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## Paris takes off

Company profile  
Werner Aero

Technicians tool up  
Predictive maintenance

MRO News  
from around the world

People on the Move  
latest appointments



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**MRO**

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**Opinion**

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**Paris, some shelter please!**

With 2,300 international exhibitors, 150,000 trade visitors, 30 national pavilions and almost 300 official delegations, the Paris Air Show is still the biggest show of its kind and a must-attend event for all professionals working in the aeronautics and space sector.

So it was a shame to see the shambolic way the check-in process was organised. For obvious reasons, security checks were more pronounced at this year's show especially for visitors carrying laptops and other equipment and this was inevitably a large number of people. The long queues led to hundreds of visitors exposed to scorching temperatures while waiting for their equipment to be scanned leading to several people feeling unwell.

Paris in June, is either rainy or hot and organisers should have anticipated long queues amid extra security and temporary shelters should have been put in place along the path of the queueing areas. Lessons to learn for next time, hopefully.

Check-in chaos aside, and once inside, the traditional aircraft OEMs, space adventurers, software developers, and futuristic concepts were all battling for attention at the show. And speaking of future concepts, of particular interest to me was the unveiling of the completed design of the XB-1 Supersonic Demonstrator, the subscale prototype of the Boom supersonic passenger airliner. When it flies next year, the XB-1 will be the world's fastest civil aircraft, and it will demonstrate in flight the key technologies for mainstream supersonic travel. It remains to be seen if the project will ever take off but its still one to watch!

In this Paris special edition, our cover story shines the spotlight on some of the key collaborations within the supply chain announced at the show and how the service and support business is growing at the OEMs. Enjoy the read!

Keith Mwanalushi  
Editor



The 737 MAX 9 took to the skies in Paris  
Photo: ASDS

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# **LIEBHERR**



Jet Aviation-Boston Bedford opening  
Photo: Jet Aviation

### Jet Aviation opens new FBO at Boston/Bedford

Jet Aviation has reported the opening of a new hangar and Fixed Base Operation (FBO) terminal at Hanscom Field in Boston/Bedford on June 8. "With these new facilities and added capabilities at Boston/Bedford, Jet Aviation is truly taking a big step into the future of premium service for our customers and the community here," said Jet Aviation President, Rob Smith, adding that: "The new 'state-of-the-art' facilities are designed and built to improve safety and efficiency, and are also more protective of the environment. We are working with the United States Green Building Council to gain Leadership in Energy and Environmental Design (LEED) certification." Smith noted that the new 40,000 ft<sup>2</sup> hangar is capable of handling aircraft up to the Gulfstream G650 and the Global 7000. The two-story FBO terminal has 13,000 ft<sup>2</sup> dedicated to customer service and another 16,000 ft<sup>2</sup> of office and shop space. The 92,000 ft<sup>2</sup> ramp and apron have been upgraded, while a new entrance roadway, parking, and utilities connecting to the FBO have been installed.

### Daher applies expertise in thermoplastic composites with production of aircraft wing rib for flight testing

Daher has designed and built its first-ever thermoplastic composite wing rib, applying the company's expertise with this technology for increasingly complex airframe components produced – offering aircraft manufacturers lightweight solutions that are an alternative, or complementary, to me-

tallic and more traditional thermoset composite parts. The thermoplastic composite rib, to be displayed for the first time at this month's Paris Air Show, is sized for a business jet and will be incorporated in a test wing box constructed during 2018 as part of the Composite Aircraft of the Future platform led by the French Civil Aviation Research Council (CORAC). Daher has focused on innovation since the company's inception and continues to enhance its expertise in the design, industrialization and manufacture of thermoplastic parts for the aerospace industry. This includes the filing of patents and the development of design and technology capabilities that allow it to create complex parts and offer different materials that can reduce production costs. In addition to their lighter weight, parts made from thermoplastic composites are more resilient and provide recycling potential not possible with other materials.

### Brazil approves AerSafe for Boeing 737 CL series aircraft to comply with Fuel Tank Flammability Reduction rule

AerSale has reported that the National Civil Aviation Agency of Brazil (ANAC) has approved a Supplemental Type Certificate (STC) for installation of its AerSafe system on the Boeing 737 CL series aircraft (ST03589NY) in compliance with the Fuel Tank Flammability Reduction (FTFR) rule. AerSale's STCs for the Boeing 737 CL and NG series (ST02980NY) have already been approved by the Federal Aviation Administration (FAA). As a fuel tank ignition mitigation means exclusively developed by AerSale, AerSafe comes as a com-

plete prefabricated kit that can be installed anywhere around the world. Boeing 737 kits are immediately available to assist operators in meeting the December 26, 2017 deadline established by the FAA and ANAC. FAA approval of AerSale's STC for the Boeing 767 series aircraft is expected in the coming weeks, while Boeing 757 and Airbus 320 series STCs are anticipated for approval later this year.

### GA Telesis expands iGEAR program coverage; signs agreement with Trade Air

GA Telesis (GAT) reported that TRADE AIR, d.o.o. has entered into an agreement to receive rotatable component flight-hour support through GAT's Intelligent Global Engine and Airframe Replenishment (iGEAR) program. Launched in 2016 and managed by GAT's Component Solutions Group, iGEAR programs provide airlines and operators with access to a global distribution network for rotatable inventory and includes 24/7/365 Live AOG support. The agreement with Trade Air will initially cover one A320 aircraft which will be supported via GAT's UK-based customer service and distribution centers. In addition to rotatable inventory support, Trade Air will also have the ability to participate in fully integrated nacelle and flight control exchange programs through GAT's Strategic Nacelle Access Pool and Aircraft Flight Control Surface Support programs, respectively.

### AEI receives order for two additional MD-80SF series conversions for AERONAVES T.S.M.

Aeronautical Engineers (AEI) has signed a contract to provide Mexico-based Aeronaves T.S.M (TSM) with two additional MD-83SF freighter conversions. The first MD-83 aircraft (MSN 53288) will commence modification at the beginning of June, and will be re-delivered to TSM in September 2017. Commercial Jet's Miami, Florida facility will perform the modification and maintenance requirements on the first aircraft. The second MD-83 (MSN 53289) will commence modification on June 26 and will be re-delivered to TSM in October 2017. Commercial Jet's Dothan, Alabama facility will perform the modification and maintenance requirements on the second aircraft. TSM represents the largest overall operator of AEI's MD-80SF series converted freighters. Including this order, TSM will operate a total of seven AEI MD-80SF series freighters.



Bedek Conversion B767-300  
Photo: Bedek Aviation Group

### Bedek Aviation Group to establish facility in Mexico

The Bedek Aviation Group of Israel Aerospace Industries will open an aircraft conversion site in Mexico City for conversion of Boeing 767-300s into freighters, to be run by Mexicana MRO Services as Bedek's sub-contractor. The first aircraft for conversion is expected to be inducted by the end of June. Dozens of Mexicana employees, including structural engineers, electricians, mechanics and engineers employed in maintenance of aircraft of the B767-300 have undergone training at IAI. The Bedek Aviation Group has a reputation as one of the largest, most efficient centers for conversion of, B737, MD-11, B747, B757 and B767 aircraft from passenger to freighter configuration, as well as for the range of supplementary services it offers its customers. Bedek's modern facilities provide a full range of maintenance and overhaul services for an array of wide-body and narrow-body aircraft. Bedek's customers include aircraft leasing companies, airlines, aircraft manufacturers, and air cargo companies. In light of market forecasts of continued growth in the demand for conversion into freighters, IAI estimates that the collaboration with Mexicana will yield projects worth tens of millions of dollars in the coming years. As owners of the supplementary type certificate for the conversion, IAI will retain engineering authority and overall responsibility for the conversions performed at the conversion site.

### PPG intelligent window systems undergoing flight testing for type certificates

PPG is flight testing WINLOGIC intelligent window systems to receive amended and supplemental type certificates from the Federal Aviation Administration (FAA). The patented PPG cockpit window systems provide protection from an emerging electrical fault that may result in a failure of the window. The window can subsequently be replaced and not cause a major flight interruption. WinLogic intelligent window systems by PPG have already received Technical Standard Order authorization from the FAA to TSO-C178 and European Technical Standard Order authorization by the European Aviation Safety Agency (EASA) to ETSO-C178PPG is launching its new branding for WinLogic intelligent window systems and displaying an example at the Paris Air Show.

### Safran Aircraft Engines and AFI KLM E&M unveil new joint venture - Airfoils Advanced Solutions

Safran Aircraft Engines and AFI KLM E&M have started the construction phase of a new engine component repair facility, Airfoils Advanced Solutions, a year after the joint venture was first announced. Located in the Sars-et-Rosières business park in north of France, the facility, when completed in 2018, should

employ between 200 and 250 staff. Safran Aircraft Engines holds a 51% stake and AIR FRANCE KLM 49% and who, combined, will invest in excess of €20m in the business. Airfoils Advanced Solutions will be responsible for repairing high-pressure compressor blades and variable stator vanes, focusing on the CFM International CFM56 engines powering the Airbus A320 and Boeing 737, GE's GE90 engines powering the Boeing 777, and the Engine Alliance GP7200 for the Airbus A380 super-jumbo.

The new premises will cover approaching 15,000 m<sup>2</sup> (162,000 ft<sup>2</sup>). Airfoils Advanced Solutions will also be involved in repair solutions development, including cutting-edge repairs for fleets serviced by parent companies Safran Aircraft Engines and AFI KLM E&M.

"The founding of this joint venture is a major step forward in our repair capabilities for the high-pressure sections of engines serviced by Safran Aircraft Engines and AFI KLM E&M. It's also a tremendous opportunity for Safran Aircraft Engines to strengthen our position as a major supplier of engine MRO services. We are also very proud to see that this strategic business line, requiring highly qualified personnel, will be located in our local communities," said François Planaud, Executive Vice President, Services & MRO, Safran Aircraft Engines.

### Airbus Helicopters breaks ground on first helicopter assembly line in China

Airbus Helicopters is moving forward with the expansion of its global footprint and its strategic partnership with China, as construction is now underway for its H135 Final Assembly Line (FAL) – the first of its kind not only for Airbus Helicopters, but also for the Western helicopter industry in China. The FAL will be located in Qingdao, Shandong Province, eastern China, and construction is expected to be completed by 2018. A framework agreement signed in June 2016 calls for 100 H135s to be assembled over the next 10 years, and the first aircraft roll-out from Qingdao is planned for mid-2019. The FAL will have a total annual capacity of 18 H135 helicopters, which could be extended for future growth. The new facility, located in Jimo Provincial Hi-Tech Industrial Development Zone, will be jointly operated by Airbus Helicopters and Qingdao United General Aviation Company Limited (UGAC), a joint venture between China Aviation Supplies Holding Company (CAS) and Qingdao United General Aviation Industrial Development Company Limited (UGA). Following the joint venture agreement signed in April of this year, Airbus Helicopters holds a majority share of 51%.



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GAMECO'S first A380 6-year check in China  
Photo: GAMECO

### GAMECO accomplishes first A380 6-year check in China

On Jun 2, China Southern Airlines (CSA) B-6016, the first A380 with a 6-Year check, was redelivered for service with a bright new look for the cabin and airframe after heavy maintenance and repainting, also symbolizing GAMECO's milestone of the first A380 6-Year Check in China. In 2011, CSA started introducing the A380 to its fleet. After 6-years of operation, CSA's five A380s will successively move forward to a full-scale "physical check". On Mar 1, 2017, the first domestic A380 3C check (6-year check) began in the GAMECO Hangar. After a 75-day heavy check and 19 days repainting, the aircraft was redelivered on Jun 2, 2017. The 6-year check covers a wide scope of tasks, including more than 1250 job cards and over 120 EO MODs, with an average 90 mechanics working on the aircraft every day, and even up to 140 me-

chanics for peak hours. Aircraft parts on the upper floor and lower floor of the cabin were all removed for refurbishment, including 18 galleys, 14 lavatories, 506 seats, and thousands of accessories being painted, polished or replaced. The whole cabin is now ready to welcome passengers with a new look.

### KLM UK Engineering adds CASA Part 145 approval to maintain Australian registered aircraft

KLM UK Engineering has added CASA Part 145 approval to its portfolio from June 2017. A European leader in the regional jets & narrow-body aircraft market, and having internationally acknowledged expertise on the Embraer 170/190, BAe146/Avro RJ, Fokker 70/100, Boeing 737 & Airbus A320 Family, KLM UK Engineering has extended its services

to include CASA Part 145 approval to meet the growing demands from its customer base. This latest offering complements the existing portfolio at KLM UK Engineering's base maintenance facility, where it can maintain five lines of heavy maintenance, provide onsite workshop support, and operate a technical training college delivering Part 147.

### Aero Norway granted Part-145 Approved Maintenance Organization Certificate by DGCA Indonesia

Norway-based engine MRO facility Aero Norway AS has been granted Part-145 Approved Maintenance Organization Certificate by the Directorate General of Civil Aviation (DGCA) Indonesia. The engine MRO centre is now multi-release FAA, EASA, TCCA, CAAC, GCAA and DGCA Indonesia certified. The certification covers the full spectrum of services offered by CFM-authorized repair station Aero Norway across all three engine models: CFM56-3, CFM56-5B and CFM56-7B.

### West Star Aviation's new dedicated landing gear facility officially open for business

West Star Aviation has reported that its new dedicated landing gear facility, located in Grand Junction, CO is now officially open for business. West Star Aviation celebrated the grand opening with an open house at the facility on May 26, 2017. The newly redesigned 20,000 ft<sup>2</sup>. facility was acquired by West Star in February of 2017 and will allow West Star to continue supporting Challenger, Hawker, and Embraer Phenom landing gear overhaul and repair.

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A350-900, MSN145, Air Mauritius winglet  
Photo: Airbus

### First Air Mauritius A350 XWB takes shape in Airbus' Final Assembly Line

Assembly of the first A350 XWB for Air Mauritius is advancing well at Airbus' Final Assembly Line (FAL) in Toulouse, France. The wing-fuselage junction, the installation of the tailplane and also the tailcone have been completed. The aircraft is in the next assembly station for structural completion, such as the installation of winglets, ground testing of mechanical, electrical and avionics systems. Next steps will, in particular, include cabin completion, engine installation, painting and flight tests. This will lead to the delivery of the first A350-900 to Air Mauritius, scheduled in Q4 2017. Air Mauritius will acquire a total of six A350-900 twin engine wide-bodies, comprising four directly purchased from Airbus and two on lease from AerCap. At entry into service, the A350 XWB will be deployed mainly on the carrier's long-haul Mauritius-Paris route. Air Mauritius currently operates a fleet of 13 aircraft, of which ten are Airbus aircraft, including six A340-300s, two A330-200s and two A319s on regional and long-haul service.

### Rolls-Royce opens new Airline Aircraft Availability Centre

Combining the latest in digital data management and technology innovation, Rolls-Royce has opened its new Airline Aircraft Availability Centre as part of its vision that every aircraft the company's engines power departs and arrives consistently on time and does so in as efficient manner as possible. In an industry where a one percent fuel saving can reduce fuel costs by approximately US\$250,000 for an aircraft over the period of a year, and an out-of-service aircraft can cost a carrier thousands of dollars per day, efficiency is critical.

The Airline Aircraft Availability Centre, which is based in Derby, U.K., will use industry-leading data analytics to plan engine operations and maintenance. Rolls-Royce currently monitors thousands of engines worldwide, ensuring the aircraft are available to service whenever needed and all parts and people are made available to ensure that happens efficiently.

The Airline Aircraft Availability Centre will take the data received and transform it in terms of scope and scale, thus enabling better service decisions to be made. The new Centre will also place Rolls-Royce in a position to turn the company's IntelligentEngine concept into a reality, thus improving airline economics in terms of aircraft availability and fuel efficiency, supported by new services technologies and techniques.

According to Tom Palmer, Rolls-Royce Senior Vice President – Services, Civil Aerospace, "We are entering a new era of digital connectivity and new services technology which allows us to greatly expand the type of services we can offer, with aircraft availability a key objective. As the industry services innovator, our Airline Aircraft Availability Centre incorporates the advances of today and tomorrow to support our vision of every Rolls-Royce powered aircraft taking off and landing on time, every time."

### Werner Aero Services acquires second Embraer E-190

Werner Aero Services has acquired another Embraer E-190, MSN403, as part of its strategic plan to grow its E-Jets business. The company plans to continue investing in E-Jet assets as well as expand its offerings which currently include: engines, nacelles, APUs, component support, pooling access, and repair management. "We are always looking for additional acquisitions to support our growth plans within the regional market.

Werner Aero Services is committed to the E-Jets market and we look forward to further expanding our Embraer business to become a leading provider of Embraer aircraft services to airlines around the globe," said Mike Cazaz, CEO of Werner Aero Services.

### PPG announces revolutionary secondary fuel vapor barrier for transport aircraft

A new sprayable secondary fuel vapor barrier is in development by PPG that uses ultraviolet (UV) radiation to cure in seconds, instead of 24 hours or more, and can greatly reduce production cycle times for commercial aircraft manufacturers and subcontractors. The revolutionary PPG eco-friendly sealant uses PERMAPOL polymer technology and is expected to be commercialized in early 2018. Aviation certification authorities require application of secondary fuel vapor barriers to the exterior of center wing box fuel tanks for all transport aircraft having them. These sealants are elastomeric coatings that provide a redundant level of sealing should the internal primary integral fuel tank seals ever be compromised. They are intended to protect, or contain, any vapor and fuel from leaking into the cargo bay and contacting electrical cables, which could have catastrophic consequences.

Bill Keller, PPG global market segment manager for aerospace sealants, said the new PPG secondary fuel vapor barrier offers the greatly reduced production cycle times required to build planes faster and with greater efficiency. "I have met with aircraft manufacturers from around the world who said having a rapid-curing, easy-to-use product was an absolute priority," Keller said. "A UV-cured, sprayable secondary fuel vapor barrier sealant based on Permapol technology by PPG will be a perfect fit for these customers."

### Boeing appoints Direct Maintenance GoldCare supplier

Direct Maintenance has been selected by Boeing as its latest GoldCare supplier, in the field of aircraft line maintenance. GoldCare is a unique program set up by Boeing, in order to provide sophisticated and tailored after-market support to individual airlines. By providing high-value, low-risk and efficient fleet maintenance operations, Boeing customers using GoldCare are offered a competitive advantage in the marketplace. Boeing has substantially grown its GoldCare subscriptions since the recent years, providing support for 60 customers and more than 2,200 airplanes at this moment in time.



Contract signing between Liebherr-Aerospace and Turkish Technic  
Photo: Liebherr-Aerospace

### Liebherr-Aerospace renews repair and services contract with Turkish Technic

Liebherr-Aerospace and Turkish Technic, the maintenance, repair and overhaul center of Turkish Airlines, have recently renewed their repair and services agreement for the Airbus fleet of A320/A330/A340s maintained by Turkish Technic. The repair and services contract covers the complete Airbus fleet of Turkish Airlines and third parties that are maintained by Turkish Technic. The support services will be performed by Liebherr-Aerospace's service stations in Lindenberg (Germany) - Original Equipment Manufacturer (OEM) and center of excellence for landing gear and flight control systems, and in Toulouse (France) - OEM and center of excellence for air management systems.

### AJW Technique signs component MRO contract with Tunisair Technics

AJW Technique has signed component MRO contract with Tunisair Technics for the support of their mixed Airbus and Boeing fleet. The multi-component repair agreement with one of North Africa's leading airlines covers over 300 part numbers and ensures that high quality repairs will enable the airline to continue to fly safely and on time. AJW Technique, AJW's MRO facility based in Montreal, will continuously analyze component and sub-component reliability data against the specific flight characteristics of the operator to deliver the optimum support program throughout the term.

### Lufthansa Technik extends component support for Wamos Air

Lufthansa Technik AG and the Spanish charter airline Wamos Air have extended their ex-

isting cooperation for a further two years. Lufthansa Technik has supplied components for Wamos Air's fleet of Boeing 747-400s since 2003 as part of Total Component Support (TCS). The newly extended contract includes warehousing and the pooling of spare parts at Wamos Air's hub in Madrid, in addition to component repairs and overhauls. Under a five-year TCS contract concluded last year, the carrier's two Airbus A330s are also being looked after by Lufthansa Technik. Now that a third Airbus A330 has been added to the fleet, the scope of the contract and the spectrum of the components (part numbers) have been extended significantly.

### OGMA strengthens commitment to aerostructures by acquiring new machinery

Improving processes, ensuring greater efficiency and increasing the company's competitiveness are the main objectives underneath OGMA's investment of around €1.00 million (US\$1.12 million) regarding the renovation of its Aerostructures Business machine park. This investment will continue over the next two years, aiming at more automated production processes aligned with the best practices in the aviation industry. Among the investments planned for this year are the acquisition of two more CNC HSM machines with 950mm and 3600mm, respectively, and the renovation of the Trumatic sheet metal cutting machine. This equipment upgrade will contribute to OGMA's operational capability in different projects, including the manufacture of several components for the E-Jet E2 family, Embraer's second generation of commercial aircraft. OGMA facilities in Alverca will manufacture components for all of the three E2 aircraft models, namely wing boxes (E175-E2

and E190/195-E2), horizontal stabilizers and flaps (E175-E2), which includes machined components, sheet metal and composites.

### Bombardier offers hydraulic maintenance and repair services as part of expanding MRO capabilities

Bombardier Aerostructures and Engineering Services has expanded its MRO capabilities in Belfast, UK, to include hydraulic component maintenance and repair. The MRO operation, based in Northern Ireland, now offers full inspection, testing, repair and overhaul of individual hydraulic components and hydraulic assemblies for Bombardier, Airbus and Boeing aircraft. Bombardier's MRO services in Belfast already offer an extensive range of aftermarket services. These include component repair and overhaul of engine nacelles, flight control surfaces, landing gear and electrical harnessing, as well as technical support, modification and repair development, inspection and testing, parts exchange or lease, and mobile repair assistance.

### Pattonair launches enhanced MRO Services portfolio for engine market

Global aerospace and defense supply chain provider Pattonair, is launching a new and enhanced MRO Services portfolio at the global MRO procurement expo, AP&M in London, May 31 to June 1. The portfolio introduces innovations, such as Zero Waste and Zero-Lead-Time solutions via 'Smart Kitting', 'Automated Inventory' and the 'Warehouse in a Box', designed to meet the changing needs of customers in the growing Engine MRO and Aftermarket sectors. Pattonair's enhanced MRO Services have been designed from the ground up by industry experts to deliver customer value through optimized, scalable and, most importantly, sustainable services. They cover all MRO aspects of aerospace, marine and industrial gas turbine power plants as well as aerospace wheels and brakes and landing gear. "We are seeing an increased focus from OEM's and MRO's, operators and lessors, on retaining product on-wing for longer periods and reducing the total cost of overhaul; at the same time, there is an increasing reliance on the use of big data and engine health monitoring to optimize on-wing longevity and shop visit planning profiles", said Pattonair's MRO Services Director, Jim Smith, who led the re-design and who joined Pattonair from Rolls-Royce, bringing 20 years' OEM and MRO experience.

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Pascal Jallier VP VIP Programmes at Sabena technics and Benoit Defforge President ACJ  
Photo: Airbus

### Sabena technics joins ACJ Service Centre network

Sabena technics' maintenance, repair and overhaul (MRO) facilities in Bordeaux are joining the ACJ Service Centre network, adding to the choice of Airbus-approved facilities around the world for ACJ customers and operators. The expanded network comprises companies that are owned or controlled by Airbus, as well as independent ones that it has approved. Its capabilities include line and heavy maintenance, cabin-refurbishing, and cabin and system upgrades. The ACJ Service Centre network now comprises Comlux America in Indianapolis, HAECO Private Jet Solutions in Xiamen, Jet Aviation in Basle and Dubai, Sabena technics in Bordeaux, Sepang Aircraft Engineering (SAE) in Kuala Lumpur, and ST Aerospace in Singapore. It will grow to include others over time. The goal is to support ACJ customers around the world by offering them a high-quality network of experienced companies.

### Magnetic MRO to become Boeing GoldCare partner

Magnetic MRO, the Estonian-headquartered integrated MRO services provider, has signed a multiyear agreement with Boeing in respect of GoldCare maintenance services. GoldCare is Boeing's lifecycle solution providing all engineering, maintenance, materials, information and associated maintenance planning functions. As a Line & Base Maintenance GoldCare Partner, Magnetic MRO will be benefiting from bundled-product package solutions covering all the Boeing aircraft types in its facilities and outstations. "We are very proud and excited to be endorsed as a part-

ner by one of the world's leading airplane designer and manufacturer. Our relationship with Boeing has evolved over the last two decades due to increasing number of satisfied customers and the variety of their fleet," said Risto Mäeots, CEO of Magnetic MRO.

### P&WC launches innovative oil analysis solution on PW306A engines

Pratt & Whitney Canada's ground-breaking Oil Analysis Technology has made its debut at EBACE 2017, as a commercially available solution on PW306A engine-powered business aviation aircraft. P&WC's Oil Analysis Solution will provide an innovative oil system prognosis capability, also playing a role in the company's new proactive help desk, which was also launched at EBACE, starting with the PW300 engine family. The Oil Analysis Solution will enable P&WC to identify potential maintenance events at an early stage so they can be addressed proactively or avoided entirely. Customers will receive personalized reports and maintenance recommendations based on oil sample findings, enabling optimized shop-visit planning. What's more, PW306A engine customers who enrol in an Eagle Service Plan (ESP) pay-per-hour program will benefit from the service at no additional cost for the rest of the year. The solution will be part of the standard ESP program for PW306A engines starting in 2018.

P&WC has developed and optimized an oil analysis program by working closely with operators, FBOs and aircraft OEMs. Many of them have taken part in an ongoing customer trials as early adopters to help diversify the oil sample base and calibrate the technology across a variety of P&WC engine models. To date, nearly 4,000 oil samples have been re-

ceived across all engine families. With trials continuing on other engine models, the solution will keep evolving as a knowledge base continues to grow.

### PurePower PW800 Engine accelerating rapidly towards Entry into Service

Pratt & Whitney Canada (P&WC) revealed that its PurePower PW800 engine is completing preparations for Entry into Service (EIS) by the end of this year, ahead of schedule after achieving a number of recent milestones. "The PurePower PW800 has demonstrated that it's technology-ready through thousands of hours of rigorous ground and flight testing, during which it has surpassed expectations," said Scott McElvaine, Vice President, Marketing & Customer Service, PurePower PW800 engines. Testing on the engine has reached the milestone of more than 13,000 hours, including over 6,000 hours on P&WC's Flying Test Bed and on Gulfstream's G500 and G600 flight test aircraft.

It has been a busy few months for the new engine: it powered the first flight of Gulfstream's G600 in December, 2016, received FAA certification on February 14, 2017, and certification from the EASA is expected soon. This follows a number of entry into service-related activities, including the completion of initial technical publications for the engine, the commencement of engine maintenance training, and the readying of P&WC's industry-leading global support network – including its parts distribution centers – now fully equipped to deliver skilled, dedicated assistance to operators around the world.

### Werner Aero Services acquires an Embraer E-190

Werner Aero Services has acquired an Embraer E-190, MSN367. This jet will be used to support the company's recent commitment to expand its E-Jets' asset management programs. Werner Aero Services has previously announced the expansion of its E-Jets business to include pooling access, repair management, engine leasing, as well as nacelle and spares support. The company plans to further increase its investment in the regional market in the near future. "The acquisition of this E-Jet is in line with our strategy to propel Werner Aero Services' regional business and exemplifies our commitment to the Embraer E-Jet family. I am happy to say that we now offer E-Jets operators complete logistical solutions combined with our outstanding customer support. The E-Jets business is vital to our company's growth and we intend to continually invest in this product." said Mike Cazaz, CEO of Werner Aero Services.



Inauguration of the new facility of Lufthansa Technik Middle East  
Photo: LTME

### Lufthansa Technik Middle East new facility is fully operational at Dubai South

The new facility of Lufthansa Technik Middle East (LTME) has become fully operational in the Aviation District at Dubai South. The new site was officially inaugurated on Tuesday, May 16, 2017. Previously, the new facility was successfully audited by the Federal Aviation Office of Germany and different customers from the region. In the last few weeks, different parts have already been repaired on-site, e.g. thrust reversers, inlet cowls and radomes. As a result of joint discussions with customers, LTME's capabilities are being increased for further components. LTME currently offers Airframe Related Component (ARC) support, AOG (Aircraft-On-Ground) support, landing gear and engine and engine wash services, and a local material support desk. The material pool has been extended and now covers parts and components for the Boeing 787, 777 and the Airbus A320 and A350 aircraft. Further evaluation of additional capabilities is ongoing depending on other customer requirements. The current LTME site at Dubai International Airport will be kept operational.

### West Star Aviation receives FAA Part 145 repair station certification for Denver satellite location

West Star Aviation has received an FAA Part 145 repair station certification for its Denver satellite location at Centennial Airport (APA). West Star Aviation's Denver location opened in 2014 providing aircraft maintenance and support for Denver Metropolitan Airports. As a satellite location, APA offers avionics repairs, maintenance troubleshooting and other services. If necessary, the West Star Denver loca-

tion will obtain ferry permits so customers can utilize one of West Star Aviation's three full-service MRO facilities located in East Alton, IL, Grand Junction, CO, and Chattanooga, TN.

### PPG and Vision Systems to develop aircraft window shading applications

PPG and Vision Systems have reached a commercial agreement to work together on developing new applications utilizing Vision Systems' electronically dimmable window shading solutions for aircraft. The agreement provides a framework for PPG and Vision Systems to pursue opportunities in commercial, regional, military and general aviation applications that capitalize on each company's expertise. Both companies already have considerable experience supplying electronically dimmable window shading systems. PPG has supplied electrochromic window shading systems for commercial aircraft and ground vehicles since 2007. Vision Systems, based near Lyon, France, is an established supplier of aircraft shading systems and associated electronics.

### Acro Aircraft Seating supply A320 Linefit to Allegiant Air

Acro Aircraft Seating has reported that following the successful completion of a 'Series 3 Superlight ST' slimline Economy Class seat linefit development programme for Allegiant Air, shipset delivery has commenced to Hamburg, Germany. The contract consists of twelve Airbus A320 200's; ten are scheduled for delivery during 2017 and the remaining two in 2018. Since 2013, Acro have retrofit-

ted over forty A319s/A320s for Allegiant Air, with a further four on order for 2017. This announcement follows an agreement with Airbus during January 2017, for Acro products to be included in their BFE (Buyer Furnished Equipment) Catalog.

### Vector Aerospace becomes authorized Safran Helicopter Engines Arriel 2D Repair Centre

Vector Aerospace has received authorization from Safran Helicopter Engines to support the latest Arriel 2D model as a certified Repair Centre. This new approval, which extends Vector's service capabilities on the Airbus Helicopters H125 and H130 platforms, continues Vector's long-running support of the popular Arriel family of turboshafts. Vector worked closely with Safran to establish its new capability on the Arriel 2D, putting the necessary tooling and training in place to support this latest variant of the turboshaft. Vector has been supporting the Arriel 1 since 1994, and the Arriel 2 since 2010, having to date delivered over 3,275 Arriel 1 engines and over 450 Arriel 2 powerplants back to operators.

### Strong growth for Aerostar's commercial aviation MRO business prompts expansion plans

Romanian aerospace company Aerostar S.A. is demonstrating continued strong growth in its commercial aircraft MRO business and is planning a further expansion to meet customer demand. The company is in the final stages of negotiating with the airport authorities at Iasi in northern Romania to build a new 4-bay MRO hangar for Airbus A320 family and Boeing 737 Classic and New Generation overhauls and anticipates this new facility will open for business in the summer of 2019. The new facility is 130km north of Aerostar's exiting business operations at Bacau. Since diversifying into commercial aviation MRO activities nearly 13 years ago, Aerostar has steadily built up a strong and growing customer base from airlines in Europe, the Middle East, and Africa. During 2016, a total of 80 aircraft completed 'C' and 'D' Checks at Bacau. Since the company moved into commercial aviation MRO activities, around 500 aircraft from approximately 30 airlines have been overhauled at Bacau. Airlines such as Royal Air Maroc and Pegasus Airlines are also among current customers who have contracted maintenance services from Aerostar. Aerostar's aim is to develop, in addition to the current yearly maintenance contracts, mid- and long-term framework agreements.



Studio F. A. Porsche's vision for CHAIR  
Photo: Studio F.A. Porsche

### INAIRVATION presents innovative CHAIR concept design by Studio F. A. Porsche

With the presentation of a design study around an aircraft seat based on INAIRVATION's platform CHAIR, the design studio from Zell am See in Austria underlines its ambitions to expand its activities towards VIP aircraft interior design. It is a streamlined, elegant and timeless design that was revealed to the public at the European Business Aviation Convention and Exhibition (EBACE) in Geneva on May 22. Studio F. A. Porsche had followed INAIRVATION's call for designs to promote its innovative aircraft seating concept CHAIR and delivered not only that, but drafted a complete cabin design around it. The seat design hints at Studio F. A. Porsche's automotive roots and combines timeless elegance with structural clarity. In keeping with CHAIR's adaptability, its modular construction allows various application areas without sacrificing the overall design idea. The reimagined Gulfstream G550 cabin, which reflects the Studio F. A. Porsche philosophy, was conceived as a visually light and utterly forward-thinking, flowingly connected space for work, meetings and relaxation, with an emphasis on modern materials such as titanium and carbon fiber.

### Air Serbia to retrofit narrow-body Airbus fleet with Recaro seats

Air Serbia has started to retrofit its narrow-body Airbus fleet with the Recaro BL3520 seats. In total, ten Airbus A319 and A320 aircraft will be reconfigured with the award-winning product as part of a business adjustment to strengthen the airline's European network. The slimmer seats are lightweight and designed to take less space, enabling Air Serbia to install additional rows of seats, while improving the overall living space and comfort for guests. With the cabin refurbishment, seat capacity

on the A319 aircraft will increase from 128 to 144 seats, and from 155 to 174 seats on the A320s, growing by more than 12% in total across the narrow-body fleet. The new seats will be installed in both Business and Economy classes and the first A319 aircraft, registered YU-APJ, is currently being retrofitted.

### Bombardier inaugurates new service center at London Biggin Hill Airport

Bombardier Business Aircraft has announced the grand opening of its new service center located at London Biggin Hill Airport, UK. With an installed base of more than 600 Bombardier business jets in Europe, the new service center in Biggin Hill is well positioned to provide world-class heavy maintenance and support services to Bombardier customers and operators in the region. The new 4,790m<sup>2</sup> (51,541ft<sup>2</sup>) facility received certification from the Civil Aviation Authority of the United Kingdom for maintenance of Learjet 70 and Learjet 75, Challenger 300, Challenger 350, Challenger 600 series, Global 5000 and Global 6000 aircraft in March 2017. It is fully equipped to perform scheduled and unscheduled maintenance, as well as modifications and avionics installations for Bombardier Learjet, Challenger and Global aircraft.

### Rolls-Royce expands service network for business aircraft

Rolls-Royce is further expanding its global network of Authorised Service Centres (ASC) for its CorporateCare customers. This ASC network forms an essential component of Rolls-Royce's services portfolio for business aircraft and adds to its existing global aftermarket capabilities. Rolls-Royce now has 72 Authorised Service Centres in place with key maintenance pro-

viders worldwide. The powerful service infrastructure of the ASCs is complimented by On Wing Services specialists who are located in the USA, Europe, Middle East and Asia, as well as a number of spare parts, lease engine and tooling storage locations, all placed strategically around the world.

The expansion of the Authorised Service Centres network includes:

Lufthansa Bombardier Aviation Services GmbH in Berlin (Germany) offering services for BR710-A2 engines

TAG Farnborough Engineering Ltd in Farnborough (United Kingdom) offering services for BR710-A2 engines

Embraer Aviation International at Le Bourget (France) offering services for AE 3007A engines  
Jet Aviation Vnukovo LLC in Moscow (Russia) offering services for BR725 engines in addition to its existing service portfolio for BR710-A1/A2/C4, Tay 611-8/8C and AE 3007A engines.

### EDM to manufacture B737 Door Trainer for Jet2.com

Jet2.com has awarded EDM, a leading global provider of training simulators to the civil aviation and defense sectors, a contract to manufacture a B737 Door Trainer. The Door Trainer will be used to train the UK airline's cabin crew to become proficient in the safe operation of B737 aircraft doors, including procedures for normal, abnormal and emergency scenarios. The Door Trainer will incorporate a clutch system to simulate slide deployment with an associated slide inflation sound to add further realism to the training experience. Once built at EDM's manufacturing facility in Manchester, the new B737 Door Trainer will be shipped and installed at Jet2.com's cabin crew training centre in Bradford, West Yorkshire. EDM has previously manufactured a B757 Door Trainer and B737 Overwing Exit Trainer for Jet2.com.

### Eirtech Aviation Services announces 1,000th EASA-approved aircraft modification

Eirtech Aviation Services announced their 1,000th aircraft modification under EASA Part 21J Design Organisation Approval (DOA). This is a major milestone for the rapidly growing aviation services provider with offices in Shannon, Dublin and Singapore. Eirtech design and integrate engineering modification programs on commercial aircraft for airlines and aircraft leasing companies globally. As an EASA Part 21J DOA, Eirtech's Engineering Department is responsible for assessing the viability of a proposed project and progressing

it from the initial enquiry through the design, verification and certification process, ensuring the modification complies with all regulatory frameworks recommended by EASA.

### Kenya Airways opts for AFI KLM E&M APU services

EPCOR, the AFI KLM E&M subsidiary specializing in the overhaul and maintenance of APUs and pneumatic components, is to handle maintenance for the APUs equipping Kenya Airways Boeing 737 Next Generation (GTCP131-9B), Boeing 787 (APS5000) and Embraer 190 (APS2300) aircraft under the terms of an exclusive contract signed between the Kenyan carrier and AFI KLM E&M. The contract covers APU overhauls, repairs and logistics/AOG support, plus the supply of spare APUs.

### MTU Maintenance Canada expands pneumatic starter testing capabilities

MTU Maintenance Canada has installed and implemented a new test cell for high-flow pneumatic starter testing capabilities. The addition of this capability expands the existing engine, accessories, and Line Replaceable Unit (LRU) portfolio of MTU Maintenance, one of the largest independent provider of engine services worldwide, and provides customers with more integrated services, faster turnaround times, better logistics, and cost efficiency. The new testing equipment can generate up to 1,500 standard cubic feet per minute (SCFM) of continuous flow and 8,000 SCFM of instantaneous flow – one of the largest air flow capacities for starter testing globally. Consisting of a compressor, mist eliminator, dryer and air receivers, the system produces ISO 8573-1: 2010 [parts 1,2,1] quality air and can be used to test starters from 25 different engine types, including the largest commercial engine worldwide, the GE90. Currently, MTU Maintenance Canada performs testing for CF6-50/-80, V2500 and CFM56-7 starters. The location plans to introduce GE90-110/-115B and CF34-8/-10 starter capabilities in the near future.

### Aero Norway achieves significant milestone as 150th repaired CFM56 engine leaves the Stavanger facility

Norway-based engine MRO facility Aero Norway AS reached an important milestone this month as technicians completed the 150th repaired CFM56 engine in the past 18 months.

Aero Norway has recently moved to a shift work programme to increase its engineering capacity as the rate of engine inductions at the facility continues to grow. This engine left the workshop bound for the Enter Air fleet. Enter Air's CFM56-7B26 engine was in for a light shop visit encompassing repair and modification under a fast turn-around time to ensure quick return to service. Aero Norway's flexible customer service agreement with Enter Air commenced in 2015 with the CFM56-3 type and that has recently been extended to cover the CFM56-7B model.

### AEI inducts third 11 pallet position B737-400SF freighter conversion for Kalitta Charters

Aeronautical Engineers (AEI) has inducted the third 11 pallet position B737-400SF freighter conversion for Kalitta Charters. The aircraft (MSN 25849) arrived at Commercial Jet's Miami, FL facility and commenced modification on May 15. The completed freighter will be re-delivered to Kalitta at the beginning of September. The AEI B737-400SF is the only passenger-to-freighter conversion product that offers operators ten full-height 88" x 125" container positions. This unique capability is achievable due to AEI's Main Deck Cargo Door location which is approximately 40" further back than that of the competition. The additional container position increases AEI's volumetric carrying capability by 10%.

### AJW set to start delivery of power-by-the-hour support to Brazilian operator, Modern Logistics

AJW, a leader in the global management of aircraft spares, is set to provide full power-by-hour support to Brazilian Operator, Modern Logistics. Support of its B737-400 freighters and augment dispatch reliability will begin imminently as the airline expands fleet to fifteen aircraft. The multi-year contract recognizes the reputation that AJW has established in the Brazilian marketplace and the company's willingness to be flexible and support start-up airlines with their alignment of operational costs.

### FL Technics to provide full CAMO support to Nordavia's Boeing 737 fleet

FL Technics, a global provider of one-stop-shop aircraft maintenance, repair and overhaul services, has signed a CAMO support

agreement with Russian carrier Nordavia – Regional Airlines. FL Technics will provide full engineering support to the carrier's Boeing 737 fleet. With 21 destinations, Nordavia operates a fleet of nine Boeing 737-500 aircraft. Under the new cooperation, FL Technics will provide aircraft maintenance planning, AD/SB evaluation, reliability analysis, engine condition monitoring and other engineering services. FL Technics provides CAMO services for both aircraft operators and owners worldwide. Under its EASA Part M Subpart G and BCAA OTAR 39 approvals, FL Technics provides CAMO support for Boeing 737, Airbus A320 Family, Airbus A330, Boeing 757, Boeing 767, CRJ-200, Embraer-145/170, SSJ100 aircraft types.

### Avtrade completes purchase of Airbus A340 – 300 aircraft

Avtrade has announced the continuation of its aircraft acquisition program with the purchase of an Airbus A340-300 (MSN 078) aircraft. Complete with four CFM56-5C4 engines, the Airbus aircraft will be parted out and components will be added into Avtrade's extensive Airbus stock to service over 800 airlines worldwide. The Airbus components will be fully serviceable and certified to both EASA and FAA release. Demand for Airbus components has significantly grown over the last few years. Avtrade's increased Airbus inventory and high-quality first-class service and support will enable Avtrade to meet this demand. Commitment to continuous investment and development of its stock portfolio allows Avtrade to constantly expand its customer base and range of services.

### Malaysia Airlines extends cooperation with AFI KLM E&M

Malaysia Airlines has decided to extend its long-running component support contract with AFI KLM E&M covering its fleet of Boeing Next-Generation 737-800 aircraft. The initial agreement was intended to cover 35 aircraft. The support provided by AFI KLM E&M covers 54 aircraft and will involve a wider range of Part Numbers (P/N). The Malaysian Carrier has also extended the contract duration for the coming years. The component support solutions supplied to Malaysia Airlines are implemented via the Component Services Program (CSP) operated jointly by AFI KLM E&M and Boeing. Services include component repair and access to the local and main AFI KLM E&M spares pools located respectively in Kuala Lumpur and Amsterdam.



IAI and Haite Group sign partnership agreement at the Paris Air Show  
Photo: IAI

### IAI's Bedek Aviation Group and Haite Group to co-develop conversion program

The Bedek Aviation Group of Israel Aerospace Industries (IAI) has recently signed a partnership agreement with Haite Group, through its subsidiary Tianjin Aircraft Engineering, to co-develop a conversion program of the B737NG Passenger aircraft into a Special Freighter. The collaboration was announced at the 2017 Paris Air Show. Bedek and Tianjin expect the new partnership will be up and running quickly so that the first Converted B737-700 Aircraft is certified and delivered to their launch customer. The development of Passenger to Special Freighter Conversion of the Boeing 737-800 has already begun under the same co-development cooperation. The project is progressing according to schedule and is expected to make Bedek group one of the first suppliers to reach the market with a certified Supplemental Type Certificate (STC).

### AFI KLM E&M joins Rolls-Royce CareNetwork with maintenance agreement

Air France Industries KLM Engineering & Maintenance is to join the Rolls-Royce CareNetwork with an agreement covering Trent XWB engines. Air France KLM has 25 Airbus A350 aircraft on order with 25 options, all powered by the Trent XWB. These engines will be supported under a TotalCare long-term services arrangement, with engine maintenance carried out by AFI KLM E&M. In addition, both parties will cooperate on the repair of Rolls-Royce engine parts and components. First component repairs to be implemented by AFI KLM E&M are Trent 1000 LPC shaft and IPC front stub shaft, and Trent 1000/Trent XWB Tiled Combustion chambers. Rolls-Royce is developing its CareNetwork to be more capable, competitive and flexible as its Trent-installed base grows.

### AAR signs extended PBH contract with Air Austral

AAR has secured an extension to its contract supporting Air Austral's fleet of B737NG aircraft, which began in 2009. "AAR's successful support to customers such as Air Austral demonstrates our flexibility and willingness to understand each customer's operational needs, which helps us secure repeat business," said Deepak Sharma, President, International Supply Chain, AAR. Based on Reunion Island, Saint Denis and Saint Pierre in the Indian Ocean, Air Austral operates internationally. Its extensive network provides flights within the Indian Ocean, Europe, Asia and Oceania.

### PPG Central Europe aerospace center approved for Airbus sealants packaging

The Central Europe application support center (ASC) operated by PPG in Hamburg, Germany, has been approved by Airbus for repackaging aerospace sealants from bulk containers into customer-friendly point-of-use packages. PPG will repackage three grades of PR-1782 low-density fuel tank and fuselage sealant into SEMKIT packages for Airbus and its subcontractors, as well as Airbus aircraft operators and maintenance and repair operations in 22 countries across Europe.

### ATR selects Liebherr-Aerospace for new generation air management system

ATR has selected Liebherr-Aerospace to develop, manufacture and supply a new-generation air management system for the ATR 42 and the ATR 72 aircraft programs. The system will be developed and produced by Liebherr-Aer-

ospace Toulouse SAS, Toulouse (France), Liebherr's center of excellence for air management systems. ATR awarded Liebherr-Aerospace for the design, production and service of a new generation air management system for ATR's 42/72 aircraft family. The air management system includes the bleed, air conditioning and cabin pressure control subsystems, together with an optional cooling system that provides supplemental cooling capacity when the aircraft is on the ground. Liebherr-Aerospace leveraged its unique experience in air management systems for turboprop and jet engine regional aircraft to design a highly reliable, system of low weight that is adapted to the aircraft's particular operating conditions. The new generation air management system will generate an enhanced on-board comfort for passengers and crews both in flight and on the ground, while substantially reducing the cost of operations for the airlines.

### GE Additive creating world's largest laser-powder additive machine

GE Additive is creating the world's largest laser-powder additive manufacturing machine. Tailored for the aerospace industry, the machine will be able to print in a "build envelop" of one meter cubed (1000mm x 1000mm x 1000mm). The development project, announced at The Paris Air Show, will be unveiled in November at the Formnext Show in Frankfurt, Germany. "The machine will 3-D print aviation parts that are one meter in diameter, suitable for making jet engine structural components and parts for single-aisle aircraft," said Mohammad Ehteshami Vice President and General Manager, GE Additive. "The machine will also be applicable for manufacturers in the automotive, power, and oil and gas industries." The initial technology demonstrator machine, called "ATLAS", is a laser/powder machine and will be 'meter-class' (1000mm) in at least two directions. The GE team has been developing the machine over the past two years and several proof-of-concept machines have been built. In the machine's production version (1000mm x 1000mm x 1000mm), the build geometry will be customizable and scalable for an individual customer's project. Its feature resolution and build-rate speeds will equal or better today's additive machines. It is also designed to be used with multiple materials, including non-reactive and reactive materials (such as aluminum and titanium). "We have customers collaborating with us and they will receive beta versions of the machine by year's end," Ehteshami added. "The production version (yet to be named) will be available for purchase next year." GE is targeting first deliveries of the machine in late 2018.



Air Canada and AFI KLM E&M extend GE90 support contract  
Photo: AFI KLM E&M

### Air Canada extends GE90 support contract with AFI KLM E&M

Air Canada and AFI KLM E&M have signed an agreement at the Paris Air Show to extend the scope and duration of the GE90 support contract originally signed between the two groups in 2010. Under the terms of the agreement, the existing contract has been expanded to include four additional engines powering the two latest Boeing 777-300ERs to enter the Canadian flag carrier's fleet. The contract's duration has also been extended.

### Satair Group signs first major contract with Safran Nacelles covering global lifetime supply chain services

Satair Group has signed its first major contract with Safran Nacelles, covering global lifetime supply chain services for engine nacelle parts and components used on Airbus A340-500/600 jetliners. Under the terms of the agreement, Satair Group has now assumed responsibility over Safran Nacelles' entire supply chain for the A340 nacelle elements, carrying out support duties through the lifetimes of the four-engine aircraft. There are currently 90 A340-500/600s in operation, and Satair Group estimates the aircraft type will remain in service beyond 2030. A physical transfer of Safran Nacelles' A340 nacelle parts inventory has been made from the company's Paris support center to Satair Group's Copenhagen facility. Safran Nacelles will continue a direct working relationship with its A340 customers for overall customer support, nacelle maintenance and repair (MRO) services – as well as engineering support.

### NORDAM to supply anchored honeycomb panels for Airbus A320neo Leap-1A engine inlets

NORDAM has signed a long-term contract to supply Airbus with anchored honeycomb air-inlet panels for the Leap-1A engine used on the A320neo family of aircraft. The agreement will generate several million dollars of annual revenue, with deliveries beginning early next year. Set for manufacture at the NORDAM Interiors & Structures Division in Tulsa, the air-inlet panels are comprised of graphite-honeycomb composite skins, as well as laminate profiles and fittings. The assembled panels will ship to the Airbus manufacturing facility in Nantes, France for integration into the Leap-1A engine inlet assembly. The panel is the first A320neo composite component for NORDAM. Other Airbus products manufactured or repaired across all NORDAM divisions include the A350 XWB cargo-floor crutch and A350 XWB over-wing fairing shim; a variety of flight-control surfaces, and a mix of cabin windows, landing-light and wing-tip lenses in use on the A320 and A320neo, A330 and A330neo, A350 XWB and A380.

### Rolls-Royce selects Liebherr-Aerospace for Trent 7000 engine valve

Aero-engine manufacturer Rolls-Royce has selected Liebherr-Aerospace for the design, manufacture and service of a key pneumatic component, the high-pressure non-return valve, for the Trent 7000 engine. In this first contract Liebherr-Aerospace has received from Rolls-Royce, the company will supply the

high-pressure non-return valve for the new Trent 7000. This engine will exclusively power the Airbus A330neo aircraft. The valve will be designed and manufactured by Liebherr-Aerospace Toulouse SAS, Toulouse (France), Liebherr's center of excellence for air management systems. The valve's technology will benefit from Liebherr's outstanding experience in designing, producing and servicing high-temperature and high-pressure pneumatic valves which have been integrated into the engine bleed air systems of most of the world's major commercial aircraft programs.

### Finaero obtains EASA Part 21J for interiors division, AIP

Finaero pursues its development and announced at the Paris Air Show the attribution for its interiors branch, AIP, of EASA's PART 21J certification. The interiors branch AIP will now be able to certify its own designs through its recent PART 21J (EASA.21J.561) certification, in addition to its already existing PART 21G (FR.21G.0065) and PART 145 (FR.145.546). This qualification will enable Finaero to offer its customers an even broader array of interior design services supported by its Roissy Charles de Gaulle design, certification and product office.

### Sabena technics and AFI KLM E&M to set up Singapore joint component repair shop

AFI KLM E&M and Sabena technics have signed a partnership agreement to set up a joint venture to support A320 and ATR component repairs in Singapore's new Seletar aviation cluster. South East Asia is seeing the world's fastest growth in aircraft maintenance and AFI KLM E&M and Sabena technics already support large numbers of A320 family and ATR operators throughout the region. Setting up the joint venture will help both partners meet growing demand for MRO services throughout the region. This local entity will help curb costs and shorten TAT for client airlines at the same time as it will allow them to benefit from the operational excellence of two market-leading MRO providers, ultimately delivering a competitive solution to the requirements of Asian airlines. The 50/50 joint venture will begin operations in Sabena technics' Singapore component repair shop, which is already operational at Seletar. The shop will support its mother companies on their PBH contracts and it will also offer Time & Material component repair services on A320 and ATR fleets to third-party regional customers.

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DHL Express has ordered an additional four firm and 10 optional A330-300 passenger-to-freighter conversions from EFW  
Photo: EFW

### EFW secures second A330-300P2F conversion contract from DHL Express

Elbe Flugzeugwerke (EFW), the joint venture between ST Aerospace and Airbus, reported that DHL Express has ordered an additional four firm and ten optional A330-300 passenger-to-freighter (P2F) conversions from the Germany-based aviation company. This follows the launch contract for four similar A330-300P2F conversions that was also awarded by DHL Express in July last year. The first aircraft under the launch contract is currently undergoing conversion at EFW's Dresden, Germany-based facilities, and is on track to be redelivered by the end of 2017. The contract was signed at the 52nd International Paris Air Show.

### Bombardier signs several customer services agreements

LOT Polish Airlines has signed a five-year Smart Parts agreement with Bombardier to provide long-term component management for the airline's fleet of 10 Q400 aircraft. Bombardier has enhanced support for operators of Q Series turboprops and CRJ regional jets by entering into an agreement with Jazz Aviation (Jazz), a Chorus Aviation subsidiary, whereby Jazz Technical Services (JTS) will become Bombardier Commercial Aircraft's first Authorized Service Facility (ASF) located in Canada. Under the ASF agreement, which takes effect immediately, JTS will offer aircraft operators heavy maintenance services from its facilities located in Halifax, Nova Scotia. Bombardier has extended and expanded its strategic alliance with GKN Aerospace's Fokker business to provide coverage for the CRJ Series regional jets. As an Authorized Service Provider, GKN Aerospace's Fokker business is therefore now supporting operators of Dash

8/Q Series 100/200/300 turboprops, as well as operators of CRJ Series regional jets under Fokker's industry-leading ABACUS program. Aimed at improving the availability of components and reducing operators' repair and overhaul costs, the ABACUS program provides customized services on a cost-by-the-hour basis, allowing operators to better manage the life cycle costs of their aircraft. Flight Simulation Technique Centre (FSTC), India's largest stand-alone diversified Approved Training Organization, has entered into a data license agreement with Bombardier, and has ordered a Q400 Full Flight Simulator from FlightSafety International to provide support to Q400 aircraft operators. FlightSafety is a world-leading supplier of training services, flight simulators, visual systems and displays.

### OEMServices and GTLK Europe sign MOU to develop SSJ100 aircraft support

OEMServices, leading provider of integrated OEM component solutions towards airlines, and GTLK Europe have found a common approach in order to develop aftermarket solutions related to the SSJ100 platform. This partnership is a result of strong synergy between the companies. OEMServices brings its knowledge of aircraft support (component services, logistic services, airline customer relationship management and technical configuration) while GTLK provides its expertise as investor and lessor as well as its relationship with leasing customers. "This agreement is a strategic step in our development plan. The SSJ100 is a key aircraft for us and we expect this relationship to provide a world class service towards airlines in all worldwide regions. This partnership shows the important complementarity between our companies" said Didier Granger, President-CEO of OEMServices.

### AJW Group extends WOW air contract

AJW Group has announced the extension of additional Airbus A321 aircraft to its power-by-the-hour (PBH) contract with the Icelandic low-cost carrier WOW air. AJW originally signed a PBH contract with WOW air in 2013 to provide support for the airline's Airbus A320 aircraft. Following the success of the initial agreement, this was subsequently expanded in 2015 to include Airbus A321 aircraft as well. This latest expansion means that AJW now supports all of WOW air's current generation Airbus A320 family aircraft.

### Kellstrom Aerospace launches new technical services division

Kellstrom Aerospace has launched its new technical services division, Kellstrom Aerospace Technical Services. Kellstrom Aerospace Technical Services (KATS) will provide lessors, operators and owners of aircraft and engines with tailored technical services aimed at reducing maintenance costs. KATS efficiently utilizes the collaboration between the technical and commercial offerings of Kellstrom Aerospace Group to provide engine shop visit management services including; inspections, test cell performance reviews, surgical strike workscoping, on-wing troubleshooting and component repair management services. Jeff Lund, CEO, Kellstrom Aerospace commented "We are very excited to announce Kellstrom Aerospace Technical Services (KATS) as we see a need from our customer base for unbiased engineering expertise that reduces maintenance costs while protecting the commercial value of an asset."

### Norwegian selects Boeing to provide flight training needs

Norwegian has selected Boeing to provide all its flight training needs. Last year at the 2016 Farnborough International Airshow, Norwegian committed to Global Fleet Care (formerly known as GoldCare) coverage for its 737 MAX fleet and expanded coverage for the airline's entire 787 fleet. These services agreements represented the largest commercial services order in Boeing history. This latest announcement extends this further to now include all its flight training requirements across its Boeing fleet. In July, the work conducted under this contract will reside in Boeing Global Services, a new dedicated services business focused on the needs of global defense, space and commercial customers. Boeing and Norwegian also announced an order

for two additional 737 MAX 8s at the 2017 Paris Air Show. Valued at US\$225m at current list prices, Norwegian now has 110 unfilled orders for 737 MAX 8s.

### Boeing, Monarch announce 737 MAX services agreements and new engineering joint venture partnership

Boeing and Monarch Airlines announced that the UK carrier has selected Boeing's Global Fleet Care — formerly known as GoldCare — for its entire 737 MAX fleet. Through Global Fleet Care's Integrated Fleet Solution, Boeing will deliver maintenance, engineering and parts required to run Monarch's MAX operations following the delivery of its first airplane in 2018. Monarch has also selected Boeing as its flight training provider for its 737 MAX fleet and will be entering into an agreement with Boeing subsidiary AerData for services pertaining to aircraft records management. The two companies have also reached an agreement to collaborate on securing additional third-party fleet servicing agreements. The partnership will seek to capitalize on Boeing's strength and reach within the industry and the expertise of Monarch Aircraft Engineering (MAEL), which has been providing maintenance, repair and overhaul services to some of the world's best-known airlines for 50 years.

### SGS Part 145 approved for non-destructive testing of aircraft operating in Europe

SGS, leader in non-destructive testing in France for aircraft production and assembly sites, has obtained Part 145 approval for non-destructive testing. Already present throughout the aviation industry value chain, from design to production through assembly, this international approval

extends SGS's services to maintenance. From now on, SGS will be present through the whole aircraft life cycle, from birth to decommissioning! Ten senior engineers and technicians have already been trained and are operational, and with its subsidiary in Spain already part 145 approved for NDT, SGS is present throughout Europe, the Maghreb and the Middle-East. To best meet the requirements of airlines, equipment manufacturers and constructors, and so to offer the most complete package possible, SGS made a request to OSAC in France at the beginning of the year to obtain part 145 approval for NDT.

### Elite Airways signs 3-year agreement with C&L Aviation Group

C&L Aviation Group has signed a 3-year aircraft maintenance support agreement with Elite Airways to perform aircraft heavy maintenance services on their fleet CRJ 100, 200 and 700 aircraft. These services will include heavy checks, aircraft painting, interior refurbishment, and other maintenance support responsibilities. C&L is a global aviation services and aftermarket support provider for regional and corporate aircraft specializing in aircraft maintenance, aircraft refurbishment and re-marketing, quality parts, sales and leasing, and has extensive experience working with the Bombardier CRJ aircraft.

### Pratt & Whitney expands PurePower Geared Turbofan engine MRO network

Pratt & Whitney will widen its global network of providers that maintain the company's revolutionary PurePower Geared Turbofan (GTF) engines to include Pratt & Whitney's Eagle Services Asia (Pratt & Whitney Singapore Engine Center). The Singapore Engine Center

will become one of Pratt & Whitney's industry-leading maintenance, repair and overhaul (MRO) providers located around the world that deliver high quality maintenance support to GTF engine operators including Pratt & Whitney, MTU Aero Engines, Japanese Aero Engines Corporation and Lufthansa Technik. The Pratt & Whitney Singapore Engine Center will provide engine maintenance for the PW1100G-JM. An estimated capital investment of nearly US\$85m will outfit the facility with advanced capabilities such as an environment control system and an engine flow line system. Pratt & Whitney expects modifications to the facility to start in 2018, and GTF engine service to commence in 2019.

### FL Technics and Future Metals to launch a joint spare parts stock in Europe

FL Technics, a global provider of one-stop-shop aircraft maintenance, repair and overhaul services, has expanded its cooperation with a leading supplier of aerospace metals and other materials – Future Metals – by agreeing to set up a stock of metal products in Vilnius, Lithuania. Back in 2015, the US-headquartered Future Metals appointed FL Technics as its exclusive representative in 12 countries across Central Europe and Central Asia. Over the two-year-long cooperation with FL Technics, Future Metals doubled its sales in the region. In order to further expand the availability of quality metal products for airlines and MROs in Russia, Kazakhstan, Ukraine and other target countries, the parties agreed to establish a joint stock of aircraft metals and other specialty items such as seat tracks, seat track covers, welding rods, safety wire, flight control cables and more. The stock will be established at and managed by FL Technics in Vilnius, Lithuania.

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### Waypoint Leasing extends over US\$390m revolving credit facility commitments

Independent global helicopter leasing company Waypoint Leasing, has extended the maturity on two of its existing revolving credit facilities. In aggregate, there are over US\$390m of revolving credit commitments extended across seven lenders, with over US\$100m now maturing in late 2019 and over US\$280m in late 2020. The company will use the proceeds to support its aircraft order program and to continue to facilitate efficient closings and financing solutions for its customers. To date, Waypoint has accessed secured and unsecured financings in the bank, export credit and debt capital markets. Waypoint's acquired fleet of 147 aircraft has 31 lessees, operating in 31 countries, with total assets in excess of US\$1.6bn. Waypoint has firm and option orders with aircraft manufacturers for helicopters valued at more than US\$1.3bn, comprised primarily of Light Twin to Super-Medium positions focused on a variety of end-user markets, in particular the EMS and Utility marketplace.

### GE Aviation acquires leading robotics manufacturer OC Robotics

GE Aviation has acquired OC Robotics, the world's leading designer and manufacturer of commercial snake-arm robots and software for confined and hazardous environments. Founded in 1997 in Bristol, UK, OC Robotics' robotics expertise will support GE Aviation's Services organization. "OC Robotics will play an important role in how we service our customers' engines," said Jean Lydon-Rodgers, vice president and general manager of GE Aviation's Services organization. "This acquisition will expand our component repair development capabilities and increase the efficiency of the On Wing Support team as they perform inspections and repairs on our customers' engines." With a reach of more than 3 meters and a cumulative bend of more than 180 degrees, OC Robotics' flexible snake-arm robots are ideal for working in tight spots and can conduct various tasks, including inspections, fastening and cleaning when integrated with tooling. OC Robotics is active in the aerospace, nuclear, petrochemical, security and construction industries throughout Europe, North America and Asia. Terms of the acquisition are not being disclosed.

### SOCOMORE pursues dynamic external growth strategy with acquisition of ELIXAIR

SOCOMORE and the owners of ELIXAIR have signed an agreement under which Socomore acquires the company and signs an exclusive worldwide license for the commercialization of composite plastic scrapers that allow easy removal of adhesives and cured sealant residues. Along with the Skywipes, the SkyScrapers line of products are complementary to SOCOMORE pre-saturated wipes for the cleaning of adhesive tapes, adhesives and uncured sealant residues. The license covers the following product ranges:

- SkyScrapers for the application of sealant and removal of sealant and adhesive tape residues
- SkyMill Revolution, a sharpening tool to clean and extend the SkyScrapers' life
- SkyEdgit, a portable grinding device for SkyScrapers usable directly at the operators' workstations.

Both the Skywipes and SkyScrapers family of products are approved by most aerospace OEMs (Airbus, Boeing, Bombardier, etc). SOCOMORE will promote and market these products with the support of 3M, the historical distributor for the remainder of 2017. SOCOMORE

will take-over 3M's worldwide channel to market on December 31, 2017 in order to continue to develop Elixair products' sales worldwide at main aerospace manufacturers and service providers, through its existing network of subsidiaries and partners around the globe.

### Safran in exclusive discussions with Hexcel for sale of Structil

Safran Ceramics, along with co-shareholder Mitsubishi Chemical Corporation, have started exclusive discussions with Hexcel to sell all shares and voting rights in the company Structil, jointly owned by Safran Ceramics (80.05%) and Mitsubishi Chemical Corporation (19.95%). Structil become part of Safran when the latter acquired SNPE's energetic materials business in 2011. Structil designs, produces and sells structural adhesives and high-performance carbon-fiber composite materials for aerospace and other high-tech industries. In 2016 Structil recorded sales of €19m (US\$21m); it has about 70 employees at its plant in Vert-Le-Petit, near Paris. Hexcel, a benchmark vendor for Safran, is a global leader in advanced composites technology. It has over 6,300 employees worldwide, including more than 1,000 in France at five plants, and posted sales of about US\$2bn in 2016 (more than one-fourth in France). Over 85% of its sales are to the aerospace sector, including products for airplanes from Airbus (especially the A350 XWB) and Boeing, and the LEAP engine from Safran.

### AviaAM Leasing reports €80,8m revenue, profit growth in 2016

AviaAM Leasing, a Warsaw Stock Exchange-listed aircraft leasing company, has reported its financial results for 2016, recording a significant increase in business volumes – company revenue tripled to €80.8m, operating profit jumped by 75% from €13.9m in 2015 to €23.1m in 2016. Net profit grew from €9.1m to €16.1m. The company's rapid growth was largely driven by the increase in aircraft trading and leasing activities. Additionally, last year AviaAM Leasing grew its presence in the Asian market. The company established a joint venture together with Henan civil aviation development and investment company (HNCA) – AviaAM Financial Leasing China. The company provides aircraft leasing, sales and consulting services around the globe. Already within the first months of operations, AviaAM Financial Leasing China has signed an operating lease agreement valued at almost US\$800m, according to which, 16 Airbus A320s and Airbus A321s will be leased to the largest Russian carrier – Aeroflot. In April 2017, the first three aircraft were already shipped to the carrier. (€1.00 = US\$1.12 at time of publication.)

### Safran completes sale of identity and security activities

Safran has completed the sale of its identity and security activities to Advent International for €2.40 bn (US\$2.69 bn). As announced on September 29, 2016, the transaction will result in a pre-tax capital gain to be recorded in Safran's first-half 2017 accounts. The identity and security activities had been classified as "discontinued" in Safran's 2016 accounts. Safran's financial outlook, issued upon publication of 2016 annual results on February 24, 2017, refers to "continuing operations" and is unaffected by this change in scope. This transaction follows the sale of the detection activities in April 2017. Safran has therefore completed its strategic refocusing announced at its Capital Markets Day in March 2016. The group is now entirely focused on aerospace and defense, and concentrated

on its own path of strong growth and high profitability. The contemplated acquisition of Zodiac Aerospace by Safran would create the world's third-largest player in aerospace and the world's second-largest player in aircraft equipment

### IAI posts first-quarter 2017 net income of US\$46m

Israel Aerospace Industries (IAI), Israel's largest national military and civilian security defense company, issued its consolidated financial statements for the three months ended March 31, 2017. Operating income in the first-quarter 2017 totaled US\$44m (5.3% of sales) compared with US\$11m (1.3% of sales) in the first quarter of 2016. EBITDA in the first-quarter 2017 amounted to US\$72m compared with US\$38m in the first quarter of 2016. Net financial expenses amounted to approximately US\$7m, similarly to the corresponding quarter of 2016. Net income in the first-quarter 2017 amounted to US\$46m (5.5% of sales) compared with net income of US\$11m (1.3% of sales) in the first quarter of 2016. The order backlog at the end of the first-quarter 2017 totaled US\$9.3bn compared with US\$9bn at the end of 2016. 71% of the order backlog is held for sale to foreign customers with wide geographical dispersion. The order backlog is comprised of a wide variety of products and secures two-and-a-half years of operation. With the addition of the mega engagements signed and reported after the date of preparation of the financial statements, the order backlog currently amounts to US\$11bn.

### SIA Engineering Company and GE Aviation to form Engine Overhaul Joint Venture

SIA Engineering Company and GE Aviation have agreed to establish a new engine overhaul joint venture based in Singapore. The joint venture will provide a full range of engine maintenance, repair and overhaul (MRO) services for the GE90 and GE9X engines. The GE90 engine exclusively powers the Boeing 777-300ER and 777-200LR, and the GE9X engine is the sole engine selection for the Boeing 777X aircraft. The formation of the joint venture, where GE will have a 51% equity stake and SIAEC holding the remaining 49%, is subject to finalization of the definitive agreements and receipt of required regulatory approvals. This partnership, which is expected to have benefits to and beyond the SIA Group, is made possible by Singapore Airlines' announcement in February 2017 of a letter of intent for 39 Boeing widebody aircraft valued at US\$13.8bn, which includes 20 777-9s powered by GE9X engines. SIA is also a major operator of GE90-powered 777-300ERs. The joint venture will establish a state-of-the-art facility, adopting GE's "Brilliant Factory" concepts, combining advanced technologies and lean practices with digitization and data analytics to enhance productivity. Based in Singapore to handle SIA Group as well as third-party MRO work, the joint venture will also present opportunities for Singapore Airlines, in terms of job creation, training and additional service offerings at the Singapore hub.



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### Finaero acquires French train interiors specialist SMTC

Finaero has acquired SMTC, the French train interiors specialist. The objective is to maximize synergies between SMTC and Finaero, both in terms of accompanying developments in the rail industry worldwide as well as on know-how and expertise in the aviation industry. SMTC benefited from a €23m (US\$25.8m) turnover in 2016 and counts 150 employees on its site in Boufféré (Vendée, France). SMTC will, as a result join AIP, the interiors branch of Finaero, specialized in the aviation industry and dedicated to manufacturing tailor-made and small-series aircraft interiors. This new acquisition will further extend the group's service-offering as well as significantly reinforce the branch's production capacities to better serve the aircraft interiors' market.

### Kapco Global acquires D+C-Airparts Battery in Europe GmbH

Kapco Global has reported its recent acquisition of German battery distribution company D+C-Airparts Battery in Europe GmbH. With more than thirty years as a trusted supplier, service center, and battery training facility, D+C-Airparts is one of the most respected names in European aviation battery distribution and maintenance. This acquisition will help Kapco Global further expand its service and repair offerings while maintaining its highest standards of quality and customer care. D+C-Airparts is an authorized distributor for companies including Saft, Marathon, and Hawker. The product line also covers Concorde and Gill lead-acid batteries. It is a Federal Aviation Administration (FAA)-approved repair station and is EASA Part 145 approved by the German Aviation Authority.

### Willis Lease Finance reports first-quarter pretax profit grew 104 %

Willis Lease Finance has reported that pretax income grew 104% to US\$14.4m in the first quarter of 2017 compared to US\$7.1m in the first quarter of 2016, on revenues of US\$77.9m. The company's first-quarter 2017 results were bolstered by US\$32.0m of maintenance reserve revenue, of which US\$21.5m was long-term maintenance revenue related to assets coming off lease. These revenues were offset by related non-cash write downs totaling US\$13.0m. Net income attributable to common shareholders for the first quarter increased 95.4% to US\$7.8m, from US\$4.0m in the first quarter of 2016.

### CDPQ & GE Capital Aviation Services to join forces in creating global aircraft financing platform

Caisse de dépôt et placement du Québec (CDPQ), a leading institutional asset manager, and GE Capital Aviation Services (GECAS), have signed a commitment letter to create a US\$2bn global aircraft financing platform. The transaction is subject to conditions including any required regulatory approvals. This new platform, to be named Einn Volant Aircraft Leasing (EVAL), will be involved in the acquisition of modern fuel-efficient aircraft from a diverse set of global airlines and in leasing them back to such airlines under long-term leases. GECAS will source the transactions and, under a sistership condition, will invest in aircraft ownership opportunities alongside the platform to further align its interests with those of EVAL. GECAS will also act as servicer for the platform. EVAL will provide GECAS with the flexibility to finance future growth and

opportunities, while serving as an entry point for CDPQ into the aircraft leasing and financing industry. In addition, it represents a key step in the expansion of the strategic relationship between GE and CDPQ, which has been built over several years.

### HEICO posts second-quarter net income of US\$45.7m, up 18%

HEICO CORPORATION has reported that net income increased 18% to US\$45.7m, in the second quarter of fiscal 2017, up from US\$38.7m in the second quarter of fiscal 2016. In the first six months of fiscal 2017, net income increased 24% to US\$86.6m up from US\$69.9m in 2016. Operating income increased 15% to US\$76.5m in the second quarter of fiscal 2017, up from US\$66.8m the previous year. In the first six months of fiscal 2017, operating income increased 18% to US\$141.1m, up from US\$119.4m in the first six months of fiscal 2016.

### TrueNoord closes financing facility for two Embraer E190 aircraft leased by Air Astana

TrueNoord, the regional aircraft lessor, has closed the final term financing facility with DVB bank and PK AirFinance for the remaining two of the six Embraer E190 aircraft that it purchased from BOC Aviation earlier this year with leases attached. These two aircraft are operated by Air Astana. This new portfolio of six globally operated E190 aircraft spearheads TrueNoord's highly targeted on-going development strategy for its regional aircraft fleet under lease, supported by investment from private equity firm Bregal Freshstream and Blackrock. Financing is now completed for the six aircraft from the BOC Aviation purchase (operated by AeroMexico, TUI (Jetairfly) Belgium and Air Astana) and TrueNoord is accelerating its acquisitions in the regional aviation sector with a global remit. Currently the organization is exploring a wide range of opportunities across Asia as airlines throughout the region seek new financing solutions for their expanding regional operations.

### GA Telesis closes new US\$225m syndicated ABL credit facility

GA Telesis has closed a new five-year, US\$225m ABL credit facility led by HSBC Securities USA and Fifth Third Bank as Joint Lead Arrangers. The company originally sought a new US\$200m facility. Due to overwhelming interest from existing and new banks, however, the company upsized the facility with better terms than its previous credit facility. The facility comprises seven global, super-regional, and regional banks with HSBC Bank USA as Administrative Agent. The facility is a refinancing of an existing US\$150m ABL facility led by HSBC which was set to expire in 2018. The new facility has a higher loan amount, longer maturity, and pricing and terms consistent with or better than the current facility with the support of a larger and more diverse bank group. The proceeds from the facility will be used for general corporate purposes, acquisitions, and funding of future growth. The five-year term and competitive borrowing costs will provide for financial stability while also allowing the company to make longer term acquisition decisions.

**Commsoft** has announced that its MRO IT system, OASES, has been chosen by **Plus Ultra Líneas Aéreas** to support its three Airbus A340-300 aircraft, to be followed by a fourth later in 2017. OASES provides a high level of technical sophistication whilst still being intuitively user-friendly. Designed by engineers for engineers, the system is structured in a modular format and Plus Ultra has selected the Core, Airworthiness, Planning and Materials modules. Based at Madrid Barajas International Airport, Plus Ultra operates both scheduled and charter flights to transatlantic destinations, including Santo Domingo, the Dominican Republic and Lima, Peru. In March, the airline announced that it would be launching two new routes later this year: Santiago de Chile and Havana, both with connections from Madrid and Barcelona. The initial implementation will be supported by FL Technics, who also provided extensive sales support for the deal as part of their recently-signed agency agreement with Commsoft.

**Bombardier** has reached a long-term partnership agreement with IT consulting firm **IBM** to support the global integration of Information Technology services across Bombardier Transportation and the company's aerospace segments. "As part of our turnaround plan, Bombardier is working to improve productivity, reduce costs and grow earnings. The IT transformation initiative announced today will help us better integrate globally to create a best-in-class IT organization," said Sean Terriah, Chief Information Officer, Aerospace and Corporate Office, Bombardier. "We will transform our service delivery model to focus on our core competencies, and leverage the best practices of our strategic partner across our infrastructure and operations." The new six-year deal spans 47 countries and is expected to generate recurring savings, providing a solid foundation to drive efficiency within Bombardier's global IT organization.

In a move that will help airlines shift toward all-digital operations, **Rockwell Collins** has been selected by **Airbus** for the flight operations and maintenance exchanger (FOMAX) program on the Airbus A320 family of aircraft. The solution, which keeps operators connected to their aircraft by deploying the infrastructure for secure wireless connectivity, represents Rockwell Collins' first major basic content on the A320. Rockwell Collins' solution for FOMAX features a compact connectivity unit

that collects aircraft maintenance and performance data and automatically sends it to ground-based operations. The unit also sends data automatically to the growing number of mobile applications that are being used by flight crews, as well as into efficiency applications such as weather, flight planning, logbooks, and maintenance prediction and performance calculators, all of which bring new levels of productivity and value to airline operations. The FOMAX solution builds upon the existing Rockwell Collins SSR-7000 Secure Server Router to also provide the Wi-Fi network for secure crew connectivity on the aircraft as well as the cellular and terminal Wi-Fi equipment. It also interfaces with all major SATCOM connectivity types.

**PASSUR Aerospace** is partnering with **GE Aviation Digital Solutions (GE)** to leverage GE's domain expertise in software development, design thinking, and Fast-Works. The work will take place in GE's digital collaboration center in Austin, Texas. With iterative input from their customers, PASSUR is in the process of creating the next generation of aviation intelligence solutions to address its customers' biggest operational challenges and opportunities with the goal of improving overall airline and airport reliability, service, and cash flow – and is utilizing GE to help accelerate this journey. "PASSUR partners with its customers to ensure that the best practices from the brightest minds of the industry are reflected in its software solutions," said Jim Barry, PASSUR President and CEO. "GE is bringing the same approach to PASSUR's digital design opportunities by applying the best practices of decision support design to help PASSUR bring leading-edge solutions to its customers."

**GE Aviation Digital Solutions** and **GE Capital Aviation Services (GECAS)** have announced a collaborative effort on electronic records exchange standards for the Aviation leasing market. "The recent acquisition of AirVault by GE Aviation Digital offers an opportunity to further develop electronic aircraft records gathering, management and exchange," said Sean Flannery, General Manager, GECAS Limited. "With planned enhancements, the product will provide new applications to airline operations while additionally serving the needs of aviation leasing companies." GECAS is supporting the product development and will look forward to utilizing the

enhanced features as AirVault expands its capability in electronic record management for movements between operators of both fixed-wing and rotary-wing aircraft. The ability to connect records and data across aviation companies and the IT systems they use to manage their fleets will drive productivity and data availability. Underpinned by GE's Predix platform for the Industrial Internet, this further strengthens the team in developing meaningful insights and optimizing operations over a wide range of aviation applications.

**GE Aviation** and **AT&T Internet of Things (IoT)** solutions are connecting the onboard and offboard portions of the Aircraft Health and Trend Monitoring System (AHTMS) -powered PlaneConnectHTM on the Gulfstream G500, G600, G650 and G650ER business jets. The two companies made the announcement this week during the Paris Air Show. The AHTMS continuously acquires aircraft performance data to help identify problems before they occur, and to assist in troubleshooting difficult to diagnose issues. When the aircraft lands, AT&T Control Center and AT&T Global SIM connects to AHTMS. The system is part of all new Gulfstream G500, G600, G650 and G650ER business jets. The G650 fleet "called home" and wirelessly sent data from all seven continents so far this year. If the customer chooses, Gulfstream Technical Operations can have access to the data to further improve its already best-in-class Product Support.

**Airbus** and **China** have signed a Memorandum of Understanding (MoU) on aviation and aerospace, further enhancing a spirit of cooperation. The MoU was signed in Berlin by Fabrice Brégier, Airbus COO and President of Commercial Aircraft, and He Lifeng, Chairman of the National Development and Reform Commission (NDRC) of China. The MoU strengthens and deepens mutually beneficial collaboration between Airbus and Chinese aviation industry in various fields. Based on an already established solid foundation, Airbus and China will support the development of engineering skills and technology innovation in China, and also promote the integration of Chinese suppliers into Airbus' global supply chain. Co-operation between Airbus and China is already extensive. The Tianjin A330 Family Aircraft Completion and Delivery Centre will deliver its first aircraft in September 2017 and the A320 Family Aircraft Final Assembly Line Asia will start assembly work of A320neo by the end of 2017. Both sides will continue the development of air transportation activities and to address China's rapid aviation growth, tackling global issues such as environment and ATM, and broadening the partnership to include sectors like helicopters.

**Panasonic Avionics Corporation** has introduced **HAECO Component Overhaul (Xiamen)** as an authorized repair centre for its inflight entertainment and communications (IFEC) technology in Mainland China. HAECO Component Overhaul (Xiamen) is a member of the HAECO Group, specializing in providing aircraft component and IFEC repair services to airlines and aircraft operators in the Asia-Pacific region. Repairs performed by HAECO Component Overhaul (Xiamen) on behalf of Panasonic will carry the same Panasonic warranties, as repairs performed by all authorized service providers within the Panasonic repair network. The HAECO Component Overhaul (Xiamen) facility is equipped with Original Equipment Manufacturer (OEM)-dedicated test equipment and features comprehensive spares support from Panasonic. It is also staffed by Panasonic-trained technical personnel. The component repair specialist has been a trusted partner of Panasonic in supporting the OEM's global customers with IFEC repairs, offering competitive turnaround times, cost-saving advantages, and technical support.

**IDAIR**, a joint venture between **Lufthansa Technik AG** and **Panasonic Avionics Corporation**, has been awarded a further two B787s by an undisclosed customer. This award is on the heels of three successful B787 aircraft deliveries. These two B787 aircraft will be provided with Connectivity, Inflight Entertainment and Cabin Management Systems that perfectly meet the requirements for newest cabin technologies. The system to be installed will provide overhead HD displays up to 55 inches, in- and at-seat entertainment, overhead surround and in-seat audio, control of electronically dimmable window shades, comprehensive control of dynamic lighting systems and much more. Private content can be also accessed and streamed to the system, adding to a fantastic private room ambiance.

The Brazilian aircraft manufacturer **Embraer** and the **German Aerospace Center** (Deutsches Zentrum für Luft-und Raumfahrt;

DLR) have signed an agreement to expand their research collaboration in the aeronautics sector. The partners will work together on a wide range of topics, including reducing noise and emissions, improving the aerodynamic and aeroelastic performance of aircraft, and many aspects of lightweight aircraft construction using fiber-reinforced polymers and integrated adaptive systems. The agreement was announced during the Paris Air Show at Le Bourget during a meeting between Pascale Ehrenfreund, Chair of the DLR Executive Board, Rolf Henke, DLR Executive Board Member responsible for aeronautics research, and Daniel Moczydlower, Vice-president for Technology Development at Embraer.

**Airbus** wholly-owned subsidiary, **Satair Group**, and **Meta-material Technologies** and its optical filters division, **Lamda Guard** of Halifax, Nova Scotia, Canada, have signed a Memorandum of Understanding (MOU) which will lead to an exclusive multi-million-dollar global distribution agreement to bring MTI's laser protection product metaAIR to the civil aviation market. metaAIR is nanofabricated as a flexible metamaterial optical filter which can be applied to any transparent surface – such as the inner surface of an aircraft's cockpit windscreen – to control unwanted light sources while not interfering with visibility. The filter deflects harmful laser beams aimed at aircraft windscreens, even at high power levels, and from wide angles preventing the beam from reaching the inside of the aircraft cockpit. In addition to laser protection at night, metaAIR may also feature new types of optical protections such as ultraviolet ray protection for daytime operation at cruising altitudes, answering a long-established concern for many flight crews. Laser strikes on commercial aircraft have risen over the years and laser pointers are increasing in power and decreasing in price. Lasers can distract and even harm pilots during critical phases of flight and can cause temporary visual impairment. Over 2000 laser incidents were recorded in the USA in the first four months alone of 2017 according to the Federal Aviation Administration (FAA). In 2015 there were over 10,000 laser incidents reported to the FAA, the UK Civil Aviation Authority, and Transport Canada.

**Michelin** and **Safran** present the world's first connected tires for the aeronautical industry. The innovation, called 'PresSense' comprises an electronic pressure sensor installed within the tire to greatly improve and simplify ground maintenance operations. The result of a collaboration between Michelin and Safran over two years, PresSense is a wireless solution that functions as an embedded system. The electronic pressure sensor in the tire collects information on the inflation pressure. The digital data is transferred remotely, without any intervention on the tire, by a reader connected to a smartphone, and then to the maintenance database. A much simpler process than conventional maintenance which requires manual pressure collection through the wheel valve and a manometer – quite an operation when inflation pressures exceed 200 psi (15 bar). The deployment of the PresSense project is scheduled for 2019.



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The hot weather did not deter the keenest visitors.  
Photo: Keith Mwanalushi

# Parisian momentum

The 2017 Paris Air Show saw a major boost to order numbers for the big aircraft OEMs but it's the scale of collaborations within the supply chain that was unparalleled. **Keith Mwanalushi** reports from Paris.

**D**espite the chaotic check-in process at this year's Paris Air Show and the extremely hot conditions the 2017 edition was another interesting event.

Providing strong evidence that the commercial aircraft market remains healthy, Airbus announced \$39.7 billion worth of new business during the show. The company won commitments for a total of 326 aircraft, including firm orders for 144 aircraft worth \$18.5 billion and MoUs for 182 aircraft worth \$21.2 billion.

Airbus' backlog extends to a new industry record of more than 6,800 aircraft.

Boeing strengthened its market position with important announcements and multi-billion dollar orders and commitments for commercial aircraft and defence services at the show.

The company launched the 737 MAX 10, the newest member of the 737 MAX family, with more than 361 orders and commitments from 16 operators. Commercial customers announced incremental orders and commitments during the week for a total of 571 Boeing aircraft, valued at \$74.8 billion at list prices.

The 737 MAX 9 starred in the daily flying display while the 787-10 was featured in the static display.

Regional turboprop OEM ATR also used the occasion to sign an agreement with start-up carrier Air Senegal for two ATR 72 – 600s and to also highlight its performance this year. ATR has received commitments for the purchase of 89 aircraft and options for 20 additional ones since the beginning of the year. These commercial results have enabled the regional turboprop manufacturer to achieve, in less than six months, a book-to-bill ratio in excess of one.

In Paris, ATR announced new deals that will enable both ATR 42-600s and ATR 72-600s to develop new markets, in China and Africa in particular.

Liebherr-Aerospace and Transportation SAS welcomed hundreds of partners, official delegations and visitors to its stand. On display was a wide range of air management, flight control, landing gear systems, as well as components, and especially in the field of advanced electronics.

"We are showcasing components for the wing tip folding system for the Boeing 777X aircraft programme and a nose landing gear for the AW189 helicopter, which is extended and retracted on the stand, they are presented to the general public for the first time," declares Ute Braam, from Corporate Communications at Liebherr-Aerospace.



ATR is looking at new markets, in China and Africa in particular.  
Photo: Keith Mwanalushi

In addition, Braam says visitors had the opportunity to discover innovations in research and development, such as the “skin heat exchanger”, a heat exchanger that is an integral part of the aircraft structure. “Further highlights include various components produced using the 3D printing process, such as the valve block of a spoiler actuator that has flown for the first time this year on board an A380 test aircraft.”

Amongst others, an electronic control unit for the high lift system of the Embraer E-Jet E2 was also displayed on the stand. This electronic control unit was developed by Liebherr-Aerospace in collaboration with Liebherr-Elektronik GmbH, Lindau (Germany), which is also showcasing products of its own at the stand.

Braam states the digitalisation of maintenance activities, and in particular health monitoring, were the key features of this year’s discussions. “We presented to our airline partners the tremendous optimisation of their operating costs that our health monitoring initiatives will bring to their operations.

“Another key highlight will be the extensive maintenance packages offered by our joint venture OEM services that already convinced some of the world’s highest ranking airlines,” Braam adds.

In fact, during the show, ATR awarded Liebherr-Aerospace for the design, production and service of a new generation air management system for ATR’s 42/72 aircraft family. The air management system includes the bleed, air conditioning and cabin pressure control subsystems, together with an optional cooling system that provides supplemental cooling capacity when the aircraft is on ground.

Over at the Satair Group (a 100% subsidiary of Airbus) the Paris show presented the opportunity to get a confirmation of the general growth the company sees in the market. “Also, we expect to get to know even more about our customers’ maintenance needs for the remaining year and next year. In short, we expect to get to know more about our customers’ future requirements and needs in order to prepare for 2018,” says Manja Brichmann Andersen, Head of Marketing and Communication at Satair Group.

Satair Group was represented by 28 people at this year’s show. “The show is of great value for both sales, business development and product management of Satair Group and it gives us the opportunity to network, nurse and strengthen our relationship with our business partners.”

Everyone is talking about Big Data and digitalisation and Brichmann

notes these were the key issues of discussion and how they can be used to transform the aircraft material services market. “Satair Group believes that digitalisation is a key trend for the future of the integrated aerospace aftermarket and we look forward to learning how we can make use of the new technologies to provide even better service and offerings,” she states.

Jumping on the collaboration bandwagon Satair Group has signed its first major contract with Safran Nacelles, covering global lifetime supply chain services for engine nacelle parts and components used on Airbus A340-500/600 jetliners.

Under the terms of the agreement, Satair Group has now assumed responsibility over Safran Nacelles’ entire supply chain for the A340 nacelle elements, carrying out support duties through the lifetimes of the four-engine aircraft. There are currently 90 A340-500/600s in operation, and Satair Group estimates the aircraft type will remain in service beyond 2030.

“This agreement with Satair Group, on the entire supply chain for this legacy nacelle programme, enables us to focus on our utmost mission as a nacelle designer and integrator for current and future programmes, while also maintaining our MRO and technical support provided to A340 operators,” explained Safran Nacelles CEO Jean Paul Alary, while in Paris. “With Satair Group, we have found a partner that brings its logistic expertise to manage efficiently the supply chain.”

Speaking of big data, Rockwell Collins unveiled its solution to help airlines effectively manage larger data transmissions from the new Airbus A350 XWB aircraft to ground systems, Rockwell Collins has introduced a new, higher bandwidth, cost-efficient messaging service. The offering - ARINC GLOBALinkSM A350 Media Independent Aircraft Messaging (MIAM) service – will launch on Asiana Airlines this month.

“Next-generation aircraft like the Airbus A350 are transmitting significantly more data to the ground,” said Michael DiGeorge, VP, Commercial Aviation and Network Services at Rockwell Collins. “This new data, including electronic flight bag, maintenance and aircraft health information, is providing tremendous operational benefits. Our service allows airlines to cost-effectively take advantage of this new protocol, allowing avionics systems to more efficiently exchange larger messages than has been possible in the past.”



Satair Group has signed its first major contract with Safran.

Rockwell Collins was also named by Airbus as one of the top performing suppliers in support of Airbus and its customer airlines. The company received an Excellent In-Service Performance award and was honoured at a special ceremony at the Paris Air Show.

Inmarsat, provider of global mobile satellite communications, also announced a strategic partnership for its new European Aviation Network (EAN) inflight broadband service with Airbus. The package announced includes service bulletins and modification kit developed for advanced inflight broadband service, allowing installation on all Airbus A320 family aircraft.

As part of a collaborative agreement signed at the Paris Air Show, Airbus will offer airlines a specialist retrofit solution to deploy EAN on the entire A320 family of aircraft, including A319s, A320s and A321s, which form the backbone of many leading airline fleets.

The agreement marks a further milestone in the development of EAN; the world's first dedicated aviation connectivity solution to combine space-based and ground-based networks to deliver a seamless Wi-Fi experience for airline passengers throughout Europe. It follows a separate announcement earlier this year that International Airlines Group (IAG), the parent company of Aer Lingus, British Airways, Iberia and Vueling, will be the launch customer for EAN. IAG has begun equipping its aircraft with the ground-breaking service and aims to have 90% of its short haul fleet complete by early 2019.

The Airbus retrofit solution consists of modification kits with all cabin network equipment required for EAN deployment. It also includes service bulletins (SBs) that detail the tasks and materials needed for installation and also certify the airworthiness of related modification work.

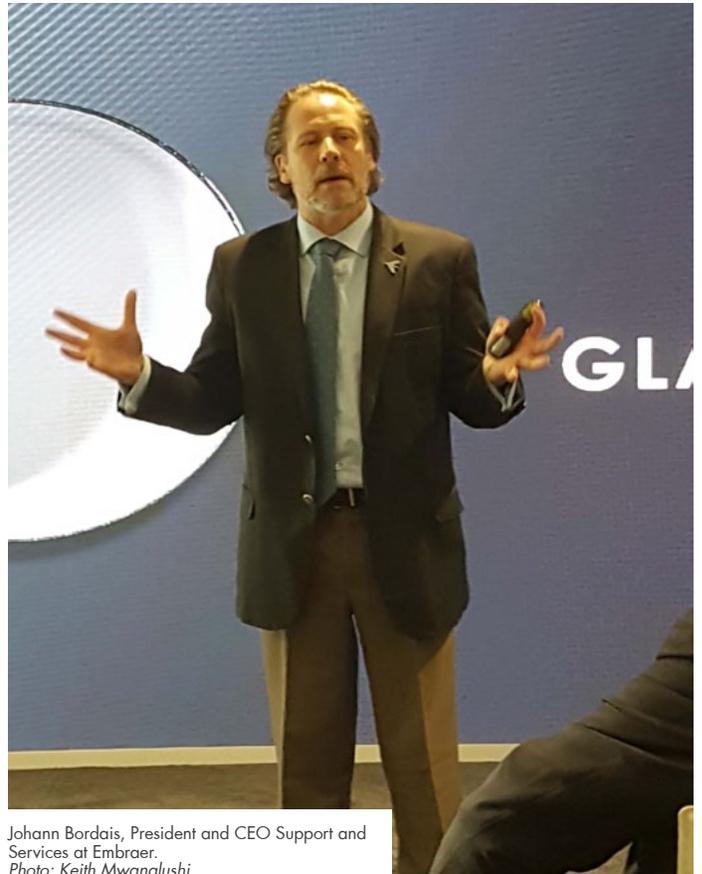
Airlines can procure the new solution directly through Airbus or Inmarsat, with both partners forecasting that more than 750 aircraft could be retrofitted with EAN over the next three years.

The partnership with Airbus marks a further key achievement for EAN. In addition to its function as an inflight broadband solution, the agreement also contains provisions for airlines to utilise EAN for advanced aircraft maintenance and operations management, leading to increased efficiencies and important cost reductions.

Leo Mondale, Inmarsat Aviation President, commented: "Our partnership with Airbus will offer clear advantages to airlines operating the popular A320 family aircraft. They will gain access to the new gold



Inmarsat are working with Airbus on broadband technologies.  
Photo: Keith Mwanalushi



Johann Bordais, President and CEO Support and Services at Embraer.  
Photo: Keith Mwanalushi

standard in passenger inflight broadband with a retrofit solution that comes from the aircraft manufacturer itself and has been specifically designed for ease-of-use. In addition to EAN's function as a high-speed inflight broadband service, our collaborative agreement with Airbus also opens the doors to streaming data on the aircraft maintenance and operations side."

Also announced in Paris, Air Mauritius and AFI KLM E&M signed an agreement covering Part 21 cabin modifications to six Airbus aircraft in the Air Mauritius fleet: two A319, two A330-200 and two A340-300. Under the terms of the contract, AFI KLM E&M will provide the programmes' design, engineering, documentation, certification, supply of certain materials, and airworthiness supervision components and will provide assistance services throughout the engineering process.

In addition to announcing significant orders from undisclosed customers for the new E2 programme, Brazilian OEM Embraer has officially entered the aftersales market with the opening of its fourth business unit, Services and Support – essentially selling the aircraft and also the support, in line with the growing trend across the entire OEM chain.

Embraer figures estimate the supported commercial fleet to be in excess of 2,400 aircraft from a customer base of 205 operators globally. Speaking to journalists at a press gathering in Paris Johann Bordais, President and CEO Support and Services at Embraer says this was an integrated solution it was offering customers.

"This is the fourth business solution that we have created. We believe that the OEM is the ultimate integrator. We are selling the airplane but we are also selling the services," Bordais reveals.



Embraer has launched a new service and support solution across its product range.  
Photo: Keith Mwanalushi

Bordais admits that like other manufacturers, it takes time to develop any aftersales services in the industry and that the previous strategy of putting service and support on different sides was a wrong decision.

Service and support activities are now a \$1 billion dollar business, Bordais says it makes up 15% of what Embraer generates as revenue yearly.

Commenting on why it has taken this long to enter the aftermarket Bordais acknowledges that it just wasn't the time. "We knew that before you do this type of thing, you need to be number one in customer satisfaction and that's what we have been doing for the last 15 years."

In terms of MRO, the OEM is developing its capacity with distribution centres around the world and Embraer owned service centres. Bordais recalls that 15 years ago MRO was not on the manufacturer's radar. "So this work would be done by the airlines, or the independents – the approved service centres. So now we decided, look, we are going to do this, and get into the business of MRO."

Embraer has since purchased OGMA, the Portuguese established and authorised maintenance centre and couple of other service centres in the U.S.

"We know what we are talking about because we are doing it. We operate as an operator, we think like an operator and that's good," he says.

Embraer has developed a significant authorised service network which total 77 for the whole service and support MRO approved by Embraer

in addition to its 10 owned MRO facilities. "We audit those guys every year to make sure they have the quality standards for Embraer."

The 2017 Paris Air Show certainly proved that the growing importance of the service sector to the supply chain is gaining momentum.



Embraer gave an update to journalists on the E2 programme.  
Photo: Keith Mwanalushi



All photos by Keith Mwanalushi





## Spreading wings



Werner recently acquired two E-190's aircraft.  
Photo: Werner Aero Services

**W**erner Aero Services, founded in 1993, is an aviation asset management company providing logistical solutions to airlines and MROs worldwide in the areas of aircraft, engines, APUs and components.

Its solutions are offered through specially designed options and its NIR-VANA platform. Werner's global headquarters is located in New Jersey, USA and a regional headquarters in Singapore oversees the Asia Pacific market. These centres provide marketing, logistics and operational support to customers. The company has additional marketing offices located in other countries around the world; it is truly a global business.

Werner Aero Services' core business is the asset management of engines, APUs, and aircraft rotables which include sales, leasing, pooling support and repair management, but it prides itself on providing exceptional customer service and working with its customers to develop customised solutions.

When Werner Aero Services originated, it became successful working with regional aircraft like Dash-8 and Fokker. Always looking forward and at market trends, in the mid-2000's it predicted a market shift and successfully developed its narrow body platforms to include Boeing 737 and Airbus A320 aircraft to the point where they are now the company's product focus.

Having successfully grown those businesses, Werner Aero Services recently announced its expansion into the new generation of the regional market to include the Embraer E-Jet series aircraft. The company recently announced its commitment for additional investments in this market with the mission to become a world leader in E-Jet aircraft solutions by the middle of 2018.

The regional business is a natural fit for Werner Aero Services as it has the experience of working with smaller markets and it understands the unique needs of E-Jet operators. Having just recently acquired two E-190's aircraft, Werner Aero Services has demonstrated its commitment to this market and is further planning more acquisitions to grow the business and its offerings in the E-Jet platform. Its focus on customer service and solutions appeal to smaller operators who value the personal attention and services Werner Aero Services offers.

Since 2013, Werner Aero Services has been experiencing significant growth in its engines, APU and nacelle businesses, accomplishing its objective to expand those platforms. Werner's offerings provide customers options in reducing these major capital expenditures and balance sheet burdens by developing customised, creative and "out of the box" solutions. It mainly supports engines such as CFM56-5, -7,

V2500A-5 and CF34-10 and APUs APS3200, APS2300, 131-9A and 131-9B. The company has been quickly growing these business units and has been successful in offering new services such as short term loans, leasing and pooling access. Today, loans and leasing revenue are an important part of the company's total revenue.

Nacelles are a natural offshoot of its successful engine business; Werner Aero Services offers leases and outright sales for nacelles installed on all engines it supports. Engine nacelles are another example of assets that airlines do not want to carry on its balance sheet due to their high acquisition cost. Leasing nacelles is a cost effective way to keep aircraft running without the financial burden. Werner Aero Services also offers a pooling option with access to loans and exchanges as well as repair services which offer major cost savings to customers.

This upcoming year is Werner Aero Services' 25th year in operation and its longevity and success can be attributed to its ability to read the market and develop products and services that meet the needs of airlines and MROs. As its founder and CEO, Mike Cazaz says, "We are in it for the long haul. I did not know what to expect when I started this business close to 25 years ago, but we are still as committed and motivated as we were on day one to provide the utmost in customer service and products our customers need. Our motto which we operate by is *Service is our priority. Solutions are our specialty.* I am proud of what we have accomplished so far and look forward to the next 25 years."

The company plans to continue its global growth, mainly organically, by investing in its product offering and additional personnel, and through potential acquisitions that will fit its strategy. The main product drivers will continue to be the narrow body aircraft and the new-generation regional market and its main key to success will continue to be excellent in service.



An E-190 during part out.  
Photo: Werner Aero Services



Jetstar scooped top spot in the International Commercial Aviation Category. All photos: Snap-on

The annual Aerospace Maintenance Competition is growing in popularity. **Steve Staedler** reports from Orlando, Florida where engineers and technicians were put through their paces.

At 19,000 and 9,000 miles roundtrip respectively, the teams from JetStar Engineering (Australia) and Flybe Aviation Services (United Kingdom) had some of the longest treks to Orlando, Florida. But it was worth every mile as they finished first and second in the International Commercial Aviation Category at the **Aerospace Maintenance Competition** presented by **Snap-on**.

"We are delighted to complete our new carbon neutral Hangar 8 development on time and on schedule," said Siegfried Axtmann, the group's Chairman. "We are also pleased to be bolstering our 60-strong engineering team with new local jobs in Nuremberg."

The competition, held this past April in conjunction with the MRO Americas Convention, is the industry's premier event for aircraft technicians and engineers. It provides certified AMTs from major airlines, MROs and OEMs, as well as military personnel and students enrolled in Part 147 curriculum, the chance to test their skills against their peers. More than 50 teams from around the world competed this year.

The competition included 24 challenges in areas such as avionics, safety wiring, fiber optics/flight control rigging, hydraulics, jet engine troubleshooting and other maintenance tasks. Teams had 15 minutes to accurately complete each task, with those finishing the quickest earning higher scores.

"The Aerospace Maintenance Competition is a venue that allows aircraft engineers, technicians and students from around the world to stand up and speak out about our craft," said Ken MacTiernan, Chair-

man of the Aerospace Maintenance Competition. "This event is important, because the industry and public have often taken for granted the men and women who are the true faces behind safety in aviation. After more than a hundred years of aviation history, these technicians deserve recognition for their knowledge, skill and integrity."

### JetStar Engineering

Comprising the winning team from JetStar Engineering were Nick Bond, Michael Paul, Pat Rached, Ron Raj, Shandramoha Sabaratham and team captain Cameron Maher. This is the second year in a row that JetStar Engineering has sent a team to compete in the event, and their first time winning the International Commercial Aviation Category.

"I'm very proud of our efforts here at the AMC," Maher said. "There are a few little things that we could have tweaked here or there, but we performed very well, and worked up to our expectations. I think Team JetStar did a fantastic job."

JetStar Group launched in Australia in 2004, and today encompasses four airlines operating more than 4,000 flights a week to more than 75 destinations across Australia, New Zealand, Asia and the Pacific. They fly the Boeing 787, Airbus A320 and A321, and the Bombardier Q300. JetStar Engineering Operations is responsible for ensuring the total airworthiness of its fleet of aircraft.



Flybe from the UK came in second place.

Australia was well represented at this year's competition, as Qantas and the Australian Licensed Aircraft Engineers Association also sent teams.

"It's good to have some fellow Aussies here to compete with," Maher said. All three teams joined MacTiernan in the center floor to kick off day two of the competition with the traditional Australian cheer of "Aussie Aussie Aussie, Oy Oy Oy!"

For the past two years, JetStar Engineering has selected new engineers to represent the team at the AMC, so they don't necessarily have a lot of time to practice together. Bond is based in Auckland, New Zealand, while the others are from Australia: Rached is based in Coolangatta, Queensland; Raj and Sabaratham are based in Melbourne; and Paul and Maher are based in Newcastle.

"It is quite a competitive selection process just to make it on the JetStar team. You put your name forward and your managers make selections from there on," Maher said. "It's not just us who are talented at JetStar, all the guys across our JetStar Engineering network are fantastic engineers. We also had some very skilled employees who helped with the training process, to put us in the best position possible for the competition. We have a great 'One Team' culture at JetStar, which was reflected in our results. We had brilliant guys last year in our first year, and the team was motivated to come back and do better. The guys that come next year will be just as skilled and ready to go as we were."

While competition is the name of the game, the real takeaway is the camaraderie among the teams. Maher said they took the student team from Mohawk Valley Community College (Rome, New York) under their wing and mentored them during the competition. Last year, they did the same with the team from Pittsburgh (Pennsylvania) Institute of Aeronautics.

"Just to collaborate with them and lift their spirit levels when they're down, and guide them through what they have to do, is a fantastic thing," Maher said. "They are a great bunch of guys and we wish them the best in the future."

"My advice to students who aren't in aviation is to test yourself and give it a try," Raj said. "If you think you've got the skills, if you think you like challenging stuff, then this is the place to be. It's a great industry to be in."

The Aerospace Maintenance Competition Presented by Snap-on is a

great networking event for teams to establish connections and form friendships long after the competition has ended.

"The AMC gives us a chance to interact with other airlines that we normally wouldn't see. We have similar roles around the world. It's good to have a chat and see what their job entails, find the similarities and share different ideas," Rached said.

"This event is getting bigger and better every year, and Ken and John Goglia (president of the Aerospace Maintenance Council), and Snap-on put on a fantastic show and we hope to be back next year. This event is praised by everyone who comes," Maher added.

### Flybe Aviation Services

This was the first year Flybe Aviation Services entered a team in the Aerospace Maintenance Competition. Flybe is Europe's largest regional airline, operating 59 Bombardier Q400, 20 Embraer 175 and 190, and five ATR 72 jet and turbo jet aircraft on 232 routes serving 15 countries.

Flybe encouraged its more than 400 technicians and engineers throughout the United Kingdom to apply for one of the coveted spots, and in



Teams had 15 minutes to accurately complete each task.



The competition included 24 challenges in areas such as avionics.

January selected Andy Messom, Simon Tooze, Joel Denton, Ashley Goodliffe and Luke Thomas to represent the company in Orlando.

"I had heard of the event previously, but never thought much about it until our company inspired us to apply," said Thomas, who was chosen as the team captain. "After we were selected, we tried to prepare as much as we could; we were definitely excited about participating."

Thomas and his teammates, who work out of Flybe Aviation Services' maintenance hub at Exeter International Airport, said they were excited to get started and let their skills and training take over.

"It was great fun; I didn't think it would be as fun as it was, actually," Tooze said following the competition. "I thought it was going to be a lot more stressful, but after we completed the first challenge and got into our routine, we were good."

"The competition covers such a broad range of skills, and the tasks cover a lot of different trades, so therefore, some of us are more used to doing wheel changes, while others more of the hands-on tasks. So, I was quite interested in having a go at that and see how we fared," Messom added.

The team fared well, earning second-place finishes in both the international and MRO/OEM categories. Messom and Tooze also set the second fastest time in the fuel tank entry event.

In addition to their second-place trophy, the team also took home a newfound sense of camaraderie with other teams from around the world.

"It's good to get some outside perspective; see what else is going on in the industry," Thomas said. "We work within our house facility, but you really don't know what everyone is doing, or whether you're all heading in the same direction until you come to an event like the AMC. It's been brilliant getting that feedback from other people."

"It was really interesting to speak to other people and see what opportunities are out there within our industry," Tooze added. "It's quite nice to see how our future could potentially go in one direction or another."

Thomas said he was particularly proud of teammates Denton and Goodliffe, as they completed nearly all of their certification licenses as part of Flybe's engineering apprenticeship programme. Flybe's Aeronautical Apprenticeship is a four-year programme leading to a Level 3 Diploma in aviation maintenance, and an EASA Category A License is delivered at the Flybe Training Academy and Maintenance Repair Organization.

"Both Denton and Goodliffe are a product of our training school, and they're great. Some of our best engineers have come through it," Thomas said. "We have so much potential as a company, and we have an absolutely fantastic group of people we work with."

Participating in the Aerospace Maintenance Competition Presented by Snap-on is yet another reason why exciting things are happening at Flybe.

"Our overall impression of the AMC is absolutely incredible," Thomas said. "You never know what to expect when you show up. But it was great. Everyone was very friendly, very welcoming. It was a nice atmosphere."

"It's nice to see so much enthusiasm in our area of the industry where we work. Being recognized and celebrated is great. Hopefully, we'll be back next year," Denton added.

*Steve Staedler is a senior account executive at LePoidevin Marketing, a Brookfield, Wisconsin-based business-to-business marketing firm that specialises in the tooling and aerospace industries. Steve has been covering aeronautical maintenance for nearly 10 years; is a former newspaper reporter and retired master sergeant from the U.S. Air Force Reserve, where he worked maintenance and public affairs. He can be reached at [steve@lepoidevinmarketing.com](mailto:steve@lepoidevinmarketing.com); 262-754-9550; [www.lepoidevinmarketing.com](http://www.lepoidevinmarketing.com).*

# Dissecting predictive maintenance

Airlines utilising predictive analysis report a significant decrease in maintenance costs.  
Photo: Lufthansa Technik

**Panagiotis Poligenis**, Associate Partner, at Lufthansa Consulting looks at how this process is enabling increased aircraft reliability and reducing airlines' operating costs.

It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change. This essential message of On the Origin of Species, Charles Darwin's theory of evolution, is a statement that airlines and MRO providers ought to incorporate in their strategy. In times of advanced digitalisation technologies and big data, most of those organizations still adopt either a preventive or a reactive approach to maintenance events. Those who deliberately opt for predictive maintenance based on the technical data of their fleets are tomorrow's winners.

The two main schemes in place today have shown their limitations: while the reactive approach involves replacing a component only after it has failed, thus incurring associated costs and often AOG (Aircraft On Ground) time, the preventive approach stipulates that life-limited parts must be replaced at established intervals, which might be too soon or at times too late. The costs associated with those two schemes can consume up to 20% of an airline's operating costs.

The predictive maintenance approach combines CBM (Condition-Based Monitoring) and data driven prognostics. By comparing data and trends collected in real-time with historical data and definitions of optimal measurements, the predictive models identify anomalies and the root causes of failures.

## The decisive advantages of predictive maintenance

- Airlines utilising predictive analysis report a significant decrease of

their maintenance costs. In fact, the early effective warnings issued by the system monitoring the health of their fleet in real time, together with the data prognostics, enable them to replace the defective parts or system and take maintenance action only when the life cycle of the unit has been reached or when system deterioration is the root cause. Proper alignment of resources is a useful outcome for MRO. The airline's priority is to lower the missed alarm rate in order to react effectively at a given time.

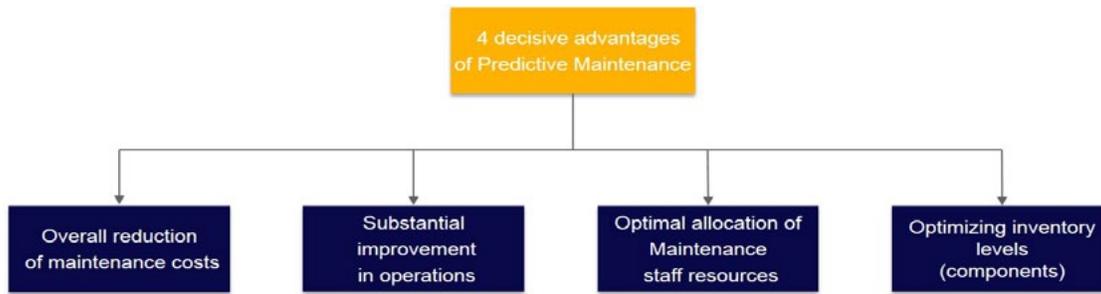
- Predictive maintenance strategy for MRO departments aims to identify the real drivers of performance amongst a tremendous amount of data and internal KPIs, which prevent ad-hoc maintenance action. These indicators are used to initiate optimal maintenance schedules, updated in real-time, which allow maintenance resources to fix defects more efficiently while increasing aircraft utilisation.

- Predictive solutions based on CBM and data-driven prognostics enable inventory managers to create models that score inventory levels for each component, thus allowing them to identify repairable or consumable parts that are likely to be out of stock. This improves availability of the rotatable and expendable inventory, and reduces inventory costs.



Panagiotis Poligenis, Associate Partner at Lufthansa Consulting

Addressing and quantifying positive impact of a profound predictive maintenance system is what matters



The predictive maintenance approach reduces the need for costly unscheduled maintenance, avoids unforeseen costs due to unplanned downtimes and maximizes operation time. Although this has provided tremendous benefits, airlines and MRO providers still face major barriers to implementing this strategy.

**Barriers to implementing predictive maintenance**

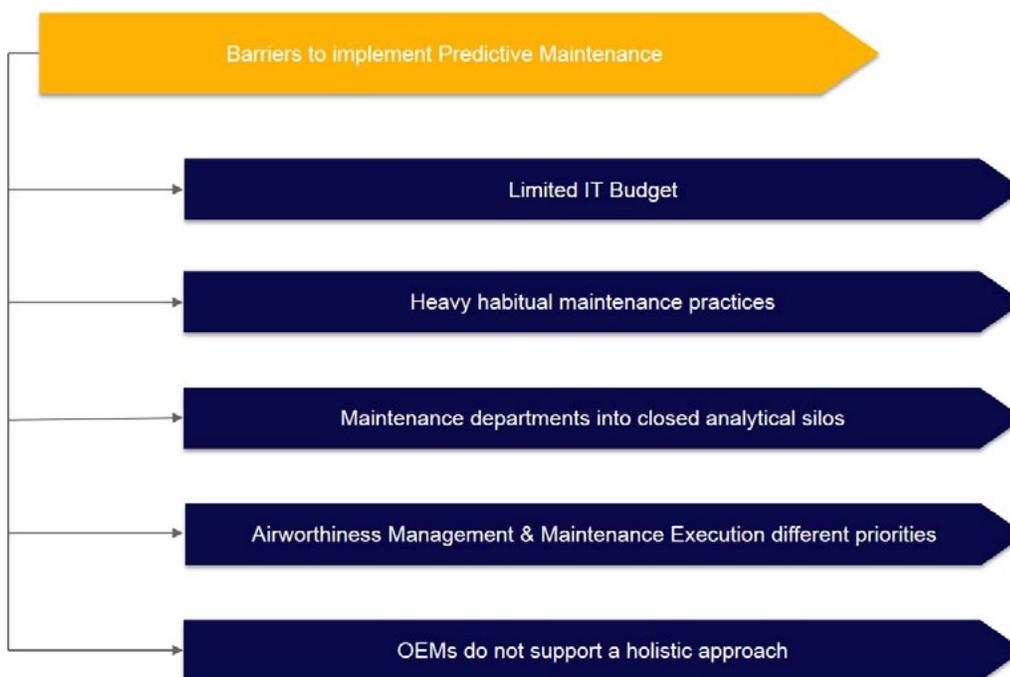
- Airlines and MRO companies with a limited IT budget rather stick to expenses sustaining their current systems instead of investing in advanced technologies. Investments in new technologies are often much larger than investments aimed at improving the existing corporate backbone.
- Maintenance and reliability engineers are bound by burdensome maintenance practices, involving the time-consuming calculation and analysis of indicators without any real impact. The cumbersome nature of current habitual maintenance procedures prevents them from actively initiating enhanced maintenance practices that combine health monitoring and prognostics.

- Different maintenance departments and processes are usually embedded in closed analytical silos, mining and processing data for their own objectives and following their own data management rules. Employees are therefore not encouraged to engage in enhanced decision-making through predictive maintenance practices.

- Airworthiness management (engineering department) and maintenance execution (MRO) often struggle to align their visions of best practices with the performance optimisation of their current maintenance processes. These two parties need to work jointly to develop advanced maintenance solutions; overcoming those existing barriers is thus a key prerequisite for defining a new strategy based on predictive maintenance.

- Some key elements of the CBM solutions are, however, unlikely to extend beyond their own system. While most OEMs focus on offering advanced engine condition monitoring solutions, aircraft manufacturers have developed systems that are geared towards their own airframe. In this landscape, aircraft operators struggle to develop an integrated solution that will create advantages for the entire fleet. The OEMs, by encrypting the data to monetise their solutions, do not facilitate the development of a holistic approach.

**Introducing predictive maintenance means to meet a number of challenges**



Despite these limitations, most airlines already have the necessary data available to take the leap towards predictive maintenance, thanks to the high amount of data generated by sensors and monitoring devices. Implementing CBM and using data prognostics for the maintenance organization can be challenging due to resource constraints. What they need is a clear roadmap and implementation strategy.

### The roadmap towards predictive maintenance

- First of all, any stakeholders involved in the maintenance process, including vendors and IT system providers, need to be identified. Furthermore, without a capable system provider, an efficient management of predictive maintenance is not feasible
- Next, all components / systems that need to be closely monitored must be evaluated. Components / systems that are the most critical to operations. “No-go items” for which any failure could result in an AOG should be included, such as components / systems with a strong history of failure and the associated heavy costs.
- A robust data acquisition layer must be developed so that real-time physical characteristics (e.g. vibration, temperature or pressure etc.)

are transmitted through wireless sensor systems or communication technologies such as ACARS or SATCOM. Data volume, frequency and sensibility as well as cost impact should be considered in order to choose the most adaptable solution for data transmission, processing and data alignment from multiple devices. Additionally, data storage capabilities need to be taken into consideration.

- After the vast amount of unstructured data has been transmitted and segregated, it enters the testing phase. Alongside CBM, the predictive system is based on sophisticated mathematical prognostics that emphasise leading indicators of failures and compare real-time data against historical trends. Key outputs of this system are the detection of abnormalities and a time-phased estimated probability of failure.
- The system must be configured in such way that when a defect is forecast, a case is automatically created and an alert generated as soon as possible so that the airline and the MRO company have time to further process and execute a maintenance action. The most appropriate solution should be automatically proposed or quickly deduced by engineers responsible for monitoring the indicators. On the basis of their analysis, maintenance teams receive engineering orders that a maintenance action is needed in order to avoid any further operational consequences.

### Implementing a smooth predictive maintenance system needs much more than a “one size fits all” solution



The predictive strategy must be customized to the specific needs of the airline / MRO.

### A tailored solution

- Mathematical models of the predictive system should be customised for the company (airline/ MRO) and fine-tuned over time. The component or aircraft system performance evolves along its life cycle. The objective is to create models that are capable of detecting all upcoming defects but not sensitive to the point at which they would generate false alerts. In order to avoid the generation of false alerts, the monitoring process has to be calibrated.
- Predictive modeling outcomes can incorporate other useful business information. For example, by analysing financial data with sensor data, the business impact of various potential failures can be assessed, and maintenance alerts prioritized appropriately.
- The predictive maintenance approach leads to greater integration in the establishment of a “data democracy”: virtually any collaborative team or employee should be able to access a web-based interface that consolidates data sources from multiple monitoring systems as well as, for example, maintenance schedules, in order to make data-enhanced decisions. Data from sensors must be combined with the MRO ERP, in a reliability-centric enterprise data model.
- Aircraft operators and MRO companies must preserve full rights to their data, including the option to share it with their suppliers. The system must also be firmly protected against any third-party influence

or theft. The processing of data in the monitoring devices themselves or data transmission to the ground are the major points of security vulnerabilities. Data and information can be secured with encrypting algorithms. After the data has been aggregated, security can be ensured through the implementation of a trusted platform module.

Lufthansa Consulting focuses on helping their clients to embrace the power of analytics to improve their maintenance processes. The structured approach enables our clients to implement such a strategy and encourages them to take the leap towards a high level of correct maintenance decisions, made rapidly and involving less expense, and ultimately to increase the longevity and reliability of their assets and raise their operational profitability. With the support of Lufthansa Consulting, you too can take the bold step towards Predictive Maintenance, a truly competitive method for airlines and MRO companies.



Michael Ryan

Bombardier has appointed **Michael Ryan** as President, Aerostructures and Engineering Services, effective July 1, 2017. Mr. Ryan, who previously served as Vice President and General Manager of Bombardier's Belfast Aerostructures facility, will succeed **Jean Séguin** who is retiring after a very successful 36-year career with Bombardier. Mr. Ryan will report directly to **Alain Bellemare**, President and Chief Executive Officer, Bombardier.



Jean-Marc Lenz



Michael Sattler

SR Technics has appointed **Jean-Marc Lenz** as Chief Operating Officer and Accountable Manager, and **Michael Sattler** as Chief Commercial Officer, effective as of June 1, 2017. Jean-Marc will succeed **Frank Walschot**, who has joined HNA Group.



Tim Behmlander



Reiner Stamm



Dave Morris

PPG has named **Tim Behmlander** aerospace general manager for the Americas, and **Reiner Stamm** to succeed him as aerospace general manager for the Europe, Middle East and Africa regions. Behmlander replaces **Dave Morris**, who retires July 1, as aerospace vice-president and general manager for the Americas after nearly 50 years in the aerospace industry. In their new positions, Behmlander continues as a member of PPG's aerospace leadership team, and Stamm joins both the company's aerospace and EMEA-region leadership teams.

TP Aerospace has appointed **Frank Rott** as the new Managing Director of the facility in Germany and Global Chief Operations Officer of TP Aerospace Technics. Rott comes from a position as CEO and Accountable Manager EASA Part-145 and Part-147 at Haitec Aircraft Maintenance GmbH. Throughout his career, Rott has held positions within companies such as LTU, Rolls-Royce and Air Berlin, through which he has acquired extensive technical knowledge. He will be located at TP Aerospace's office in Quickborn, Germany, but will be responsible for all global MRO activities.

Rolls-Royce has appointed **Ben Fidler** into the new senior leadership role of Director, Group Financial Planning & Analysis, reporting to Chief Financial Officer Stephen Daintith. Fidler, presently an Aerospace and Defence Analyst with Deutsche Bank, will take up his new appointment at the beginning of September 2017 and will have responsibility for management reporting, forecasting, budgeting and long-term planning.

AeroCentury, an independent aircraft leasing company, has reported that **Karen Rogge** has been appointed to its Board of Directors, effective immediately. Ms. Rogge has executive, financial and operations management experience with leading public technology companies including Hewlett Packard, Seagate Technology, and Extreme Networks, as well as private companies. She is President of the RYN Group LLC, a management consulting business, providing CFO and strategic advisory services for public and private companies.

GA Telesis has appointed **Marc Cho** as its Chief Investment Officer. In his new role, Mr. Cho will entail oversight of GA Telesis Capital Management as well as managing and monitoring the company's portfolio of assets, devising strategies for capital and growth, while also managing risk. Furthermore, he will act as the direct liaison with investors.



Carlos Ordonez

C&L Aerospace has appointed **Carlos Ordonez**, former VP of Sales for Aeronautical Investments, as Director of Business Development for Latin America. Ordonez has two decades of aerospace experience in the Latin American region. "I am very excited to have Carlos join our sales and marketing team utilizing his vast Latin America market knowledge and providing comprehensive solutions to regional, corporate and military operators throughout the region," said **Martin Cooper**, C&L Senior Vice-President of Sales.

In its efforts to strengthen its team to better serve customers in APAC, Sabre Corporation made two significant leadership appointments this week. **Axel Bench** is appointed as Regional Director – Asia, and will be responsible for South Asia, North Asia and Southeast Asia. In conjunction with this appointment, the Sabre Airline Solutions business in the APAC region will be restructured into three regions: South Asia, North Asia and Southeast Asia led by **Axel Bench**, Pacific region and Japan led by **Scott Barratt**, and Mainland China led by **Peter Wu**. **Clayton Grant** has been appointed Senior Account Director for Singapore, Malaysia, Indonesia and Brunei.



Tim Brecher

**Tim Brecher**, formerly of GE Aviation Materials, has joined C&L Aviation Group as President of C&L Engine Solutions. C&L Engine Solutions specializes in large and small corporate and commercial engine transitions, including trading, leasing and acquisition of assets.