higher receipts from customers and

lower incentive compensation payments. Adjusted free cash flow in the first quarter of 2019 was US\$209 million, compared to US\$118 million in the same period of 2018. Cash balance at the end of the quarter was US\$1.2 billion, which provides the funds necessary to complete the acquisition of Asco.

PGGM Infrastructure Fund takes 25% interest in Macquarie AirFinance

Macquarie Group announced on Friday, May 3, 2019, that PGGM Infrastructure Fund (PGGM), a leading Dutch pension investor, will take a 25% interest in Macquarie AirFinance. Macquarie AirFinance was established in 2006 and has evolved to become a leading and successful player in the aircraft operating lease industry, with a portfolio at March 2019 of 196 aircraft and 60 aircraft orders. The investment is PGGM's first in the aircraft leasing sector. PGGM has capacity to deploy additional capital to support the growth of Macquarie AirFinance. Macquarie's Head of Transportation Finance, Stephen Cook said: "We are delighted to have PGGM as a shareholder in Macquarie AirFinance. PGGM is a strong, long-term institutional investor and is an ideal partner for Macquarie to support our strategy for continued investment and growth in the aircraft operating lease sector. John Willingham will continue as Chief Executive Officer of the world-class Macquarie AirFinance team."

AerCap reports financial results for first-quarter 2019

AerCap has reported that lease revenue for the first quarter was US\$1,162.1 million, compared with US\$1,120.3 million for the same period in 2018, primarily due to the delivery of new-technology aircraft from January 2018 through March 2019, resulting in a US\$2.3 billion increase in average lease assets. Net income was US\$234.2 million, compared with US\$265.4 million for the same period in 2018. Net income was primarily affected by lower net gain on sale of assets, partially offset by higher lease rents. AerCap's sales volume was significantly lower in the first quarter of 2019 than in the first quarter of 2018, resulting in lower net gain on sale of assets. This was partially offset by higher lease rents primarily resulting from the increase in average lease assets. As of March 31, 2019, AerCap's portfolio consisted of 1,400 aircraft that were owned, on order or managed. The average age of its owned fleet as of March 31, 2019 was 6.2 years and the average remaining contracted lease term was 7.4 years.

Airbus reports first-quarter 2019 results

Airbus has reported first-quarter (Q1) 2019 consolidated financial results and maintained its guidance for the full year. Gross commercial aircraft orders totaled 62 (Q1 2018: 68 aircraft) and included 38 A350 XWBs. Net commercial aircraft orders of -58 (Q1 2018: 45 aircraft) after 120 cancellations mainly reflect the winding down of the A380 program and the commercial agreement with Etihad as communicated in the full-year 2018 disclosure. The commercial aircraft backlog stood at 7,357 aircraft as of March 31, 2019. Net helicopter orders of 66 units (Q1 2018: 104 units) included 20 Super Puma Family and 16 H145s. Airbus Defence and Space's order intake by value totaled € 1.1 billion. Consolidated revenues increased to €12.5 billion (Q1 2018: € 10.1 billion), mainly re-

flecting the higher commercial aircraft deliveries as the production ramp-up continued. At Airbus, a total of 162 commercial aircraft were delivered (Q1 2018: 121 aircraft), comprising eight A220s, 126 A320 Family, five A330s, 22 A350s and one A380. Airbus Helicopters delivered 46 units (Q1 2018: 52 units) with increased revenues reflecting the higher volume in services. Airbus' EBIT adjusted improved to €536 million (Q1 2018: € -41 million), mainly reflecting the A320neo ramp-up and premium as well as further progress on the A350 financial performance. Consolidated EBIT (reported) amounted to €181 million (Q1 2018: € 199 million), including adjustments totaling a net € -368 million. A total of 96 A320neo Family aircraft were delivered in the quarter. The ramp-up of the Airbus Cabin Flex version of the A321 continued in Q1 but remains challenging. Airbus is working to improve execution in its internal industrial systems and monitoring engine performance. The overall A320 Family program is on track to reach 60 aircraft per month by mid-2019 and preparing for a rate of 63 per month in 2021. On the A330 program, five aircraft were delivered in the first quarter, including three NEOs. A330neo deliveries continue to ramp-up and Airbus is working closely with its engine partner and suppliers to deliver in line with customer commitments. The flight test campaign of the A330-800 variant is progressing. Airbus Helicopters' EBIT Adjusted totaled €15 million (Q1 2018: € -3 million), reflecting lower deliveries and higher volume in services. (€1.00 = US\$1.12 at time of publication.)



CL5710 Business Class Seat

Photo: Recard

Recaro Aircraft Seating posts 22% growth and revenue of nearly €600 million

Aircraft seat manufacturer Recaro grew its revenues with 22% to almost €600 million (US\$666 million) in 2018. With this result, Recaro continues its more than 15 years of non-stop double-digit growth. The global passenger seat market grew approximately 5% per year in that same period. Recaro will invest 10% of this positive revenue back into the company to fuel further growth. On the one hand this will be utilized to ignite expansion in Germany and globally, and on the other it enables extra investment in research and development. This will help Recaro achieve its goal of becoming the number-one supplier in the business-class seat market in the long run.

MTU Aero Engines reports profitable growth in the first quarter of 2019

In the first quarter of 2019, MTU Aero Engines AG saw its revenues increase by 11% from €1,016.4 million to €1,131.2 million. The

group's operating profit grew by 7% to €187.6 million (1-3/2018: €175.1 million), resulting in an adjusted EBIT margin of 16.6% (1-3/2018: 17.2%). Net income increased in line with EBIT adjusted, rising by 8% from €123.3 million to €133.5 million. In the first quarter, MTU recorded the highest revenue growth in the commercial engine business. Revenues here increased by 21% from €318.7 million to €385.6 million. Revenues in the commercial maintenance business increased by 6%, rising from €618.2 million in the first quarter of 2018 to €655.1 million. Revenues in the military engine business increased by 15% to €105.1 million in the first quarter (1-3/2018: €91.3 million). MTU's order backlog reached €18.5 billion (Dec. 31, 2018: €17.6 billion) at the end of March 2019. "In arithmetical terms, this corresponds to a workload of almost four years and reflects MTU's strong market position," said Winkler. The majority of these orders relate to the V2500 and the Geared Turbofan™ engines of the PW1000G family, in particular the PW1100G-JM for the A320neo. Commercial maintenance business reported the highest percentage growth in earnings, with EBIT adjusted increasing by 10% to €56.8 million (1-3/2018: €51.5 million). The EBIT margin rose from 8.3% in the first quarter of 2018 to 8.7% in the same period of 2019. In the OEM segment, MTU increased its first-quarter earnings by 6% from €123.4 million to €130.5 million. The EBIT margin stood at 26.6% compared with 30.1% at the end of March 2018. (€1.00 = US\$1.12 at time of publication.)

Latecoere welcomes Searchlight Capital's 26% investment

Activist investor Searchlight Capital Partners (Searchlight) has confirmed its intention to acquire a 26% stake in Latecoere, the French aeronautics company, through the acquisition of existing stakes held by Apollo Capital Management, Monarch Alternative Capital and CVI Partners, at a price of US\$4.31 (€3.85) per share. The total investment is valued at US\$106.8 million. A number of French companies have been targeted by so-called Activist investors who feel they have been underperforming, including Elliott, which is piling pressure on drinks group Pernod, CIAM is tussling with reinsurer Scor, and Amber Capital has acquired a stake in Lagardere, according to Reuters. Latecoere cut its earnings outlook last December after start-up costs related to new contracts hit its margins and cash flow, although the company's latest set of results earlier this month showed signs of a recovery. Latecoere said it welcomed Searchlight's move and its presence on its board of directors. "The company welcomes this proposed transaction, Searchlight having shown on this occasion its support for the strategy proposed by management and approved by the board of directors," Latecoere said in a statement. It is understood that Searchlight will propose three candidates to join the board of directors.

WNG Capital raises US\$438 million

WNG Capital, the global aviation investment manager and lessor of narrow-body commercial aircraft, has announced the final closing of WNG Aircraft Opportunities Fund II, L.P. with US\$438 million of capital commitments. WNG II is expected to acquire approximately 40 to 60 Boeing and Airbus narrow-body aircraft with ages ranging from 15 to 20+ years and remaining lease terms of 12 to 48 months. As a result of WNG's strong pipeline, the Fund has already closed on its first investment, signed a letter of intent for a second deal, and has several proposals outstanding for additional

aircraft. Since the Firm's inception in 2009, WNG has managed 60 aviation assets valued in excess of US\$800 million. Continuing the value-creation strategy utilized in the management of these prior investments, WNG II is expected to primarily invest in mid-life and older narrow-body commercial aircraft and aircraft-related assets manufactured by Boeing and Airbus.

AviaAM Leasing posts net profit of €29.1 million for 2018

Aircraft leasing and trading company AviaAM Leasing, generated €49.3 million in revenue (including net gain on sale of aircraft) and posted a record net profit of €29.1 million for the year ended 31 December 2018. The net profit grew by 9% as compared to 2017 (€26.8 million)Last year the company together with its joint venture, AviaAM Financial Leasing China acquired and leased 14 brandnew and mid-life aircraft and completed six aircraft sale transactions with leases attached. The company cooperated with airlines such as Air Transat, Thomas Cook, Avion Express, Aeroflot and OK Airways. Furthermore, AviaAM Financial Leasing China, a joint venture of AviaAM Leasing and Henan Civil Aviation Development and Investment Company, attracted a new strategic partner - the world's largest insurance and finance group Ping An Insurance (Group) Company of China. The current value of the joint venture's aircraft fleet reached almost €0.9 billion. (€1.00 = US\$1.11 at time of publication.)

Boeing Commercial Airplanes' first-quarter revenue down 9%

Boeing Commercial Airplanes first-quarter revenue for 2019 was US\$11.8 billion, down 9%, reflecting lower 737 deliveries partially offset by a favorable mix. First-quarter operating margin was 9.9% reflecting lower 737 deliveries partially offset by a higher margin on the 787 program. The reported margin also reflects increased costs associated with the recent 737 production rate adjustment. During the quarter, Commercial Airplanes delivered 149 aircraft compared to 184 the previous year. Boeing increased the production rate for the 787 to 14 airplanes per month. Commercial Airplanes captured several wide-body orders during the quarter, including orders for 18 777X airplanes for British Airways parent company IAG, 20 787 airplanes for Lufthansa, and 10 787 airplanes for Bamboo Airways. The first 777X flight-test airplane rolled out of the factory, and the program remains on track for flight testing this year and first delivery in 2020. Commercial Airplanes backlog remains healthy with over 5,600 airplanes valued at US\$399 billion.

IFS reports 67% increase in license revenue

IFS, the global enterprise applications company, has posted its financial results for the first quarter that ended March 31, 2019. Net revenue for the quarter increased 29% to US\$154 million on the back of a remarkable 67% growth in license revenue, mainly driven by a massive influx of new customers across the globe. These outstanding results confirm both the capabilities of IFS's offering and the company's focus on providing sensible enterprise applications that deliver value. Adjusted EBITDA grew by nearly 70% during the quarter. While increased revenue was the major driver behind the

increase in profits, IFS has focused on significantly reducing the historical investments in the parts of the business which were either non-core or not contributing value to customers. This singular focus on what customers appreciate—and what they need to continue to challenge their respective industries—remains the guiding principle at IFS. IFS sees the opportunity to continue to incrementally expand its margins as the business grows to scale.

CDB Aviation closes US\$525 million unsecured credit facility

CDB Aviation, a wholly owned Irish subsidiary of China Development Bank Financial Leasing (CDB Leasing), announced the closing of a US\$525 million unsecured credit facility, which marks the company's first such syndicated transaction. The five-year facility, which will be used for general corporate purposes, was led by Bank of China (Hong Kong) Limited, Crédit Agricole Corporate and Investment Bank, Goldman Sachs (Asia) L.L.C., Mizuho Bank, Ltd., and Société Générale Corporate and Investment Banking as Mandated Lead Arrangers and Bookrunners. Crédit Agricole Corporate and Investment Bank acted as the facility Agent.

United Technologies reports first-quarter 2019 net income of US\$1.3 billion, up 4%

United Technologies has reported first-quarter 2019 results. Sales of US\$18.4 billion were up 20% over the prior year, including 8 points of organic sales growth and 15 points of acquisition benefit offset by 3 points of foreign exchange headwind. GAAP EPS of US\$1.56 was down 4% versus the prior year and included 25 cents of nonrecurring charges and 10 cents of restructuring. Nonrecurring charges included 16 cents of Rockwell Collins inventory step-up amortization, 6 cents of costs related to the UTC portfolio separation activities and 3 cents of other net charges. Adjusted EPS of US\$1.91 was up 8%. First-quarter results exceeded expectations primarily due to better-than-expected Collins Aerospace and Otis results as well as a slightly favorable effective tax rate. Net income in the quarter was US\$1.3 billion, up 4% versus the prior year. Cash flow from operations was US\$1.5 billion and capital expenditures were US\$363 million, resulting in free cash flow of US\$1.1 billion. In the quarter, Collins Aerospace commercial aftermarket sales were up 64%, and up 9% organically. Collins Aerospace commercial aftermarket sales were up 12% on a pro forma basis including Rockwell Collins. Pratt

& Whitney commercial aftermarket sales were up 1%. Pratt & Whitney continues to expect commercial aftermarket sales to be up midsingle digits for the full year. Equipment orders at Carrier were down 2% organically in the quarter after being up 10% in the first quarter of 2018. Otis' new equipment orders were down 1% at constant currency in the quarter and up 3% on a rolling twelve-month basis. UTC updates its 2019 outlook and now anticipates adjusted EPS of US\$7.80 to US\$8.00, up from US\$7.70 to US\$8.00.



Aerial view of MRAS facility in Baltimore, USA

Photo: ST Engineering

ST Engineering completes acquisition of MRA Systems

Singapore Technologies Engineering refers to its earlier announcements made on September 13, 2018, March 29, 2019 and April 14, 2019, in relation to the proposed acquisition by its U.S. subsidiary, Vision Technologies Aerospace Incorporated, of a 100% ownership in MRA Systems (MRAS). On April 18, 2019, the Proposed Acquisition was completed at a net consideration of approximately US\$506m (S\$683m) in cash, subject to post-completion adjustments for debt-like items and working capital. MRAS is now an indirect wholly-owned subsidiary of ST Engineering, whose aerospace capabilities now include the Original Equipment Manufacturer business of high-value nacelle systems and replacement parts. With the inclusion of MRAS, ST Engineering has greatly boosted its network of facilities in the U.S. to support regional and global customers. Its extensive capabilities in the U.S. ranges from services in airframe maintenance, VIP completions and aircraft interior refurbishment to current nacelle design and manufacturing.

Information Technology

HAECO Group has selected AMOS as its preferred MRO software to be deployed in its Hong Kong operations. The main objective of this large-scale implementation project is to replace the current system – consisting of many point-to-point solutions – by a fully integrated end-to-end solution. **HAECO Hong Kong** will apply AMOS across its wide spectrum of services, including core airframe services and line services. HAECO Hong Kong starts the AMOS implementation while the framework agreement lays the foundation for implementing AMOS in other HAECO group companies. HAECO Hong Kong will rely on **Swiss-AS**

AMOS Operation Service (AOS) – with Swiss-AS managing all the tasks related to the AMOS application server and database server administration – to ensure a smooth running of the system.

Air Arabia has chosen AMOS as its new MRO software to address the demands of a dynamic, fast-changing industry. In a ceremony held at the headquarters of Air Arabia in Sharjah, the CEOs of **Swiss-AS** and Air Arabia signed the contracts, paving the way to implement AMOS and marking the beginning of a long-term partnership. As the low-cost

carrier is performing light and heavy maintenance in-house, Air Arabia has opted for the AMOS Airline-MRO Edition, which provides all the functions needed to efficiently cover the entire spectrum of the carrier's maintenance operations. Air Arabia envisages a significant fleet increase with the intention to operate 100+ aircraft by 2025. With AMOS, the Middle Eastern carrier has taken a sustainable and future-proof decision that will not only support the fleet growth but also the digital transformation process towards paperless operation. Besides AMOSdesktop, the budget carrier will implement AMOSmobile to equip its maintenance staff in the hangar and on the apron with a fully integrated and easy-to-use software tool.



HeliStream, the U.S. flight training specialist, has selected Rusada's ENVISION as its MRO and Flight Operations software. From its base in Costa Mesa, California, HeliStream offers flight training as well as a range of other services including utility/aerial crane, firefighting, charters and photography. To do this, the operator utilizes a fleet of 25 helicopters comprising of Robinson, Airbus, Bell, Sikorsky, and MD models. HeliStream was founded by Rod Anderson and Barbara Perrin, both U.S. Army-trained pilots, who envisioned a flight school that combined the military's syllabus-directed and structured training program with a fleet maintained to the highest FAA standards. HeliStream has signed up for ENVISION's Fleet Management, Base Maintenance and Flight Operations modules as well as four others, which will be implemented over the coming months. Go-live is set for September 2019.

Jet-Ops FZE has chosen OASES, Commsoft's MRO IT system to support its current fleet of five Cessna 208 Caravan seaplanes. Based in Dubai, Jet-Ops specializes in the management and leasing of seaplanes in the UAE and operates Passenger Air Transport flights and Aerial / Scenic Tours as its current core business, with market trading provided by Seawings LLC. Strategically located to provide aircraft management services for clients across Middle Eastern and European operational bases, Jet-Ops holds a UAE Air Operator & EASA Aircraft Training Organization Certificates with its own Part 145 AMO and CAMO, and has the expertise to provide management services for various aircraft types including Cessna, SAAB, Piper, Beechcraft and a number of others. For Commsoft, this represents an exciting new addition to the global OASES community which currently consists of more than 130 aviation operations in over 55 different countries, from national and regional carriers to business aviation and charter operators to cargo specialists, leasing companies and independent MROs.



Guernsey-based **Aurigny Air Services** has chosen OASES, **Commsoft's** MRO IT system, to support its fleet of **Embraer**, **ATR** and **Dornier** aircraft. Implementation of OASES will begin shortly, and the system will be shared by Aurigny's sister company, Anglo Normandy Aero Engineering. Combining a technical sophistication with an intuitive user interface, OASES is structured in a modular format to provide maximum flexibility and scalability. Aurigny has selected the Core, Airworthiness, Planning, Materials Management, Production and Line Maintenance Control modules which will be accessed through Commsoft's Private Cloud service.



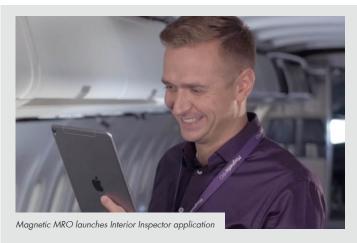
Air Chathams, the New Zealand regional airline, has chosen Rusada's software ENVISION as its information management solution. Air Chathams operates regional passenger and cargo services between the Chatham Islands and mainland New Zealand. The airline serves destinations such as Auckland, Wellington, Christchurch and Whakatane using a diverse fleet of over 15 aircraft, including an ATR 72 recently acquired from Air New Zealand. Air Chathams has selected eight of ENVISION's modules including Flight Operations, Fleet Management and Base Maintenance. Rusada will begin implementing these immediately, with the first aircraft expected to go-live at the end of May.

TAG Aviation Maintenance Services has selected Sensus MRO as its future operating system to complement Quantum, its legacy system. Sensus MRO is a web-based and field-proven Enterprise Resource Planning (ERP) solution for the MRO industry. It is developed and supported

by Locatory.com, a Lithuania-based subsidiary of Avia Solutions Group. Sensus MRO will enhance TAG Aviation Maintenance Services' customer experience by offering new functionalities such as improved capacity planning, customer portal, remote access for increased mobility, optimized quoting/invoicing processes and time tracking. In addition, Sensus MRO will provide a unique opportunity to harmonies TAG's Information systems and processes across its unique pan-European net-

work of line and base stations. TAG Aviation's maintenance operation services chose Sensus for its capabilities and innovative approach. The system easily integrates with other software and databases, is module-based, highly customizable (modules can run as a standalone or altogether) and it can be adapted by Sensus developers according to a customer's needs.

Other News



Magnetic MRO, a global provider of total technical care for aircraft operators and lessors, has launched Interior Inspector – a new service which connects airline workers and maintenance teams in logging any damage found in the passenger cabin of a commercial airliner. The company is constantly working on finding new ways to address challenges that impede the industry's growth and development. One such way has been logging, handing over and saving the data of damage which has occurred in aircraft interiors. The Interior Inspector is an application that allows either the cabin crew or dedicated mechanics to log what type of damage has been caused in the passenger cabin of commercial airliners. The application is intended to work on smartphones, tablets and regular PCs. According to Kruuv, the main idea was to keep the system simple, yet flexible, while getting to know the customer's requirements. "Our findings so far are mostly problems that could easily be solved during over-night stays, such as pen-stripes, worn placards, small stains or broken recliners." As the next step, Magnetic MRO will be introducing the application to the company's customers as a service to start collecting data on how Interior Inspector is used in commercial airlines. The collected data will help the developers to improve the application even further.

Inmarsat has received final approval from the U.S. Federal Aviation Administration (FAA) for its SB-S digital airline operations and safety platform. The FAA has validated the capability of Inmarsat SB-S to support air traffic services by providing direct datalink communication between pilots and Air Traffic Control (ATC). The letter of approval highlights the future potential of this 'first-of-its-kind' service, stating that SB-S technology "provides diversity and potential for advances of capability that will further maximize operational benefits and ensure safety". The endorsement follows a recommendation last year from the FAA's Performance Based Operations Aviation Rulemaking Committee (PARC). FAA approval follows an extensive live evaluation of SB-S by Hawaiian Airlines and United Airlines,

which took place between June 2015 and July 2018 on approximately 25,000 flights and seven aircraft types. Inmarsat partners in the evaluation included **Cobham Aerospace Communications**, **Collins Aerospace**, **SITAONAIR**, **ASG** and **L2**. China's **Shenzhen Airlines** is also using SB-S and Inmarsat's digital airline operations platform has been selected by Airbus as a Light Cockpit Satcom (LCS) line fit solution on its A320 and A330 families.

At this year's Aircraft Interiors Expo (AIX) in Hamburg, Trenchard Aviation Group launched its new series of Servestow™ Life Vest Pouches. With its unique closure system and integrated RFID (Radio Frequency Identification) security seal, Servestow™ LVS100 represents the very latest stage in more than ten years of continuous Life Vest Pouch evolution. Whilst earlier versions featured tamper-evident seals to secure the pouches and achieved savings of several inspection man-hours per aircraft, the LVS100 will increase that time-saving considerably. Using a handheld meter linked to a central database, it will take, literally, minutes to inspect an entire aircraft. In addition, any updates can be collated in real-time and reports distributed globally. Servestow™ Life Vest Pouches are manufactured by **Servecorp**, one of the four complementary businesses that make up Trenchard Aviation Group. To date, more than one million Servestow™ pouches have been supplied to aircraft seat OEMs and airlines worldwide and in 2017, Servecorp received two Queen's Awards for Enterprise, one for Innovation and one for International Trade.

GE Aviation and Auterion have announced the integration of the Auterion Enterprise PX4 operating system on GE Aviation's Unmanned Aircraft System avionics platform. They have shown their commitment by signing a teaming agreement to provide a comprehensive hardware and software solution for drone manufacturers and operators seeking to enable commercial drone operations at scale. The teaming enables a full-stack solution with airborne autopilot and application computing hardware, flight management, safety management and integration. GE Aviation is providing the avionics hardware, application computing, flight management and integration into airframes. Auterion is providing Enterprise PX4, the operating system that runs on the vehicle, in the cloud and the ground station. The core architecture of the hardware and software platform has been implemented with the objective of supporting developers through global open software standards while maintaining an independent and authoritative safety controller. The combination of the two supports long-term flexibility and a high level of design assurance to enable commercial drone operations beyond visual line of sight and within complex airspace and obstacle environments. Flight testing of the hardware and software platform took place over the last three weeks at Reno-Stead airport in Reno, Nevada.





Demand for MRO services in North America is increasing and market experts have predicted a continued growth over the next decade, but some challenges persist as **Keith Mwanalushi** finds.

nalysts at ICF said that over the next decade and beyond the North American airframe MRO demand will migrate from older aircraft (MD80s, 757s, 767s) to composite and more-electrical aircraft (787s, A350s, 737 MAX, A320neo etc).

AAR Corp continues to see growing volumes of demand in aircraft heavy maintenance, landing gear and component MRO activities. Brian Sartain, AAR SVP of Repair and Engineering, says there is continued and significant overcapacity in the availability of footprint infrastructure within the North American MRO sector as new entrants to the market try to participate in the growing volume of requirements, despite there being a major shortage of qualified technicians to meet those demands. "As one of the largest independent aviation services companies in the world, we continue to offer a diversified range of service offerings to blue-chip customers, enabling them to deal with fewer suppliers and interfaces," he says.



Lee Nicholson, Senior Director of Product Management at Exostar

Newer aircraft have extended check intervals and reduced man-hour requirements and clearly this will have some implications for training, access to repairs and hangar utilisation and capacity.

"We take a bullish position on the North American MRO market," states Lee Nicholson, Exostar's Senior Director of Product Management. He believes the market stands poised for robust growth, driven primarily by the coming proliferation of data and the need to share and harness it.

"As this relates to MRO, we see rising demand for integration and information exchange between systems that identify MRO needs and partner systems that handle field service management and, or asset management."

Nicholson says companies must automate the MRO process with key partners now to ensure the timeliness, accuracy, and visibility of data that's collected and exchanged throughout the process.

Marc Bajaj, Sales Director Americas at Spairliners predicts the outlook for the American market as positive and promising. "We have adapted our value proposition to include repair programmes in response to the growing trends of airlines owning their own inventory and at the same time reducing the number of suppliers." He says airlines are also

becoming more aware and accepting of cost saving solutions like PMA/DER. Finally, big data and cloud solutions are playing a larger role and have very useful applications such as paperwork reduction and asset management.

Mike Cazaz, CEO and President of Werner Aero Services observes that newer generation platforms are controlled by the OEMs, creating a monopoly. Consequently, as he states, this is increasing airlines operating costs and reducing the service



Mike Cazaz, CEO & President of Werner Aero Services.



level from providers. "OEMs don't seem to be keeping up with the demand and TAT is getting worse by the day. At the end of the day airlines are paying the [higher] cost. Shops continue to be full, particularly with engine work on OEM repair programmes and programmed maintenance activities, but operators continue to defer expenditures as long as possible on other maintenance activities."

Engine maintenance

Generally, North America is a very mature market in terms of engine MRO – most forecasters expect rather flat or even negative growth in terms of shop visits over the next ten years, according to Christoph Heck, Vice President Sales, the Americas at MTU Maintenance.

"Nevertheless, we're still seeing increasing leasing and MRO demand for mature engine types, mainly because most freight integrators are based in North America and currently experiencing fast growing demand."

Consequently, for instance, MTU recently announced a commitment to the PW2000 engine programme for another 10 years – "Furthermore, we are seeing continued demand for the CF6-80C2 engine and are planning to introduce this line to our facility in Vancouver."

MTU is also witnessing a strengthening demand on maturing engine types such as the CF34-8E, CFM56-5B/-7B and V2500-A5 – both for

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Christoph Heck, Vice President Sales, the Americas, MTU Maintenance

MRO and lease support services.

For the engines that Standar-dAero supports in the airlines and fleets segment, they are seeing strong demand across all products. The bow wave of CFM56-7B events in support of the Boeing 737 NG fleet continues unabated, with the peak in demand not forecast to be reached until 2022 or thereabouts, accounts David Green, VP/GM (CF34/CFM56) Airline and Fleets at StandardAero.

"Our team in Winnipeg recently celebrated its 500th CFM56-7B event, and we continue to see strong demand for induction slots from U.S. operators. Our CF34 and AE 3007 engine lines likewise remain busy, with the 50-90 seat regional aircraft segment continuing to see significant demand, in part due to existing U.S. airline scope clauses limiting the near-term market prospects for larger 100-seater regionals."

On the turboprop side of the business, Green reports that North America continues to represent a significant market for the PW150A-powered Q400, accounting for one-third of the in-service fleet, while the recent entry into service of the latest PW127M-powered ATR -600 family with Silver Airways will help offset the retirement of some of the older Dash 8 aircraft in the region.

"Finally, demand for PT6A MRO services remains at a high level, reflecting the health of the business and general aviation market at the current time," Green adds.

Current demand on engine MRO is continuing to be strong due to a multitude of factors, and at Volo Aero MRO they are seeing double digit growth reports Andrew Walmsley, who is President at the company.

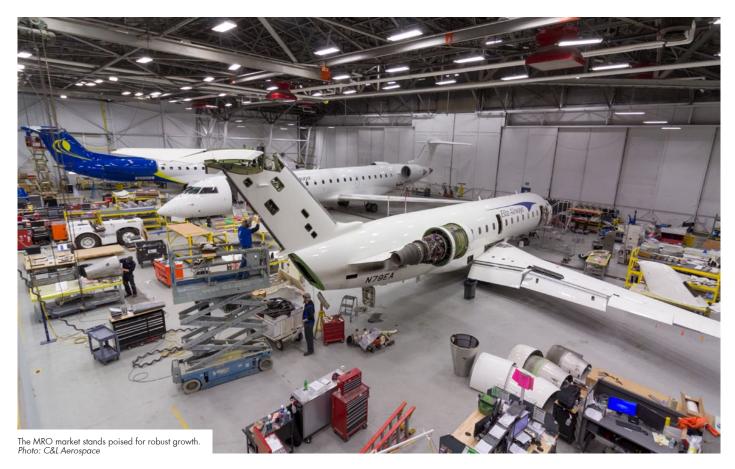
On the engine side, Volo Aero have new engine lines being inducted significantly earlier than anticipated, mature products such as CFM56-

5B/-7B and V2500 have not yet reaching peak input levels, cargo demand on freighters resulting in an extended market on the CF6-80C2 market and even the CFM56-3 and -5C4 markets rebounding.

Walmsley says a couple of the headwinds that are starting to impact the market are the increase in oil pricing, and on the MRO side its capacity in the supply chain for services, material and qualified trained technicians.



David Green, VP and GM Airline and Fleets, StandardAero



Addressing the skills shortfall

Arguably, the greatest challenge facing MROs is the ability to secure qualified personnel. This shortage in North America will continue to be a primary focus for the foreseeable future.

"It is a very serious issue," declares Dave Querio, President at Ascent MRO. "Everyone is fighting for the same people and this ultimately drives costs up disproportionally. With the volume of aircraft being produced by the OEMs this problem will only get worse in the near term.

"The MROs are going to have to develop partnerships with technical schools and military institutions to secure new entrant and transitioning personnel. Developing internal apprenticeship training programmes designed to train up personnel into aviation maintenance is also key,"

advocates Queiro.



David Querio - President, Ascent MRO

Leonie Darsow, Manager Business Development The Americas at Lufthansa Technik agrees with the cost implication of this problem – "North America is already feeling the pinch: the battle for maintenance technicians has ramped up and airlines competing with increased salary levels to attract qualified personnel, which increases their operational cost."

Several airlines and MRO-providers are already collaborating with technical schools and other training facilities in order to cover their own staff requirements. A good example of this is Lufthansa Technik's airframe maintenance and modification facility in Puerto Rico. In collaboration with the Aeronautical Institute of Puerto Rico and the U.S. Labour Department they have designed a comprehensive three-year apprenticeship programme offering prospective aeronautical mechanics the knowledge and basic practical skills in various areas related with the inspection, maintenance, and repair of aircraft.

"This is the first learning programme specialised in MRO registered in the United States, designed to benefit the aeronautics industry internationally," says Darsow.

The workforce shortage continues to seriously impact the planned continued market growth, reckons Cazaz from Werner - "I don't think the

industry is doing enough and if you compare it to other industries, the answer is definitely no."

One example Cazaz cites is the car industry where some major manufacturers had the vision years ago and realised that if they don't invest in manpower to deal with their future growth and demand, they won't be able to serve their customers properly – "They established colleges on their own to educate and train the next generation of workers, at no cost to the



Leonie Darsow, Manager Business Development The Americas, Lufthansa Technik

employees, and provided them future jobs after they completed their education. The aviation market has been discussing the industry workforce shortage problem for at least 10 years, but no one has taken a serious lead to provide a solution."

As with all other players in the industry and especially in North America, MTU have also been seeing that the supply of highly qualified employees is struggling to keep up with demand in this industry growth period.

Over the past year, MTU have been looking to and successfully hiring more maintenance technicians at all locations, including Berlin, Hannover and Zhuhai. "We provide apprenticeships in Germany and Canada, as well as comprehensive training programmes in Zhuhai, China. We also have numerous further education opportunities within the company for all areas of business.

"Nonetheless, due to our expanding engine and product portfolio, we also regularly look for engineers, salespeople and customer account managers, among others, from all countries and backgrounds – also from outside aviation," says Heck.

Interestingly, at StandardAero, they also actively recruit veterans and find them to be very well-suited for many of their maintenance and technical roles. In fact, the company says 21.5% of their U.S. workforce today is either retired or active/reserve military veterans. In addition, they are expanding operations in places like San Antonio, where there is an embedded pool of military and government trained people who are qualified and available in those locations.

Embracing blockchain technology?

The potential gains of using blockchain for aviation are huge but challenges with this technology persist.



David Chaimovitz, President & Co-Founder,

"I think blockchain is a buzzword that people love to talk about but am unsure as to how this will truly improve profitability or safety for any organisation," states David Chaimovitz, President and Co-Founder, at Setna iO – an aftermarket trading firm mainly focused on airframe rotables. "Personally, I will be following blockchain implementation as an observer for now while we focus on our core trading business."

Darsow from Lufthansa Technik somewhat garees that the po-

tential gains of using blockchain technology for the aviation industry are supposedly huge, but from Lufthansa Technik's point of view the industry is still at the very beginning of looking into use cases, and at the moment they seem to be mainly focused on airline operations such as ticketing or chatbots. – "With regards to MRO, there are only very few examples actively looking into the potential benefits of the blockchain technology."

However, as a further step in the digitalisation of the MRO industry, blockchain certainly has relevance, believes Green from StandardAero. He says the ever-increasing importance of data in the industry, especially as it pertains to predictive maintenance through engine health monitoring, will require parallel advances in data security, and the

cryptography which is at the heart of blockchain systems may therefore be a natural fit to the industry – "This is especially the case where MRO providers operate a global network of MRO facilities – over 30 in the case of StandardAero – therefore emphasising the need for data security over widely distributed networks.

"As a continuation of the trend towards digitalisation, blockchain technology is also attractive in terms of its ability to advance the move towards paperless systems, and the associated increase in operating efficiency," Green continues.

Managing ageing fleets

North America still has a significant ageing fleet in operation and supposedly this area will see OEMs loosen their grip on the aftermarket and MRO side.

"We very much see OEM's as our partners at AJW Group," says Frank Boni, Vice President of MRO Sales, AJW Group. He says the majority of OEM's are less focused on the ageing fleets types than the newer fleets. "We can offer OEM's a platform to distribute their ageing inventory, with the benefit of our global footprint and active sales force. We can also provide an alternative repair facility in a geographically advantageous location that supports these customers while procuring exclusively piece part needs



Frank Boni, Vice President of MRO Sales, AJW Group

from them. We can, in this way, help to eliminate the PMA threat and provide a quality, on-time product to the end customer."

The current set-up for a larger OEM tends to be engineered towards the high-volume users of their components rather than ad hoc request for a single part or repair, indicates Boni. Additionally, he says the new airline customer is likely to require an outsourced nose-to-tail solution and be unwilling or unable to manage multiple OEM relationships. Forward-thinking OEM's are overcoming those barriers by working with existing aftermarket providers.

Most MROs do not really see the OEMs as a direct competitor on ageing fleets. Rather, AAR for instance, is working closely with the OEMs to ensure close collaboration on MRO activities to keep the ageing aircraft operating at safe and reliable operational levels.

AAR can bridge the gap in material constraints associated with the ageing aircraft fleets via its significant used serviceable parts business, as well as its factory-new OEM parts distribution business. "This allows AAR to find and manufacture scarce parts and provide creative solutions to keep these ageing fleets flying. Furthermore, our significant capabilities in our back shops and broad range on vertically integrated capabilities allow us to support these ageing aircraft," concludes Sartain.

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In the hot seat.....

Dave Querio, President, Ascent Aviation Services

AviTrader MRO: Can you give us a brief background on how Ascent Aviation Services came about?

Querio: Ascent Aviation Services ("Ascent") as it is known today, was created when Chicago based private equity fund Monroe Capital acquired the stock of Evergreen Maintenance Centre in May 2011 and rebranded the operation as Marana Aerospace Solutions, or MAS for short. MAS continued operations from this point and in December 2016 merged operations with Tucson based Ascent Aviation Services.

The two companies continued to operate as separate companies under common ownership while consolidating processes and procedures. In March 2018, after standardising most policies, processes and procedures, the company announced the renaming of Marana Aerospace Solutions to Ascent Aviation Services.

Today, the companies continue to operate as separate certified repair stations, but employees are cross utilised across both platforms to support the operational needs. In order to accomplish this efficiently, forms, processes and procedures are continually being revised to ensure continuity – regardless of the facility being deployed in.

AviTrader MRO: Ascent seems to be an all-round MRO supply chain solutions provider but what would you say are your key business activities?

Querio: Though we continue to evolve our offerings on a regular basis to remain ahead of the curve in the industry, our primary focus is on the three operational divisions we have become known for. These are, 1) heavy maintenance and modifications, 2) storage and flightline activities, and, 3) reclamation.

Our Marana facility is world renowned for its B747 expertise and capabilities. This facility possesses a hangar capable of housing B747-400 and smaller aircraft and includes significant component back shops, heat treat and welding, non-destructive testing, composite shop, interior shop, structures and avionics shops as well as full strip and paint capabilities. Marana is also one of the largest aircraft storage facilities in North America with capacity to store in excess of 400 transport category aircraft. All maintenance and storage activities are performed under one or more of our numerous regulatory authorisations. And when it comes to reclamation, Ascent can disassemble up to 20 aircraft simultaneously in an ecofriendly manner. Our disassembly process allows the flexibility for our customers to prioritise critical parts pulls to ensure that their needs are constantly being met.

Our Tucson facility is primarily a narrow body and regional aircraft facility housing three hangars with capacity for five lines of aircraft to be worked simultaneously. In addition to being supported by the Marana facility, the Tucson facility also maintains heavy mainte-



David Querio - President at Ascent Aviation Services

nance and modification capability with an interior and avionics shop, non-destructive testing, borescope capabilities, structural repair and modifications, and full strip and paint capability. The facility is also expansive enough to support storage of up to 40 transport category aircraft and provides reclamation services for our broad base of customers.

AviTrader MRO: Which [geographically] are your key markets?

Querio: Obviously, our primary emphasis is the Americas due to location, but we have a global reach, especially for the widebody aircraft. That said, our regulatory authorisations and customer base span most of the globe and we continue to pursue new markets. One, for instance, is Asia. This region has boomed with operators and leasing companies in recent years. Our wide array of aircraft capabilities, coupled with our responsiveness to our customers, makes us a solid partner candidate for a number of these newer operations.

AviTrader MRO: What is the key trend that you are observing in heavy airframe MRO?

Querio: The biggest trend that we are all dealing with is the global shortage of qualified technicians. Developing this population to support the demand for the future is critical to the well being of the industry.



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AviTrader MRO: In your view, how can airlines best manage their component inventory and repairs?

Querio: While this is not necessarily my area of expertise, I believe that the best way to manage would be through partnerships and pooling relationships. The cost of ownership for high value parts can eat away at liquidity. Having relationships for timely exchanges or parts pooling agreements greatly reduces the upfront costs of purchasing the parts to insure its availability when needed.

AviTrader MRO: How are you managing the shortage of skilled labour in the MRO market?

Querio: We have taken a multi-faceted approach at fighting through the shortage of technicians. Obviously, first and foremost, treating your people well will help with employee retention and we are always looking at things we can do differently that would have a positive impact on our team members. Recruiting smartly is another one. Whether on social media or other communication techniques, getting our name out there along with what we have going on is critical to our successful recruiting campaign. We also partner with multiple staffing companies to assist in securing temporary or temporary-to-permanent labour. Another newer initiative we are working on is partnering with technical schools in the development of new entrants to the technical side of aviation and retraining and qualifying of personnel exiting the military. The Working Heroes programme, which we partner with Launch Technical Workforce Solutions, is

a great example of the way in which we are giving people who have proudly served in the military the opportunity to learn a trade and excel in the civilian sector.

AviTrader MRO: What opportunities [if any] do you see in the ageing aircraft market?

Querio: With fuel pricing remaining relatively low, these aircraft can be expected to remain in

service longer resulting in more heavy maintenance opportunities. This is further exacerbated by the large backlogs in new aircraft deliveries from the OEMs. When the aircraft finally are removed from operations, we stand ready to support the owners/operators with their storage, transition, or reclamation needs.

AviTrader MRO: Are you investing a new MRO technology?

Querio: We are always assessing the industry to stay ahead of the curve and part of that is determining what directions to take the company to position it for the greatest success in the future. Not only are we investing in new technologies, we are partnering with creative organisations that we believe will be instrumental in the future. For instance, we have partnered with an innovative company named Rizse that is currently developing new drone-based technology for performing aircraft inspections.

AviTrader MRO: What's next at Ascent Aviation Services?

Querio: Many great things. Our team is poised and ready to take on new challenges and there are several initiatives in work that will result in exciting times at Ascent – just wait and see.



Revolutionising the online aerospace marketplace



Plane is a free end-to-end online aerospace marketplace, revolutionising and modernising the \$80bn annual aircraft parts aftermarket industry. ePlane is a simple, efficient platform for buying and selling parts and repair services, worldwide, around the clock without any registration or usage fees.

ePlane enables buyers to browse through reliable inventories, compare prices, chat with vetted sellers and MROs, send RFQs, close deals online, and get insight into their day-to-day sourcing activities – all with just a few simple clicks. Sellers can sync their inventories directly from their ERP, chat live with buyers, send and receive related documents, and enjoy an international reach – like never before.

For buyers

With over 30 years in the field of aerospace part procurement, ePlane's founders realised that there is an inherent problem in the space. The field of aerospace part sourcing has remained stagnant and failed to keep up with modern technologies and opportunities. The internet has brought innovation to traditional eCommerce sites, while the process for buying airplane parts has not changed. To search for vital aircraft parts, procurement managers stumble through outdated lists of parts that are no longer in stock or relevant. Even if the elusive part is tracked down, there can be problems with trust and reliability: you rarely know who you are really buying from. Buyers run the risk of wiring money to a new contact without being truly sure that they will receive what they've paid for.

ePlane changes that. As the most complete marketplace on the web, ePlane accepts only verified listings of genuine products. All products are updated in real time, meaning users always see only what is available right now. With a clean user interface and optimised searches, ePlane's members can buy, sell, trade and even rent equipment at any time and with the utmost ease. All transactions are monitored by ePlane's own system, resulting in 100% secure purchases.

The purchase process is simple using ePlane's intuitive user interface: search, review results, compare items and finalise the deal online.

ePlane offers buyers a place where they can effortlessly search through 100% legitimate and reliable inventory listings. It's easy to view tags, condition, lead time, prices, and more, allowing buyers to purchase parts with confidence. ePlane's advanced comparison tool

takes all of the guesswork out of choosing the right part and saves valuable time.

The revolutionary Al-driven ePlane Autopilot fully automated the RFQ process by sending requests to relevant vendors and aggregating quotes on a user-friendly dashboard. All that's left for the buyer to do is choose the most competitive price and send a purchase order.

Sellers

ePlane provides tremendous benefits for sellers, helping them expose their assets to a larger, worldwide clientele and streamline the way they transact. Uploading your inventory to the ePlane marketplace is free of charge. By allowing vendors to sell online 24/7/365 to customers across the globe, they enjoy a bigger market presence and greater inventory exposure. Notifications will alert vendors to any activity on their account, so they never miss a sale.

Sellers can fulfill a demand in minutes, saving time. The personalised statistics and business insights offered by ePlane give businesses access to all the information needed to grow their company. Sellers gain incremental business with zero risks.

ePlane is a simple, efficient, reliable, 100% free, one-stop-shop solution for aircraft parts sourcing and repairing. No matter what you need, ePlane keeps you flying.



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Standing tall



ational Aero Stands (NAS) was incorporated in 2016. Since then, NAS has almost tripled its engine stand inventory to over 200 owned engine stands. They have grown their customer base by 35%, and have expanded their locations to Dallas, Texas, Miami, Florida, Roswell, New Mexico, Rockford, Illinois, Bournemouth, UK and Rotterdam, Netherlands. The multiple locations, extended fleet of engine stand types and quality are a few of the things that enable National Aero Stands to be a leader in engine stand leasing.

In February 2019 National Aero Stands signed an exclusive agreement with Excent to become the North American distributor of the JacXson U70 engine change system. The JacXson name is derived from the infamous moon walk dance because of the way the JacXson is maneuvered via a smart tablet.

The JacXson is a game changing smart trolley dedicated to narrow body aircraft engine installation and removals in a safe and ergonomic way. The JacXson eliminates the use of bootstrap kits which aid in the removal and installation process. Using the JacXson requires only two mechanics, for a total engine

removal or installation in less than forty-five minutes. The JacXson is very flexible as it can handle all narrow body aircraft types of engine stands without any adaptation kit. The design also allows changing landing gear and other equipment such as thrust reversers and fan cowls.

Unlike other engine changing systems on the market, there is no preparation or assembly time as the JacXson is one whole piece of equipment. Savings on employee time is down from four hours to approximately forty-five minutes maximum and with only two mechanics instead of four which are currently



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required. During operation, smooth, easy and very accurate directional control as well as complete management at all time at the center of gravity. The preload applied between the engine and the pylon as well as the direction where it's applied are ensured with the embedded load sensor, the HMI and the implemented design and programme. The

JacXson will benefit the most during an AOG situation due to the significantly less time it takes to perform an engine change.

This is the first time that a semi automatised, fully electric product is implemented in the engine change operation world. In a way, this is the robotisation of an engine change. Moreo-

ver, this is a connected device allowing to perform maintenance operation from anywhere in the world if the company agrees to allow us to connect remotely. Last, but not least, this product can be configurated for each airline according to their aircraft / engine / shipping stand. The system is interactive with the user in order to preset parameters such as limit in lifting, tilting, rolling and/or the required preload to be applied. The HMI has a proportional and omnidirectional joystick, a 10-inch touchscreen providing real-time feedback of all parameters (speed, direction, position, angles, preloads).

The JacXson is certified by Airbus for their narrow body aircraft such as the A220, A320 CEO, NEO, A318, A319, A321. The JacXson is now listed in the Airbus AMM and it has been tested and proven on all Boeing applicable narrow body engines. We are currently working to achieve Boeing's certification to be added to their AMM.



AUSTIN | BOURNEMOUTH | DALLAS | MIAMI | ROCKFORD | ROSWELL | ROTTERDAM

People On The Move



Airbus has appointed **Antoine Bouvier**, Head of Strategy, Mergers & Acquisitions and Public Affairs, effective June 1, 2019. In this position, he will report to Guillaume Faury, Chief Executive Officer (CEO) of Airbus. At MBDA, Antoine Bouvier will be succeeded as CEO by **Eric Béranger** who has held a number of leadership positions in Airbus Defence and Space. His appointment will also become effective June 1, 2019. MBDA, a joint venture between Air-

bus (37.5%), BAE Systems PLC (37.5%) and Leonardo S.p.A. (25%), is Europe's leading missile systems house. Furthermore, **Patrick de Castelbajac** is appointed Head of Region Asia-Pacific for Airbus, effective June 1, 2019. In this capacity, he succeeds **Jean-Marc Nasr** who was recently appointed Executive Vice President Space Systems within Airbus Defence and Space. Patrick de Castelbajac is also named Head of Sales Asia-Pacific for the Company's commercial aircraft business as of July 1, 2019. Patrick de Castelbajac will report to **Christian Scherer**, Chief Commercial Officer and Member of the Executive Committee at Airbus.



Pratt & Whitney has appointed Maria Della Posta as president of Pratt & Whitney Canada, effective June 1 and reporting to Pratt & Whitney President Bob Leduc. Della Posta succeeds John Saabas as President, Pratt & Whitney Canada, who has announced his retirement. Della Posta joined Pratt & Whitney in 1985 and progressed through roles of increasing leadership in Supply Chain, Finance and Customer Service. She was named Vice President, Cus-

tomer Support in 2001, Senior Vice President, Sales and Marketing in 2010 and Senior Vice President, Pratt & Whitney Canada in 2012.

Aero Controls welcomes **Scott Cooper** as new Vice President, Sales & Marketing. In this role, he will be responsible for strategic initiatives driving total revenue generation through repair services, part distribution, aircraft teardowns, consignment, and engineering while reporting to Aero Controls CEO, **Michael Olesik**. Furthermore, Aero Controls has appointed **Xenia Aguinaldo** to Controller. In this role, she will be responsible for financial strategies to support the company's objectives and maintain the organizations strong financial health.

TrueNoord, the specialist regional aircraft lessor, has established a representative office in Singapore as the first step in broadening its global footprint in the Asia region with a view to establishing a more permanent presence going forward. **Carst Lindeboom**, Sales Director – Asia Pacific, will act as the chief representative of the new office based in Centennial Tower in the heart of the city.

Macquarie Capital, the corporate advisory, capital markets and principal investment arm of Macquarie Group (Macquarie), has announced that **Fady Lahame** has joined the firm to take up the role

of Head of France for its division covering Americas, Europe and Asia (AEA). Lahame brings over 20 years' experience to Macquarie Capital, beginning his career at Credit Suisse in London, eventually becoming Co-head of France and BeLux for the investment banking department in Paris. During his Credit Suisse tenure, Lahame advised corporates and private equity firms on several high-profile M&A and capital market transactions across a range of sectors. Later, in 2015, he joined the French advisory firm Messier Maris & Associés as a partner, leading domestic and cross-border M&A transactions primarily involving French large cap corporates.

Jet Parts Engineering (JPE) has announced the addition of two new members to its sales team: Andrew Bonefas, Regional Sales Director for Western North America, and Pascal Lethien, Regional Sales Director for Europe Key Accounts. Prior to joining Jet Parts Engineering, Andrew Bonefas had extensive PMA and DER repair experience while serving as Director of Sales West Region North America at The Wencor Group and Regional Sales Manager at AAR PMA Products. Prior to this, he was managing airline materials at Southwest Airlines. In addition to bringing a wealth of sales knowledge to the JPE team, Bonefas is passionate about innovation, product, and partnerships. He is based in Pearland, Texas. Pascal Lethien also brings extensive sales and aerospace knowledge to the JPE team, having previously worked in the MRO and OEM sector. He gained experience in strategic customer account management and business development by working in sales at Standard Aero, Meggitt, Airfoil Technology International, The Nordam Group, and Titanox Aerospace. He is based outside of Montpellier, France.

TrueNoord, the specialist regional aircraft lessor, has appointed

Michael Adams as European Sales Direc-



tor. Based in TrueNoord's Dublin office, Adams' primary responsibilities will be to support the existing TrueNoord customer base in Europe as well as source and close regional aircraft leases with new customers in Europe. Prior to joining the TrueNoord team Adams worked for ACIA Aero Leasing as Senior Executive: Sales, Leasing & Marketing, and for Solenta Aviation (Pty) as Business Development Manager. His

responsibilities included overseeing the re-

marketing of aircraft available for lease or sale, coordinating predelivery processes for aircraft being placed on both wet and dry leases, customer relationship management with aircraft lessees, and sourcing aircraft for purchase.



Airbus has appointed **Jean-Marc Nasr** Executive Vice President Space Systems within the Airbus Defence and Space division. Nasr will assume his new duties on June 1, 2019 and succeeds **Nicolas Chamussy** whose next assignment is subject to further notice. In his new role, Nasr will be Member of the Airbus Defence and Space' Executive Committee and report to **Dirk Hoke**, CEO of Airbus Defence and Space. Presently, Nasr serves as Head of Region

Asia Pacific for Airbus and Airbus Defence and Space. Johan Pelis-

sier currently Head of South East Asia within Airbus Defence and Space, will succeed Jean-Marc Nasr in his current function and will be acting Head of Region Asia Pacific for Airbus Defence and Space as of June 1, 2019.

de Souza e Silva in the position of President and CEO. Neto is currently the president of Marcopolo, the Brazilian bus and coach manufacturer.



Jet Aviation has appointed Jeremie Caillet Vice President VIP Completion Programs, effective immediately. Caillet succeeds Neil Boyle, SVP Global Completions, who is retiring at the end of May 2019. Boyle will remain active with the company through its senior advisory board. In his new role, Caillet will be responsible for the successful execution and delivery of all VIP Completions projects, while providing leadership and direction for all aspects of VIP Completions programs. Caillet previously worked

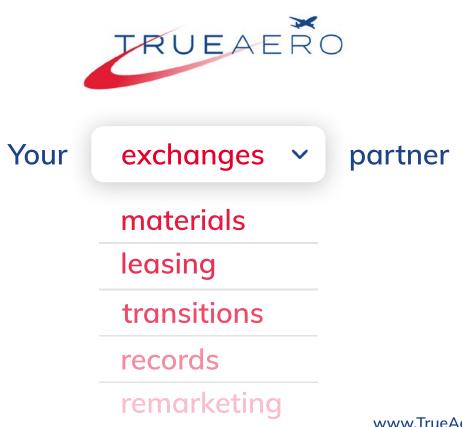
for Dassault Falcon Jet in the US and joined Jet Aviation in 2008 as Engineering Team Leader.

Embraer S.A., the Brazilian plane maker, has announced the nomination of Francisco Gomes Neto to take over from Paulo Cesar



GA Telesis, has appointed Kevin Geissler as Vice President Aviation Lease Solutions. Geissler began his career at Curtiss Wright Accessories, the aftermarket repair business of the OEM, which was subsequently acquired by GA Telesis in 2008. Kevin spent several years post acquisition in the Company's MRO Services unit as a business unit controller and as Corporate Assistant Controller before being promoted to Vice President and Corporate Controller in 2013. Kevin holds a Bachelor's Degree

in Finance from the University of North Carolina at Wilmington. Geissler will be responsible for oversight and development of the Company's inventory leasing business as well as its thriving APU and Landing Gear leasing business. The Company currently has a significant inventory lease portfolio consisting of Boeing 737, 747, 767, 777, 787 as well as Airbus A320, A330 and A350 rotable components.



www.TrueAero.com