

MRO

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Widebody heavy checks

MRO News
from around the world

People on the Move
latest appointments

Company profile
Aero Norway

Industry interview
Commercial Jet

MRO

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Opinion

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Cash converters

Last month's announcement that Elbe Flugzeugwerke (EFW) had secured a lunch contract with Vallair for its A321 passenger-to-freighter (P2F) conversion solution is an interesting development. The Germany-based aerospace company will convert 10 A321-200 passenger aircraft to a 14-pallet cargo configuration for Vallair. The first aircraft will be inducted in the last quarter of 2018, scheduled for redelivery by the end of 2019.

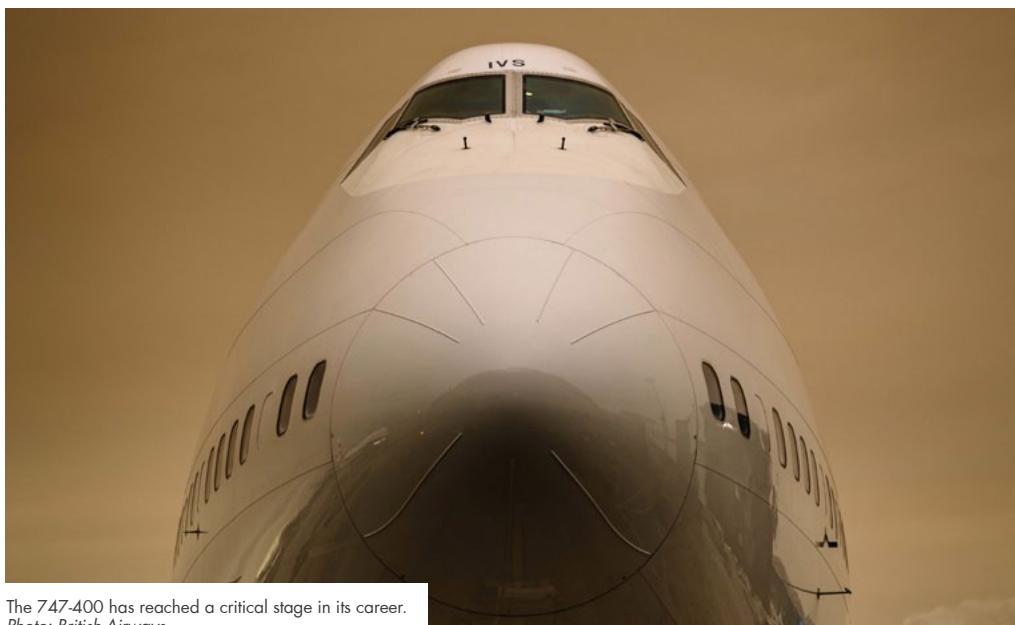
The A321 itself is the star attraction here. In the A321 size category, the freighter segment has historically relied on Boeing products for capacity, specifically, the very popular Boeing 757.

Vallair sees a lot of potential and value in the A321 P2F programme, not only as a replacement for the 757F, but also as a key industry solution to meet the air freight market's projected growth – in the express and e-commerce segments.

Experts say air cargo operators will be carefully reviewing their capacity and network development plans upon the introduction of the A321 P2F. The conversion programme is the first in its size category to offer containerised loading in both the main deck (up to 14 container positions) and lower deck (up to 10 container positions). With a generous payload-range capability that can carry up to 27.9 metric tons over 2,300 nautical miles, the A321P2F will most likely be the front runner narrow-body freighter aircraft for express domestic and regional operations, as 757 numbers begin to dwindle.

Availability of parts, fuel efficiency and other operational benefits associated with the A320 family nicely rounded the overall picture, as these translate into real selling points for operators.

Keith Mwanalushi
Editor



The 747-400 has reached a critical stage in its career.
Photo: British Airways

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FAI Technik GmbH becomes authorized Rockwell Collins dealer

FAI Technik GmbH, part of the FAI Aviation Group, has signed a dealership agreement with Rockwell Collins to become one of its accredited dealers. Effective immediately, the agreement means FAI Technik can sell, install and maintain Rockwell Collins' avionics and cabin electronics equipment from its headquarters at Albrecht Dürer International Airport in Nuremberg, Germany. The announcement marks a new phase in the relationship between Rockwell Collins and the broader FAI Aviation Group, which began in July 2016 and formally launched on Jan. 5, 2018. Rockwell Collins' regional sales manager for Germany, Robert White, commented, "Given FAI's growth since 2016, we believe we are best placed to take advantage of the upturn within business aviation. Adding FAI Technik to our group of dealers in Europe brings an encouraging scope to both our cabin and avionics capabilities, providing our customers with targeted aftermarket solutions being carried out by a competent and qualified dealer."

Aeroco Group announces further investment plans

Aeroco Group International, based at Manchester Airport, a leading specialist in aircraft cabin and component maintenance, has announced further investment plans that will double the size of its brand-new state-of-the-art facility due to growth in customer demand. Just weeks after acquiring their new facility at Stockport, Aeroco Group International has taken the decision to secure an additional 20,000 ft², increasing the capacity to 40,000 ft² in total. The fit out is already underway

and due to be completed and operational by the middle of this year. The new premises will support its increasing customer base of airlines, leasing companies, MRO's and component traders with industry leading aircraft cabin and component maintenance and advanced manufacturing services.

AJW Group awarded new PBH contract with Argentina's first low-cost airline, Flybondi.com

AJW Group has secured a power-by-the-hour (PBH) contract with new Argentinian low-cost carrier, Flybondi.com (operating as Flybondi). The long-term contract, which covers their rapidly expanding fleet of B737-800 aircraft, will see AJW use its expertise to manage the complete supply, repair and overhaul of Flybondi's rotatable components. This will ensure that Flybondi's customers benefit from improved efficiency thanks to AJW's streamlined supply chain management. Flybondi.com, based in Buenos Aires and Cordoba, is the first low-cost carrier in Argentina. Launched earlier this year, the airline will operate across 85 domestic and international routes. It is run according to an agile business model which is focused on continuous improvement and optimization of processes, alongside driving new innovations in the aviation industry.

TAG Aero completes establishment of TAG TechOps as certificated 145 repair station for APU's

TAG TechOps the new MRO division of TAG Aero is now fully established and has full FAA and EASA certification. Coming fully

on stream through the spring and summer of this year TAG TechOps has capability for the following APU types, GTCP131-9A & 9B, GTCP85 and GTCP36 series. Incorporating its own test cell for the entire series listed which is currently being installed into a purpose-built annex to its brand new, custom built, facility in Orlando Florida which TAG Aero occupied in mid-2017. This very positive addition to the TAG Aero offer is consistent with its core business of being The APU support business for the industry. By controlling more of the supply and production chain it will offer its clients an end to end service with better controlled lead times and seamless supply. TAG Aero can now better support its MRO clients and also its direct end user customers, including a lease replacement unit service subject to availability. Representing the conclusion of another step in the strategic establishment of the TAG brand of APU specialism, and demonstrating a continuation of the impressive growth of TAG Aero, consistent with its strategic business plan by adding value for its clients.

Honeywell Aerospace signs up Heliconia Group as approved avionics dealer for North Africa

Honeywell Aerospace continues its expansion into high-growth regions like Africa to support local operators, improving reliability and safety of fleets. Heliconia Group has now been approved by Honeywell as an approved avionics dealership in North Africa. Owners of Leonardo Helicopters AW139 equipped with Honeywell technologies can get their platforms services locally, with the region now able to provide spares, and RMU services, which means customers can lessen turnaround times and reduce costs, spares and inventory holdings.

AEI receives order for two MD-83SF conversions from Everts Air Cargo

Aeronautical Engineers, Inc. (AEI) has signed a contract to provide Fairbanks, Alaska-based Everts Air Cargo with two MD-83SF series freighter conversions. The first MD-83 (MSN 53471) will commence modification on April 4, 2018 and will be re-delivered in the beginning of August 2018. Immediately following, the second MD-83 (MSN TBD) modification will commence and is scheduled for re-delivery to Everts in December 2018. Both modifications will be performed by Commercial Jet's Dothan, Alabama facility. Everts will use the AEI MD-83SF freighters to replace and augment their existing fleet of DC-9 aircraft.



Boeing selects LORD for 737 MAX Cockpit Control Systems

LORD Corporation, a global diversified technology and manufacturing company, will develop and manufacture the auto throttle module for Boeing's 737 MAX. The cockpit control will be designed and produced at LORD Electromechanical Solutions (formerly Fly-by-Wire France) facilities in Saint-Vallier, France and in Cambridge Springs, Pennsylvania, USA. This new multi-year contract reflects LORD's acquisition strategy to develop innovative electromechanical solutions to provide long-term value for the aerospace & defense industry. LORD acquired Fly-by-Wire in 2016. The development of the cockpit control systems will take place over the next few years with production beginning in 2020. LORD has been a major supplier to the aerospace industry for electromechanical solutions on cockpit control systems for nearly 40 years. A longtime partner of Boeing, LORD is a recent Silver Boeing Performance Excellence Award winner and has developed and manufactured several systems and components for a variety of commercial and military Boeing platforms. The Company is currently constructing a new, state-of-the-art manufacturing center in Pont de L'Isère, France to optimize and enhance its service to Boeing and other customers, while positioning LORD for future growth.

Certification cements AJW Group's commitment to sustainability

AJW Group is pleased to announce that it has renewed its ISO 14001: 2004 and OH-SAS 18001:2007 certifications, reaffirming its commitment to the highest environmental, and health and safety standards. The two certifications are the latest update to a broad program

of initiatives at AJW's Slinfoeld headquarters to improve sustainability. These include: a paperless office to reduce paper waste and improve efficiency, solar panels to conserve energy and protect the environment, and car sharing schemes to promote environmental responsibility. AJW has also installed integrated separation tanks in its external drainage systems to prevent chemical spillage, engaged a zero waste to landfill waste contractor, and implemented a system for the proactive reporting of hazards and potential hazards throughout the organization. The ISO 14001: 2004 certification provides tools for companies looking to manage their environmental responsibilities. It will help AJW Group fulfil its objectives of enhancing environmental performance, fulfilling compliance obligations and reducing environmental impact.

StandardAero Component Services plans to expand three primary U.S. facilities

StandardAero Component Services has announced a significant investment and expansion at three of the company's U.S. sites during 2018 and will increase shop capacity by a total of 260,000 ft² (sq. ft.) collectively, with expansion of facilities in Cincinnati and Hillsboro, Ohio, and Miami, Florida locations. Overall investment to fund the expansions exceeds US\$16m in construction and capital equipment. "We are making this commitment to grow our capacity to meet the continued demands of our customers – on both legacy platforms and next generation engines, as well as to continue to provide the aerospace industry's best delivery performance for component repair and manufacturing services," said Rick Stine, President, StandardAero Components, Helicopters & Accessories. The

Cincinnati location expansion will include the build-out of an additional 200,000 ft² of work space to accommodate component repair growth on new platforms, military and commercial engine component repair, as well as larger components. Miami will add 30,000 ft² of working space and capital improvements including the installation of a state-of-the-art clean line, an additional vacuum furnace, as well as water jet cleaning capabilities. As a result, the facility will be able to repair large engine cases. Hillsboro will be completing a 30,000 ft² expansion to support new OEM manufacturing production, bringing the facility's total manufacturing footprint to 115,000 ft² of space. "These expanded capabilities also include dedicated processes for the repair, overhaul and manufacturing of various component types to support our customers' engine needs," Stine added.

Magnetic MRO signs line maintenance contract with Air Nostrum

Magnetic MRO, the global total technical care maintenance and asset management organization, has signed a line maintenance agreement with Air Nostrum for three of its CRJ1000 aircraft. The contract enables the Magnetic MRO engineering team to provide a full suite of line maintenance services on the customer's aircraft at Zagreb and Copenhagen International Airports. Magnetic MRO has been operating at CPH International Airport since the company opened an outstation there in summer 2017. According to the agreement, Magnetic MRO will also serve Air Nostrum's CRJ1000 aircraft in ZAG Airport to create convenient and efficient solutions during the summer season. "We are delighted to cooperate with our long lasting client Air Nostrum in Zagreb and Copenhagen Airports. The strong presence in strategically located international airports puts us in a great position to serve Magnetic MRO's customer relationship as well as international growth strategies," says Andrei Tchurikov, Line Maintenance Manager at Magnetic MRO. "We are also planning to land on two new outstations located in Groningen and Hamburg Airports by the end of March to provide our utmost line maintenance and AOG support to Nordica's CRJ aircraft. As a part of our growth strategy, we continue to open new outstations while adding new customers to existing ones, supported by technical assistance tailored to the requirements of all customers." As of February 2018, Magnetic MRO has added Air Nostrum to its CPH customer base with a concentrated support of technicians, tooling and logistics. Additionally, Magnetic MRO has announced that the company will further expand its line maintenance capabilities for the Airbus A330.

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FAI Technik cabin refurbishment of Global Express
Photo: FAI Technik

FAI Technik expands capacity and completes most-challenging conversion project to date

FAI Technik, the maintenance division of Germany's FAI Aviation Group, has reported record financial results in 2017 achieving revenues of €9.7m (US\$11.8m) for the first time in the company's history. The division's revenues mark a significant increase of 40% compared with 2016. The company inaugurated its new 4,500 m² carbon neutral Hangar 8 last year, the largest general aviation hangar complex in Germany complementing its existing 2,000 m² Hangar 6 and 3,000 m² Hangar 7. FAI Technik's strong performance has also been buoyed by its ability to take on more challenging projects. The Nuremberg-based MRO, which is supported by some 60 full time staff, has recently succeeded in undertaking its most-expansive and challenging project to date. FAI Technik has completed a 6,000-man-hour cabin conversion of a classic Global Express aircraft for a corporate client, including the installation of an XRS cabin including a 180-month inspection and paint. The MRO has also just completed a combined 96- and 192-month inspection as well as a full cabin refurbishment and new paint on a Challenger 604 on behalf of German GA Operator, Air Independence.

Lufthansa Technik presents ToolNOW – first online brokerage platform for tool loans

At the International Airlines Technical Pool (IATP) Conference in Riga, Latvia, Lufthansa Technik AG has presented ToolNOW, the first online brokerage platform for tool loans in the aviation industry, under its brand AVIATAR. Both Airline operators and MRO companies worldwide can use this platform to cover their aircraft-related tool requirements through loans. Their requests are answered by other MRO companies, manufacturers and airlines on the platform. The loan process is simplified considerably through standardized requests and offers. This also reduces the time between request and delivery of the tools. In addition, users can track the live status of their requests at all times. The more customers use ToolNOW, the bigger the network becomes. MRO companies, OEMs and airlines can thus share their tool inventories and are no longer dependent on the costly expansion of their own inventory. Right from the start, the functionalities of the ToolNOW platform were defined and implemented in close cooperation with future users such as TUIfly GmbH. "ToolNOW is a completely new business model. It is based on our experience in the

tool loan business and extends the range of services offered by the digital AVIATAR platform. Through the use of ToolNOW, required tools can be ordered quickly and well enough in advance. The time that an aircraft spends on the ground can thus be reduced considerably, resulting in enormous cost savings," says Martin Beecken, ToolNOW Project Manager at Lufthansa Technik. Following a test phase of several weeks with selected customers, ToolNOW has now been officially launched and unlocked for the market.

Specialist aircraft component support provider Bii continues to secure contractual support programs with operators across the globe

Specialist aircraft component support provider Bii, is continuing to secure a wide range of contractual support programs with operators of all sizes across the globe. In particular Russia, the Baltics, Western, Central and Eastern Europe, Eastern Mediterranean, North Africa and the Middle East have shown dramatic growth in the past twelve months. CEO Francis Cradock attributes this to Bii's determination over the past three years to evolve from a military spares provider to focus on the commercial market. "We took a strategic decision to adjust our inventory and have placed significant investment behind primarily Boeing stock, including a major initiative to take on materials on consignment from airlines, OEMs and lessors" he says. "We now provide an Asian start-up with a comprehensive advance exchange program from our rapidly expanding 737NG rotatable pool for their 737-800 fleet." Bii is now recognized as one of the leading European stockists of Boeing 747 material resulting in its selection as the sole supplier of 747-400 home base stock to a leading Russian airline. Bii has also recently extended their support contract with a major Middle Eastern airline to provide guaranteed availability of rotables and consumables covering 747-400, 737-800 and RJ85 aircraft. Focused smart decision making to ensure aircraft dispatch reliability requires an open mind and success with consignment material has seen Bii maximize the value of inventory, manage scrappage, and co-ordinate repairs for its airline customers.

StandardAero and Papillon Airways sign MOU for 40 Crash-Resistant Fuel tanks

StandardAero and Papillon Airways have signed a Memorandum of Understanding (MOU) for 40 retrofittable Crash-Resistant

Fuel Tanks (CRFTs) in support of Papillon Grand Canyon Helicopters' fleet of Airbus AS350 B3 and EC130 B4 tour aircraft. Installation of the first CRFT will take place this April.

"Papillon Grand Canyon Helicopters has made the commitment to lead our industry by retrofitting our tour fleet with recently FAA-certified crash resistant fuel systems," says Lon Halvorson, owner and Executive Vice President, Papillon Airways.

The CRFT has been developed by StandardAero (formerly Vector Aerospace) and Robertson Fuel Systems as a direct replacement for all AS350 models, including the AS350 C, AS350 D/D1, AS350 B/B1/B2/BA/B3 and AS350 B3e (H125), as well as for the EC130 B4. The tank's unique design features a robust crash-resistant fuel bladder, offering the same capacity as the legacy fuel cell and uses several innovations including magnetic field sensor fuel gauging technology and vent system roll-over protection. The CRFT is compli-

ant with the latest FAR Part 27.952 fuel system crash resistance requirements, even when used in combination with a cargo swing. Public and regulatory focus on enhanced helicopter safety has continued to grow since the CRFT was first unveiled in 2015. The FAA Reauthorization Act now includes an amendment requiring the FAA to make helicopter owners aware of fuel system retrofits and to urge them to install retrofits "as soon as practicable."

System and a UNS-1Fw Satellite-Based Augmentation System (SBAS)-Flight Management System (FMS). Ground testing and upcoming flight testing for the VVIP retrofit program is being performed at Universal Avionics Authorized Dealer, Heli-One Canada, in Vancouver, British Columbia. Universal Avionics' well-proven, reliable EFI-890H solution is a customized, cost-effective technology upgrade for the S-76B. The upgrade provides the ability to see the projected flight path when coupled with the display of aircraft traffic, a powerful safety improvement. This allows the operator to see where the other traffic is in relation to the track they intend to take and to judge diverging or converging tracks well in advance. Enhanced Ground Proximity Warning System (EGPWS) terrain will also be displayed, providing terrain mapping when operating low level in an airport or off-airport environment. When operating in marginal visual meteorological conditions (VMCs), this is a tremendous enhancement in safety.

Ground testing complete for S-76B's with Universal Avionics upgrade

Ground testing for Heli-One's Sikorsky S-76B helicopter upgrade program featuring a Universal Avionics flight deck is now complete, with flight testing imminent. The aircraft is operated by a VVIP operator in Asia. The upgraded, modern glass cockpit includes the installation of three EFI-890H Advanced Flight Displays with Vision-1® Synthetic Vision



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Lufthansa Technik joins CFM's LEAP network
Photo: LHT

LHT signs Branded Service Agreement for CFM LEAP-1A engine

CFM International and Lufthansa Technik completed a CFM Branded Service Agreement (CBSA) on February 28, to support CFM LEAP-1A engines. Under the terms of the CBSA, Lufthansa Technik becomes part of the maintenance, repair, and overhaul (MRO) network for LEAP-1A engines. "It is a real pleasure to welcome a provider of the caliber of Lufthansa Technik to the LEAP MRO network," said Gaël Méheust, president and CEO of CFM International. "We have a very long, very successful relationship with them through the CFM56 product line. This Branded Service Agreement will take that relationship to a whole new level. We are very proud of what we have accomplished with the LEAP engine in terms of fuel efficiency, reliability, and daily utilization and our customers love flying this engine. We believe that the level of support Lufthansa Technik can provide will help ensure that our customers continue to reap those benefits over the life of the product."

GE Aviation expanding two North Carolina plants to meet growing demand for jet engines

Just five years after breaking ground, GE Aviation is investing an additional US\$105m in its Asheville, NC, production facility to meet growing demand for the revolutionary ceramic matrix composite (CMC) components produced at the plant. As part of the investment, GE Aviation will create 131 new jobs at the Asheville facility, significantly increasing its workforce of 425 employees. GE Aviation also is adding 15 new positions at its West Jefferson, NC, manufacturing plant, which currently employs more than 270 staff. GE Aviation's Asheville and West Jefferson facilities are part of the company's Global Supply Chain,

which includes some 80 facilities in 19 countries employing more than 27,000 people. GE Aviation also operates a component manufacturing facility in Wilmington and an engine assembly plant in Durham. GE Aviation currently employs more than 1,700 people in North Carolina. The Asheville CMC plant, opened in 2014, was the company's first site to mass produce CMC components for jet engines. The demand for CMCs is expected to grow tenfold over the next decade, driven by rising jet engine production rates. Each new LEAP engine, produced by CFM International (50/50 joint company of GE and Safran of France) has 18 CMC turbine shrouds, which are stationary parts in the high-pressure turbine that direct air and ensure turbine blade efficiency. LEAP production is accelerating quickly, and more than 14,270 engines are currently on order. CMCs are also being used in the combustor and high-pressure turbine section of the new GE9X engine under development for the Boeing 777X twin-aisle aircraft. Almost 700 GE9X

engines are on order.

Falcon Aviation adds Bombardier Q400 base maintenance at Al Bateen, Abu Dhabi MRO facility

Falcon Aviation, one of the UAE's leading aviation companies specializing in business aviation services, charter and aircraft management, is further broadening its MRO expertise having obtained GCAA approval to start Bombardier Q400 base maintenance in its Fixed Wing Hangar at its Al Bateen Executive Airport HQ, Abu Dhabi. It will support its own six-strong fleet of Q400 NGs, three of which are operating on the AOC of Qazaq Air in Kazakhstan, serving domestic routes in the country. Qazaq Air will bring one of its Q400s into Al Bateen for maintenance in the next few weeks. "We are delighted to have this accreditation to carry out base maintenance and provide MRO on the Q400NGs," said Falcon Aviation COO Captain Raman Oberoi. Falcon Aviation's fixed wing and rotary wing MRO at Bateen Airport already holds capabilities for Embraer and Gulfstream Business Jets; the Pilatus PC-12, Airbus Helicopters, Leonardo Helicopters and Bell Helicopters. Falcon Aviation is also marking three successful years' flying on its fixed-wing oil and gas operations with daily flight services operated by two Q400NGs - between Al Bateen and Das Island, and between Al Bateen and Zirku Island. The service, which started in September 2015 to serve demand from the Abu Dhabi National Oil Company (ADNOC) has grown from an initial 61,000 passengers in its first year to 187,000 in 2016, increasing to 215,000 passengers during 2017. Today, the route supports 12 flights daily, back and forth, carrying 700 passengers a day.



Falcon Aviation's Bombardier Q400NG
Photo: Falcon Aviation

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XL Airways extends cooperation with AFI KLM E&M

AFI KLM E&M and XL Airways have extended their existing contract covering component support (repairs and pool access) and A checks for the French airline's four Airbus

A330s from its Paris-Charles de Gaulle base at Roissy. The scope of the contract could eventually be broadened to include support for other aircraft, depending on the growth of the XL Airways fleet. The two groups have worked together for around ten years, providing total satisfaction to XL Airways. Based at

Paris-CDG, close to AFI KLM E&M's facilities and maintenance shops, XL Airways has always benefitted from ultra-responsive support right on its doorstep, guaranteeing operational continuity.

Finance News

MTU Maintenance secured contracts worth US\$3.7bn in 2017

MTU Maintenance, the MRO division of MTU Aero Engines AG, secured over US\$3.7bn in contract wins in 2017, an impressive US\$1.5bn more than in 2016, making 2017 the most successful year of the company in its history. In addition to significant contract wins, the MTU Maintenance network of facilities carried out over 18,000 repair and overhaul shop visits in a single year. Of these, over 300 visits were for the V2500 engine family and 125 were for the CF34 family. Further highlights were achieved at MTU Maintenance Hannover, which has just superseded the 8,000th shop visit mark, and MTU Maintenance Canada, which introduced the V2500 line to its facility. In light of the high volumes already entering MTU Maintenance's shops and the global engine MRO growth trend, MTU is expanding capacity and employing new staff at all facilities. "In particular, we will further invest in our Chinese facility," says Michael Schreyogg, Chief Program Officer, MTU Aero Engines. "Its capacity of 300 shop visits per year is to be expanded by another 50% again within the coming years so as to keep up with local market growth, the fastest in the world, as well as to accommodate any new programs in due course."

Additionally, a new joint venture named Engine Maintenance Europe, or EME Aero for short, was announced in December and founded between MTU Maintenance and Lufthansa Technik. According to current plans, the facility will be operational in 2020 and will have an annual capacity of over 400 shop visits. It will service the PW1000G-series geared turbofan engines as part of the OEM network. MTU Maintenance Lease Services B.V., operating out of Amsterdam, Netherlands, more than doubled sales in 2017 versus 2016. The young and successful start-up has welcomed over 60 new lease and asset management customers and nearly doubled its pool of lease engines. In 2018, the company will be focusing on technical engine asset management services as well as flexible MRO and asset management solutions for asset owners and operators. Airfoil Services (ASSB), a joint venture between MTU Maintenance and Lufthansa Technik, also had a successful year in 2017. Repair volume increased by around 35% year on year. Growth was down to strong demand for CFM56 blade repairs and continued strong volume in V2500 blade and vane repairs. Furthermore, ASSB started repairing LPT and HPC blades for GP7000 engines last year and is a single-source supplier for these components. Alongside MTU and LHT business, third-party work makes up 36% of ASSB's business. Within MTU Aero Engines AG, the commercial maintenance business achieved the highest growth rate in terms of rev-

enues in 2017, having increased by 19% to €2,285.3m (2016: €1,914.4m). The company's revenue forecast for its commercial maintenance business (MRO segment), expressed in U.S. dollars, is for a growth rate in the high teens in 2018. (€1.00 = US\$1.24 at time of publication.)

JetFleet shareholders approve acquisition by AeroCentury

Independent aircraft leasing company AeroCentury has announced that shareholders of JetFleet Holding Corp. (JHC) have approved the acquisition of JHC by the AeroCentury pursuant to the terms of the definitive Agreement and Plan of Merger (Merger Agreement) between the AeroCentury and JHC. JHC is the parent of JetFleet Management Corp. (JMC), which has managed the AeroCentury's operations and aircraft portfolio since the Company's founding in 1997. AeroCentury currently anticipates that the remaining conditions precedent to consummation of the merger under the Merger Agreement will be satisfied in due course and currently anticipates closing of the merger in early April, 2018.

Embraer's full-year 2017 revenues decline 6%

During 4Q17, Embraer delivered 23 commercial and 50 executive aircraft (32 light jets and 18 large jets), for a total of 101 commercial and 109 executive aircraft (72 light and 37 large) delivered in 2017, meeting the Company's 2017 Guidance for aircraft deliveries. This compares with a total of 32 commercial jets and 43 executive jets (25 light and 18 large) in 4Q16 and total 2016 deliveries of 108 commercial jets and 117 executive jets (73 light and 44 large). Consolidated revenues of US\$ 1,733.0m in 4Q17 represented a 14.5% year-over-year decline, driven primarily by the lower deliveries in the Commercial Aviation segment as well as a 15.0% decrease in Defense & Security segment revenues as compared to 4Q16. For fiscal year 2017, the Company's consolidated revenues of US\$ 5,839.3m were down 6.1% compared to the US\$ 6,217.5m reported in 2016, driven largely by declines in commercial and executive jet deliveries, while Defense & Security segment revenues increased 1.9% in 2017. Embraer's consolidated revenues met the Company's 2017 Guidance range of US\$ 5.7 – US\$6.1bn in revenues. The Company's gross margin of 20.0% in 4Q17 was stable compared to the 20.1% reported in 4Q16 despite the

aforementioned decline in revenues in the quarter. For the full year, Embraer's gross margin was 18.3% in 2017 vs. the 19.9% reported in 2016, reflecting lower executive and commercial jet deliveries and negative cost base revisions on certain Defense & Security contracts. EBIT and EBIT margin as reported in 4Q17 were US\$ 66.7m and 3.8%, respectively, down from EBIT of US\$ 276.6m and EBIT margin of 13.6% in 4Q16. For the full year, EBIT as reported in 2017 was US\$ 329.3m as compared to US\$ 206.0m in 2016, yielding as reported EBIT margins of 5.6% and 3.3%, respectively. Net income attributable to Embraer shareholders and Earnings per ADS for 4Q17 were US\$ 35.2m and US\$ 0.19 per share, respectively, bringing total 2017 net income attributable to Embraer shareholders and earnings per ADS to US\$ 246.8m and US\$ 1.34 per share, respectively. Adjusted net cash generated by operating activities net of adjustments for financial investments (and excluding cash payments for special items) was US\$ 608.1 million in 4Q17 and adjusted free cash flow for the quarter was US\$ 406.7m. This compares to adjusted net cash generated by operating activities net of financial investments of US\$ 497.5m and adjusted free cash flow of US\$ 285.0m in 4Q16. In 2017, adjusted free cash flow was US\$ 404.8m, compared to adjusted free cash flow of US\$ (359.2) m in 2016 and the Company's guidance for 2017 of a usage of US\$ 150m or better.

BOC Aviation reports record profits

BOC Aviation has announced its audited financial results for the full year ended December 31, 2017.

Total revenues and other income rose 17% year-on-year, to US\$1,401m. Net profit after tax was US\$587m, an increase of 40% over 2016. Total assets increased 19% year-on-year, to US\$16bn at December 31, 2017. BOC Aviation raised US\$2.9bn in total debt, including a first-ever US\$1bn dual-tranche bond offering. The company maintained strong liquidity with US\$305m in total cash and fixed deposits and US\$3.7bn in undrawn committed credit facilities at December 31, 2017. BOC Aviation reported portfolio utilization of 99.8% and cash collection from airline customers of 99.9%. The board recommended a final dividend for 2017 of US\$0.192 per share, pending approval at the AGM to be held on May 30, 2018.

HAECO Group reports 2017 final results

The HAEKO Group has reported an attributable loss of HK\$541m in 2017. This loss included an impairment charge of HK\$625m in respect of the goodwill attributable to HAEKO USA Holdings, Inc. (HAEKO Americas) and a write off of HK\$249m in respect of HAEKO Americas' net deferred tax assets. This compares with a profit of HK\$975m in 2016, which included a gain of HK\$805m on disposal of the interest of Hong Kong Aero Engine Services (HAESL) in Singapore Aero Engine Services (SAESL) and an impairment charge of HK\$285m in respect of the goodwill attributable to HAEKO Americas. Disregarding the impairment charges in both years, the net deferred tax asset write off in 2017 and the gain on disposal in 2016, the HAEKO Group made an attributable profit of HK\$340m in 2017, compared with an attributable profit of HK\$516m in 2016. (US\$1.00 = HK\$7.84 at time of publication.)

ATSG revenues, earnings up sharply in 2017

Air Transport Services Group has posted consolidated financial results for the quarter ended December 31, 2017. Fourth-quarter revenues increased US\$101.3m, or 46%, to US\$323.0m and revenues for all of 2017 rose 39% to US\$1.1bn. ATSG's leasing, airlines, maintenance and logistics businesses all recorded double-digit revenue increases before eliminations for the fourth quarter. Fourth-quarter GAAP Earnings from Continuing Operations were US\$94.1m, 2017 GAAP Earnings were US\$21.7m. Fourth-quarter Adjusted Earnings increased 73% to US\$20.7m, 2017 Adjusted Earnings were US\$61.1m up 63%. Fourth-quarter Adjusted Earnings from Continuing Operations exclude, among other items, a US\$59.9m benefit from the effects of the 2017 Tax Cuts and Jobs Act on ATSG's net deferred tax liabilities at the end of 2017, and US\$14.9m in net gains from warrants issued to Amazon.com Service. Fourth-quarter Adjusted EBITDA increased 43% to US\$80.8m, 2017 Adjusted EBITDA up 27% to US\$267.9m. 2017 Capital expenditures were US\$296.9m, up 12%.

AeroCentury announces issuance of permit for acquisition of JetFleet Holding

AeroCentury, a global aircraft leasing company has reported that the California Department of Business Oversight has determined that the terms and conditions of the offer and sale of AeroCentury common stock in AeroCentury's proposed Merger (the Merger) with JetFleet Holding Corp. (JHC) are fair. Consequently, the Department issued a permit authorizing AeroCentury to solicit the consent of the JHC shareholders to the Merger, and issue shares of common stock in the Merger when and if such Merger is consummated. The determination was made following the conclusion of a fairness hearing regarding the Merger conducted on February 22, 2018, under Section 25121 of the California Corporations Code. The issuance of the permit will mean that shares of AeroCentury common stock exchanged in connection with the Merger can be issued in reliance upon an exemption from registration afforded by Section 3(a)(10) of the Securities Act of 1933, as amended. The proposed Merger remains subject to the approval of JHC's shareholders and the satisfaction of certain other customary closing conditions. Provided these conditions are completed on a timely basis, AeroCentury expects the acquisition to close in early April 2018.

Airbus completes sale of Plant Holdings to Motorola Solutions

Airbus has finalized the sale of Plant Holdings, which holds the Airbus DS Communications business, to Motorola Solutions, after receiving the required regulatory approvals. This divestment is part of the portfolio reshaping within the Airbus Defence and Space Division announced in September 2014. Airbus DS Communications is a leading provider in North America of command centre software for fielding emergency calls (911) and citizen emergency notification. It generated revenues of more than US\$100m in 2016.

Rolls-Royce posts underlying profit of £520m for its Civil Aerospace segment

Rolls-Royce has announced that its Civil Aerospace segment posted underlying revenue of £8,023m and underlying operating profit of £520m for full year 2017. The company reported underlying revenue and underlying operating profit growth of 12% and 34% respectively, driven by a 35% increase in large-engine delivery volumes and a 12% increase in invoiced flying hours. Underlying services revenue grew by 12% for the full year 2017. Unit cost reductions and pricing improvements: 37% reduction in Trent XWB-84 cash deficit; overall OE cash deficit stable at £1.6m, as expected given the change in production mix. Rolls-Royce reported good progress on new engine programs during 2017: the Trent 1000 TEN entering into service, the Trent XWB-97 achieving certification and the Trent 7000 powering the Airbus A330neo's first flight. The company reported significant in-service engine issues on the Trent 1000 and Trent 900 engines, principally due to lower-than-expected durability of certain turbine and compressor rotor blade parts. Focus to mitigate disruption to customers, current year £227m income statement charge and £170m impact to cash flow. (£1.00 = US\$1.39 at time of publication.)

AeroCentury Corp. reports fourth-quarter 2017 earnings of US\$6.0m

Independent aircraft leasing company AeroCentury Corp., has reported fourth-quarter earnings of US\$6.02m, compared to US\$385,000 in the third quarter of 2017 and a loss of US\$40,000 in the fourth quarter of 2016. Fourth-quarter 2017 results included a US\$5.4m tax benefit from the revaluation of the Company's deferred tax liability caused by of the passage of the Tax Cuts and Jobs Act of 2017. Earnings for 2017, which included the US\$5.4m tax benefit noted above, totaled US\$7.4m as compared to US\$1.2m for 2016. "Modernizing our portfolio by replacing older aircraft with younger mid-life aircraft

remains a priority," said Michael Magnusson, President. "During the fourth quarter, we sold two regional jets, one turboprop aircraft, one engine and aircraft parts, generating a net gain of US\$922,000. To date, in 2018, we have already sold two aircraft, generating a US\$45,000 gain. The average age of aircraft we are holding for lease is currently approximately 11 years." As previously reported, AeroCentury Corp. announced on October 26, 2017 the signing of a merger agreement to acquire JetFleet Holding (JHC), which has managed the Company's operations and aircraft portfolio since AeroCentury's founding in 1997.

Aviation Capital Group announces formation of new Aircraft Financing Solutions group

Aviation Capital Group (ACG) has announced the formation of its new Aircraft Financing Solutions (AFS) group. The AFS initiative will focus on the development and marketing of credit-enhanced financing structures that provide airline customers more alternatives and greater access to additional sources of capital for aircraft purchases, while providing improved risk-adjusted returns for lenders and capital providers. To help launch the AFS initiative, Robert Roy, Andrew Falk and Robert Lewandowski will be joining ACG as managing directors and will together help lead program development, transaction underwriting and management. All three executives were previously with the Export-Import Bank of the United States (EXIM Bank), collectively serving over 50 years as key members of EXIM Bank's aircraft finance team. Together, they helped create and run EXIM Bank's highly successful aircraft finance program, which supported over US\$100bn of financing, covering more than 1,700 commercial aircraft. Mr. Roy, Mr. Falk, and Mr. Lewandowski will join ACG in late March 2018 and will be located in ACG's Newport Beach office.

Information Technology

Turboprop manufacturer **ATR** is taking part in the EDG²E project (Equipment for Dual frequency Galileo, GPS and EGNOS). Over the next four years, this initiative will develop a dual-frequency multi-constellation receiver, enabling enhanced navigation capabilities. EDG²E is a project led by **Thales**, under a consortium benefiting from the competencies of ATR and **Thales Alenia Space, AKKA, Dassault** and **DGAC**, the French Civil Aviation Authority, will also participate as sub-contractors. The receiver, a GNSS (Global Navigation Satellite System), is the cornerstone of aircraft navigation. The system processes signals from satellite constellations and the Space Based Augmentation System (SBAS) to accurately determine aircraft position, altitude and velocity. The prototype receiver developed under the auspices of the EDG²E project will use signals from US GPS and European Galileo positioning systems, as well as

from SBAS multi-constellation EGNOS. The project aims at achieving a prototype demonstration by 2021. The prototype receiver performances will be evaluated during a flight test campaign to be performed using one of the ATR's test aircraft. Initiated by the European Global Navigation Satellite Systems Agency (GSA), the EDG²E project aims to support the launch of the Galileo satellites constellation, designed to become the European alternative for the American GPS. ATR's involvement in this Research & Technology (R&T) project is part of a larger commitment to prepare for the future. By steering R&T activities towards technical topics and solutions that are specific to regional aviation, ATR wants to continuously improve the technical design of its products.



The SONIC Aviation A&P Kit

Photo: SONIC Tools

SONIC Tools and **Aviation Institute of Maintenance (AIM)** have announced a partnership that provides AIM students with professional, precision-crafted hand tools and provides SONIC an outlet to positively influence rising aviation technicians. The focus of the partnership will be providing practical solutions for the best aspiring aviation technicians in the U.S., while reducing student debt. With the partnership, SONIC Tools becomes the exclusive Tool Supplier for all 11 AIM campuses nationwide. In addition to supplying equipment and being fully integrated into the AIM programs, SONIC has designed and manufactured an aviation-specific toolbox and tools for students and professional aviation technicians alike. The SONIC Aviation A&P Kit is the centerpiece of the partnership and will be available at all AIM campuses throughout the country. Aviation Institute of Maintenance (AIM) is a network of aviation maintenance schools with campuses coast-to-coast across the United States and headquarters located in Virginia Beach, Va. AIM students are trained to meet the increasing global demands of commercial, cargo, corporate and private aviation employers. AIM graduates are eligible to take the FAA exams necessary to obtain their mechanic's certificate with ratings in both Airframe and Powerplant.

Lufthansa Technik AG develops end-to-end maintenance concepts tailored to the individual needs of the customer. Its new product called Maintwise is available to customers of Lufthansa Technik as a consulting service. Maintwise allows Lufthansa Technik to address the individual aircraft operator's highly specific circumstances. In cooperation with the customer's planning and engineering experts, the Lufthansa Technik engineers devise an individual maintenance concept, which harmonizes the flight plan optimally with the maintenance program. Depending on the customer's objective, attention focuses here on de-

livering better aircraft availability or lower maintenance costs. Further objectives can include improving planning stability or increasing flexibility for aircraft deployment. The customer's requirements are identified in a first step. The Lufthansa Technik experts then define possible optimization criteria. Various concepts are simulated and evaluated. Based on these investigations, Lufthansa Technik develops a series of optimized maintenance concepts from which the customer chooses the model best suited to their objectives. The handover of the final concept to the customer marks the conclusion of the project. Freya Schmitz, Maintenance Concept Engineer at Lufthansa Technik, explains: "All of our customers can benefit from the advantages of Maintwise. The product offers interesting competitive advantages for start-up airlines or airlines with growing fleets or new routes as well as for operators, whose goal is to reduce the ground times of their aircraft or reduce maintenance costs."

Honeywell International has released that **Comair** has selected its suite of advanced cockpit technologies for its future fleet of Boeing 737 MAX aircraft. Outfitting the first 737 MAX fleet in Africa, Comair is using one of the industry's leading navigation and weather systems, including Honeywell's Integrated Multi-Mode Receiver and the IntuVue® RDR-4000 3D Weather Radar system. These advanced technologies work together to help pilots prepare for and respond to new or difficult runway approaches and hazardous weather conditions. In turn, Comair can increase passenger safety and comfort, while preparing for future flight safety regulations

Israel Aerospace Industries (IAI) has joined forces with **Starburst**, a global accelerator focused on Aerospace and Defense sectors. This innovative collaboration is expected to be the first step in realizing IAI's objectives to become a significant technological player and strategic partner for startups in the Aerospace and Defense fields, by offering technological and business expertise, technology validation, mentoring and access to such startups' potential markets.

With presence in three continents, Starburst comprises 300 startup companies and 26 companies in the accelerator, including **GE Aviation**, **Boeing**, **Lockheed Martin**, **Raytheon**, **Thales**, **Airbus** and more. IAI will participate in the election of startups to the accelerator that meets IAI's criteria, and in addition, overseas startups that already participate in the accelerator will present technologies selected by IAI according to pre-determined criteria.

The model will enable IAI to identify innovative technologies that can contribute to its current and future growth engines and technological roadmap and maintain its position as a technological spearhead, through technical collaboration and equity investments in the forefront of aerospace technology.



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Heavy checkers

There are still more than 300 747-400s in service across the globe.
Photo: British Airways

Aircraft MRO is crucial for sustaining and extending the life of widebody aircraft. **Keith Mwanalushi** analyses the market for heavy maintenance.

By 2019, the global widebody aircraft MRO market is expected to be sized at around US\$31 billion according to industry estimates. The global widebody fleet is forecast to grow from 5,000 aircraft to over 7,400 by 2027.

Oliver Wyman anticipates that the 787 series will be the most delivered widebody, followed by the A350. This contrasts with today's fleet, in which the A330/A340 family is the largest fleet, followed by the 777 series. The change, among other things, will create a significantly more fuel-efficient, high-tech fleet. Even though Airbus is introducing the A330neo, improvements in operational costs and efficiencies offered by the 787, A350 and 777X will ultimately outweigh the A330neo's lower acquisition cost. Operators seem to agree, as evidenced by a scarce order book for the aircraft. The A380 is not expected to expand far beyond its current network of operators, with a demand of only about 15 aircraft per year.

US based MRO provider AAR believes there may be opportunity for growth in widebody heavy maintenance as carriers consider repatriating work to US facilities given the shrinking gap in labour rates between North America and Asia and national support for using American workers. "There will also be an increase in heavy maintenance requirements for new-generation aircraft in coming years. We built our new Rockford, Illinois MRO with these two areas of opportunity in mind," comments Troy Jonas, Vice President, Airframe Maintenance at AAR.

Outsourcing widebody heavy maintenance to third-party companies

is becoming a clear trend observes Jeff Wilkinson, CEO of Joramco. "In recent years, we have been seeing a significant increase in wide body heavy maintenance demand especially from Europe," he says.

In addition to winning widebody business from regional operators like Gulf Air and Oman Air, Joramco supports European carriers like Swiss, Lufthansa, Hifly and Onur for heavy maintenance. The current widebody activities focus on legacy aircraft like Airbus A330 and A340, however, Joramco has now acquired the capability to work on new generation aircraft like the 787 and soon to be introduced the 777.

Rick Townsend, Vice President Business Development at Avianor feels 2017 was the year of the 777. Avianor Inc. was fortunate to be part of an initial wave of 777 lease returns and transition work which included maintenance, modification, cabin integration and refurbishment work.

"These early 777 aircraft will continue to come off



Jonas - Large independent MROs like AAR keep costs down through economies of scale.



Several 777s will come off long term leases in 2018 and 2019.
Photo: AFI KLM E&M

long term leases in 2018 and 2019 as they are being replaced with newer aircraft. Additionally, Avianor saw continued opportunities to perform MRO and cabin integration work on 767's and A330's for several global operators," says Townsend.



Townsend says 2017 was the year of the B777.
Photo: Avianor

747-400s that went in storage when the market saw no hope for them returning to the skies are now slowly coming back into service with the required MRO work performed.

"Additionally, some cargo operators are using the rebound in the cargo market to replace earlier 747-200's with -400's to improve their efficiencies," he adds.

Jonas from AAR reminds that there are still more than 300 747-400s in service across the globe, so there is a significant market for MRO on these aircraft. "The inquiries we get for this airframe in North America are typically for only a few aircraft, which makes it tough to justify a new investment in tooling and training."

Rob Neugebauer, AFI KLM E&M Technical Sales Director Airframe

notes that heavy checks of mature aircraft tend to go or stay in low man-hour rate areas as the total number of man hours are high. But for new technology aircraft this trend is not there (yet) but will depend also on mods/SB's and the total amount of forecasted man hours.

In terms of trends in widebody heavy maintenance, Albert Koszarek, President and Chief Executive Officer at AeroXchange says there is interest in improved maintenance progression tracking with enhanced efficiency. This continues to grow as the industry moves toward better use of digital data where task cards advance from signed PDFs to dynamic and interactive electronic task cards with supporting production control systems.

New generation aircraft like the A350 are serviced based on parameters such as flight hours and flight costs rather than traditional checks, so might we see a shift in processes from the rigid C and D checks?

"Not so much," reckons Neugebauer. He says for the carriers the limiters parameters are clear, but the seasonality is still driving the maintenance planning-period. "For the build-up of cost, the experience gained already shows the need for a different way of planning the maintenance visits and the man-power and skills in the various phases of the visit. For us as an MRO, the maintenance packages are already well understood and as such we understand the change of technology and its result in related work."

Jonas adds that the advancements in design and materials used in the fabrication of new generation



Rob Neugebauer, AFI KLM E&M Technical Sales Director Airframe



Albert Koszarek, CEO at AeroXchange

aircraft will reduce MRO labour content over the life of the airplane relative to older airplanes. "Right out of the gate, these airplanes have heavy maintenance intervals pushing three years versus two years for previous generation aircraft. Nevertheless, there will continue to be robust and growing demand for maintenance services as the entire industry expands."

Airframe maintenance will continue its trend of lower unit costs, driven primarily by heavy maintenance visit intervals stretching to 12 years. This is possible through the increased use of composites and hybrid alloys in new-generation aircraft, providing better fatigue and corrosion resistance than previous generations.

There has been an ongoing argument that the increased focus of OEMs on aircraft airframe MRO may have significant impact on the cost of maintenance services. Jonas suggests that the biggest challenge MRO faces today is the limited availability of experienced AMTs/aviation mechanics to meet demand. "This is an issue for all MRO providers and impacts costs." Jonas states.

Large independent MROs like AAR keep costs down through economies of scale and shared services across seven hangars. AAR also provides the opportunity for carriers to bundle heavy maintenance with other services that AAR provides, like landing gear overhaul and flight-hour component support, with the ease of dealing with one provider. "We also know that some airlines prefer working with an independent MRO provider like AAR that can service mixed fleets of Airbus and Boeing aircraft," Jonas continues.

Neugebauer highlights the more expensive cost of materials, components, the cabin work and the number of SBs and modifications associated with new technology aircraft.

Wilkinson from Joramco agrees that growing involvement by OEMs has an impact on MRO costs. He says OEM's are becoming highly involved in the aftermarket services provided to their customers.

"This creates a competitive environment where MROs are forced to reduce maintenance costs to their customers. Moreover, there is a growing threat from OEM's concerning proprietary information such as tools, material, manuals and the like. This growing OEM aftermarket involvement will challenge the business opportunities for independent MRO's over the coming decade," Wilkinson warns.

As the OEM's enter the airframe MRO market, Townsend anticipates that three things will probably happen: OEM's will only drive MRO rates up as their costs are higher than independent airframe MRO's. The OEM's will bring analytics / more data to the airframe MRO "party" and thirdly, competition will increase even more for a market space that is highly competitive now and very margin sensitive.

Given the rapid transition to new-generation aircraft over the next decade, it is clear that MRO providers must be prepared for the type of work associated with the newer fleet types or focus their strategy to capture end-of-life markets. From an airframe MRO perspective, providers must be able to handle the new composite and metal matrix materials dominant in the newest-generation aircraft, such as the 787 and A350. The newer technology includes much more sophisticated avionics and systems that are able to interface with health monitoring systems, designed to recognize pending system or component failures. This new era of "big data" capture and processing will require a clear strategy to take full advantage of its potential.



Jeff Wilkinson, CEO of Joramco.



The 787 series will be the most delivered widebody.
Photo: AFI KLM E&M

Unequivocal precision

Aero Norway is an independent engine MRO specialist located at Stavanger airport on the west coast of Norway. The modern and well-equipped 14,500 sq.m. facility has the capacity to deliver 120 engines a year with streamlined workflow processes to repair 16 engines consecutively at any one time. Production, test and storage areas cover a further 12,500 sq.m., with the headquarters and training centre adding another 2,700 sq.m. The company employs over 80 highly trained technicians and engineers within the engine shop who work a continuous shift pattern to sustain optimum TATs.

The Aero Norway apprentice scheme currently has eight trainee engineers, all of whom are undertaking a two-year programme. A further 45 personnel are responsible for the sales, customer support and administration. Around the world, Aero Norway has strategic partnerships with more than 20 key suppliers and OEMs. These relationships are rigorously reviewed to maintain quality and cost-savings which are passed on to customers.

CEO Glenford Marston is justifiably proud of the facility's achievements with the CFM56. Clearly, the global operator base is extensive, and Marston believes working exclusively on the CFM56 is the key to the success of the business because the services model that CFM has staked its reputation on for decades is underpinned by independent engine MROs and usage of the CFM56 series shows no signs of waning.

"You have good volumes of engines to get your teeth into and although its competitive, we are not scared of competition when it comes to quality and pricing," Marston tells.



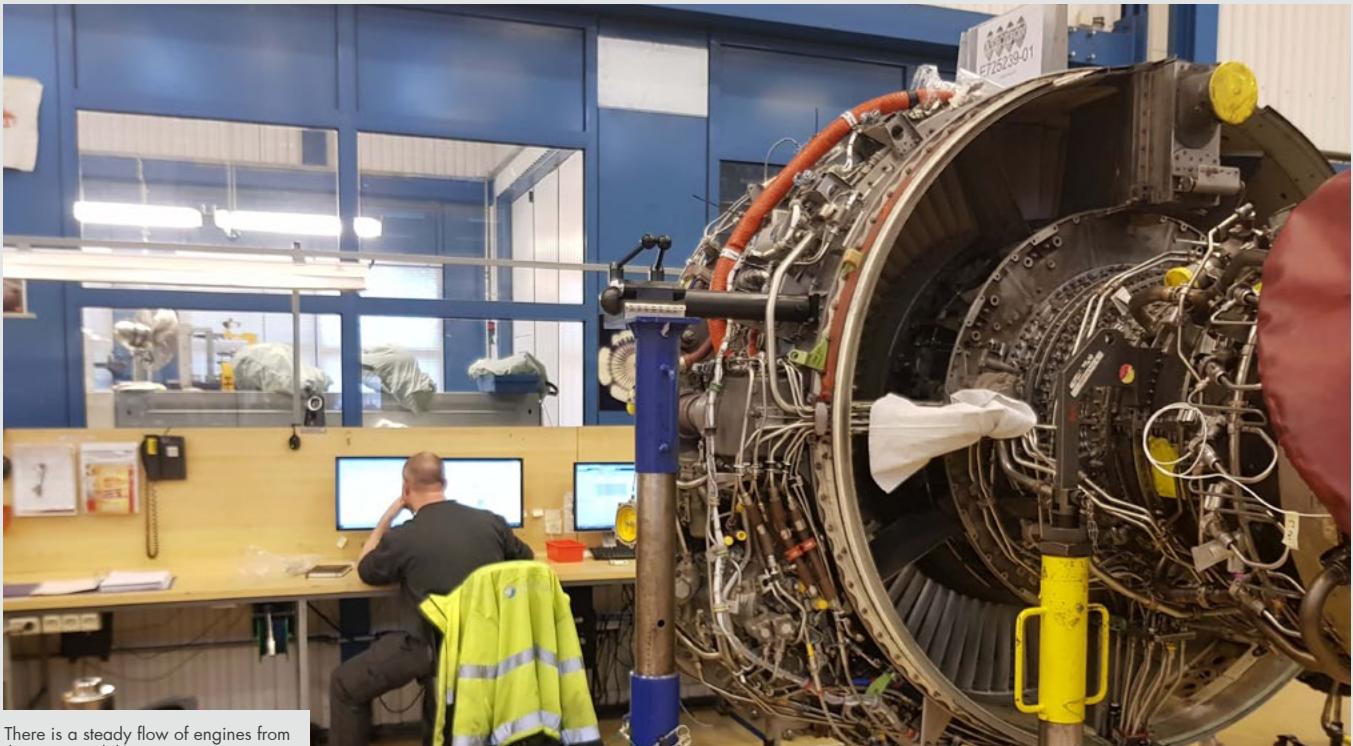
Aero Norway will continue to service the -3 engine.

Marston sees a steady flow of engines from the -3, -5 and the -7 variants and as CFM pushes out new models and engines Aero Norway has sights fully set on servicing the new LEAP engine – "That will be a natural progression for us."

When looking at the market forces today Marston feels the outlook for the CFM56 is solid and he says the business is working to ensure it can sustain its flexibility.



Last year the company did 80 engine inductions.



There is a steady flow of engines from the -3, -5 and the -7 variants.

Marston agrees with analysts when it comes to lease end projections saying now is quite a peak time for the CFM engines, especially for the -5 and -7 because there has been a delay in shop visits for the bulk of engines due to how well they have performed in service.

Despite the dwindling number of 737 Classics in operation Aero Norway has no intention of closing the -3 side of the business.

The company's customer base is mixed flying the Classics, NGs or Airbus. While Marston observes that larger MROs are taking the Classics out of their portfolio Aero Norway will continue to put those engines through their shop in Stavanger.

Last year the company did 80 engine inductions and for 2018 the plan is push that number up to 92.

"We have what we call a roadmap that kind of dictates how we operate, we do this every year. Our short-term plan is to do 120 engines by 2020 – maybe even surpassing that. The capacity of the shop is around 140 engines, but our goal is to consistently do 120," Marston explains.

Marston admits that the business may not be suited to support the likes of Ryanair and easyJet due to their sheer size but many of the big MROs do offload some of this work to Aero Norway which makes sense to their business. "We will not take on the big easyJet's because they will take over your shop we want a broad customer base which keeps our business quite healthy," he says.

Rather, the smaller operators such as the regional and small low-cost carriers are just the kind of operators Marston is interested in. "When they come to the shop we can offer them a package," he states.

He adds that the support extends to anything from the need for engineering assistance to sending a field team to go over and troubleshoot a problem or perform repairs.

With a strong and growing international reputation, Aero Norway builds long-term partnerships with flagship airlines and low-cost carriers, aircraft leasing companies and OEMs.



The Aero Norway apprentice undertakes a two-year programme.

In the hot seat.....

David Sandri, CEO and President, Commercial Jet

AviTrader MRO: What are your current capabilities in terms of commercial aviation MRO?

Sandri: Commercial Jet is a full-service MRO provider, specialising in heavy maintenance, line maintenance, modifications and paint services. We have hangar facilities at Miami International Airport, Florida, and in Dothan, Alabama where we also operate one of North America's few dedicated paint hangars. This facility can accommodate rotor aircraft, and fixed wing aircraft up to the MD-11. Commercial Jet provides comprehensive maintenance services for all series of MD-80 aircraft, B737, B757, B767 aircraft; A320 series, and the Bombardier CRJ series Regional Jet aircraft.

AviTrader MRO: What are your key areas of focus in 2018?

Sandri: In 2017, we invested heavily in modern technologies, along with efficiency and operational improvements. We upgraded to a new Enterprise Resource Planning (ERP) system specifically developed for our MRO business with powerful tracking and operational

management reporting. We are beginning to see the benefits of this newly introduced modular system with improvements which are substantially increasing our operational efficiencies across the board.

Commercial Jet also launched its "Flight To Excellence" operational improvement initiative which encompassed organisational development, planning and scheduling, and shop floor management including lean principles, 5S plus Quality. In keeping with the momentum for continuous improvement, in 2018, we will continue to make incremental process improvements to better serve our growing list of passenger and cargo customers.

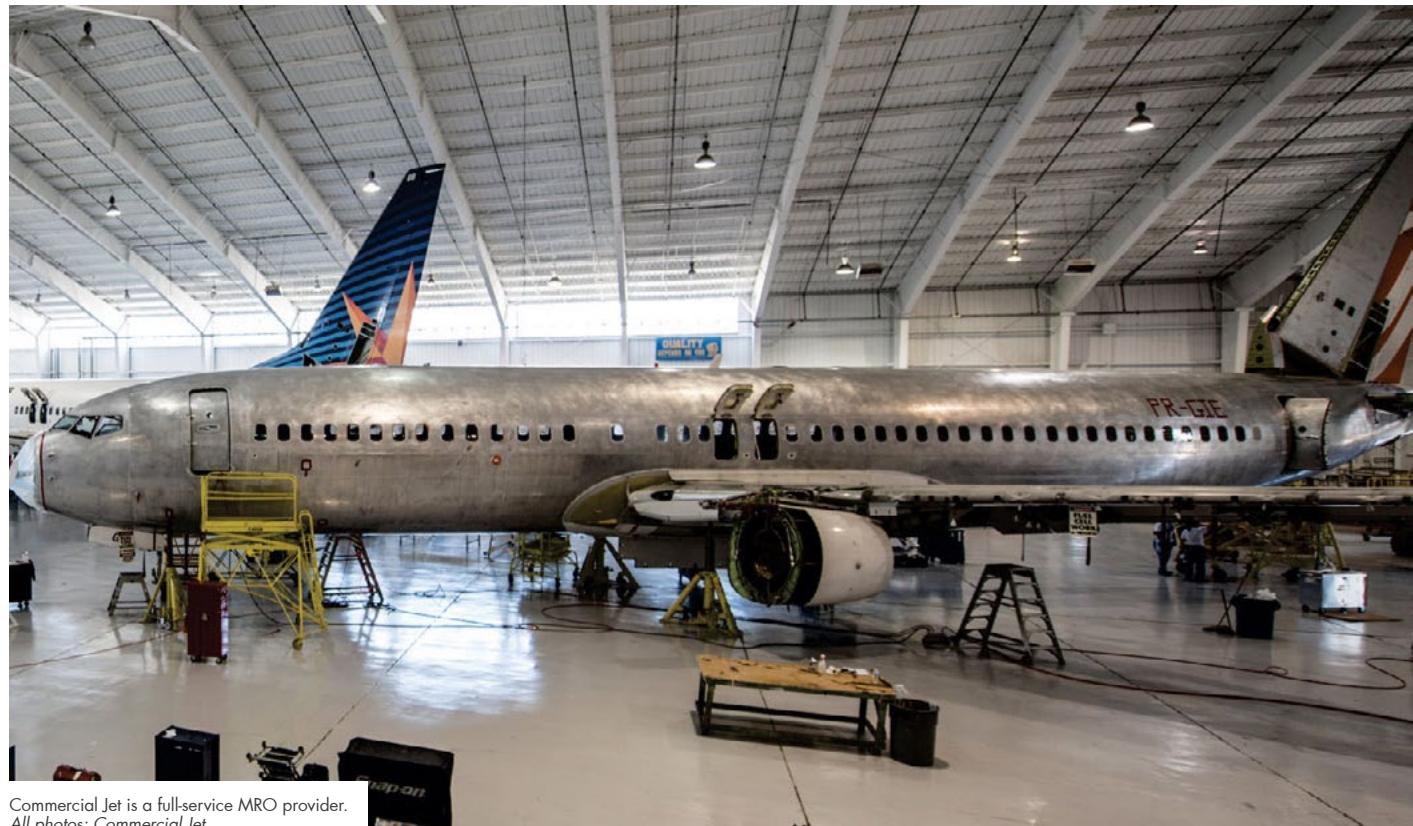
AviTrader MRO: New technologies are bringing new MRO techniques into the fray. How are you adapting to this?

Sandri: As stated above, we implemented a new maintenance management system and restructured our overall aircraft maintenance project management structure to be able to deliver consistent quality and achieve efficiency gains in our operations. Overall, airline yields have been on a downward trajectory for several decades, so we believe that



David Sandri, CEO of Commercial Jet.

continuing to focus on reducing the cost of maintenance, while at the same time increasing the quality and speed of maintenance delivery will continue to be a major determining factor for our passenger and cargo operator customers.



Commercial Jet is a full-service MRO provider.
All photos: Commercial Jet



AviTrader MRO: What kind of partnership have you developed with AEI?

Sandri: Commercial Jet is the largest Authorized AEI Conversion Center (ACC). At both our facilities we perform modification touch-labour and maintenance requirements for a broad range of AEI customers. Currently, Commercial Jet provides AEI with nine dedicated modification lines for the B737-400SF, MD-80SF series and CRJ200 SF freighter conversions. We currently have 13 aircraft in-work, undergoing various stages of modification. Commercial Jet is also proud to be modifying the AEI B737-800SF prototype freighter conversion, which will be completed and certified soon. The AEI B737-800SF will be the next generation freighter that will support the growing needs of the cargo industry for the next 20-plus years, so we see tremendous value in focusing on this platform.

AviTrader MRO: What trends are you seeing in the modifications market with respect to the used aircraft market?

Sandri: For the foreseeable future and given our existing partnership with AEI, we will continue to enhance our reputation for being a world-wide industry leading heavy structural modification center for all aircraft platforms.

While many other MRO's have transitioned to offering basic line maintenance, we believe our expertise with heavy structural modifications will sufficiently address the growing demands of not only the air freight industry, but for the passenger industry as well.

AviTrader MRO: In your view, what is the single biggest challenge facing the MRO business in the US?

Sandri: Cost reductions and process improvement efficiencies will continue to be a challenge facing the broader MRO industry. As we previously stated, the yields for all major airlines have historically demonstrated a downward trend. This combined with the introduction of many Low-Cost Carriers (LCCs) requires maintenance offerings to keep pace with operator's new business models and their internal cost challenges. Man-hour rates at independent MROs have generally remained flat for many years, yet internal labour rates are increasing, so process improvement is a vital component to consistently deliver a competitive quality, on-time maintenance product. With regards to ageing fleets, there also seems to be a rising trend in requirements through SBs and ADs. While costs are increasing as a result, prices are stagnant at best. Customers are demanding a quality

product, at a minimal cost, so we believe the best way to address this challenge is through efficiency gains.

AviTrader MRO: What's next in the pipeline at Commercial Jet?

Sandri: Commercial Jet admittedly has a healthy reputation for providing quality heavy structural modifications. As we look to 2018 and beyond, we will be focusing on fully utilising our vast experience, tooling and talent for the entire series of B737 Classic and NG, B757 and B767 aircraft. We are bringing in more scheduled and unscheduled heavy maintenance projects and working towards establishing ourselves as the provider of choice through the provision of best value for our customers' maintenance needs. Additionally, as regional jets are becoming larger in size we believe our current experience including with the Bombardier CRJ200, positions us well to offer the North American market the much-needed comprehensive maintenance solutions for the "right-sized" regional jet platform.



Frank Walschot

SR Technics has nominated **Frank Walschot** as Chief Executive Officer as of April 1, 2018, replacing Jeremy Remacha, who is leaving the company at the end of the scheduled transition period to the new shareholders. With more than 30 years' aviation industry experience in leading operational, commercial and financial functions around the world, Frank Walschot is a recognized and respected senior executive, well trusted with SR Technics' business and challenges for many years.

GA Telesis has announced the promotion of **Meghan Burgan** to Vice President of Programs and Repair Management. Ms Burgan will oversee and manage all flight hour programs, inventory leasing and repair management activities for the Component Solutions Group (CSG) within GA Telesis. Bringing two decades of aviation aftermarket experience with her, Ms Burgan joined GA Telesis in 2015 as Vice President of Inventory & Asset Management where she was responsible for the asset management of one of the world's largest independent rotatable inventories.



Tomas Sidlauskas

Starting March 1, AviaAM Financial Leasing China, Zhengzhou (China) based aircraft leasing and trading company, will be led by newly appointed CEO **Tomas Sidlauskas**. Having joined the Group in 2012 as a Senior Project Manager, Sidlauskas quickly rose to the VP Sales and joined the Board of Directors in 2014. Over the years at AviaAM Leasing, he has conducted many successful and valuable aircraft financing, trading and sale projects, involving major financial institutions, including but not limited to China Merchants Bank, China Development Bank, Skyco, PK AirFinance, as well as aircraft leasing specialists Aergo Capital, GTLK Europe and others.

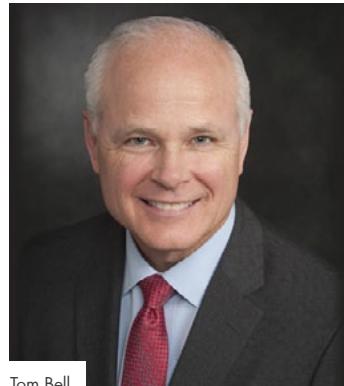
Air Transport Services Group has hired **Mike Berger** as Chief Commercial Officer. Berger will assume responsibility for the sales and

marketing strategy and execution for the ATSG family of companies, and will also be President of Airborne Global Solutions, ATSG's commercial and consulting enterprise responsible for selling the bundled solutions of the ATSG family of companies. Berger will report to ATSG Chief Operating Officer **Rich Corrado**. His most recent role prior to joining ATSG was Chief Commercial Officer for Dicom Transportation Group of Canada. Prior to that he held senior management positions in major air express companies including TNT Europe, DHL, and Airborne Express.

CFM International announced that **Sébastien Imbourg** has been named executive vice president, replacing **François Bastin**. Bastin, who had served in the role since February 2015, has been appointed executive vice president of Commercial Engine Programs for Safran Aircraft Engines. As part of the CFM Executive Team, Imbourg is responsible for overseeing programs carried out by the CFM joint venture. Along with his counterpart at GE, **Allen Paxson**, he will also serve as the primary interface between the two companies. Within Safran Aircraft Engines, Imbourg is general manager of the CFM project department.

Morten Beyer & Agnew (mba), a consulting leader in the aviation industry, has promoted **Lindsey Webster** from Director to Vice President of Asset Valuations. In this role, Ms. Webster will lead a team of ISTAT Certified Appraisers in valuing aircraft, spare parts, engines and helicopters. Ms. Webster will also perform industry research and economic analysis, model value trends, and forecast future asset values and economic lives. Ms. Webster will be responsible for the management of mba's European office in addition to heading the US asset valuations team. Ms. Webster is an ISTAT Certified Appraiser with a Bachelor of Science degree in Finance and Insurance from Northeastern University. Prior to joining mba, Ms. Webster worked in Fixed Income at Lehman Brothers and in Corporate Sales with the Ritz-Carlton.

Rolls-Royce has appointed **Tom Bell** as President and CEO of Rolls-Royce North America, a post he will hold alongside his current position as President – Defence. The appointment follows the decision of **Marion Blakey** to retire at the end of June after serving a three-year term.



Tom Bell

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