

# MRO

AVITRADER<sup>TM</sup>  
publications

April 2020 - [www.avitrader.com](http://www.avitrader.com)

## Structural repairs & modifications

In focus:  
Magellan Aviation Group

Q&A:  
WinAir

MRO News  
from around the world

People on the Move  
latest appointments

Follow us on  
 [twitter](#)

Follow us on  
 [LinkedIn](#)

# AVI TRADER MRO

## Published monthly by

AviTrader Publications Corp.  
Suite 305, South Tower  
5811 Cooney Road  
Richmond, British Columbia  
V6X 3M1  
Canada

Email: [p.jorssen@avitrader.com](mailto:p.jorssen@avitrader.com)  
Tel: +1 (424) 644-6996  
[www.avitrader.com](http://www.avitrader.com)

## Editorial

Email: [keith@aeropublications.co.uk](mailto:keith@aeropublications.co.uk)  
Mobile: +44 (0) 7871 769 151

## Design

Volker Dannenmann,  
Layout & Design  
Email: [volker@dannenmann.com](mailto:volker@dannenmann.com)  
Mobile: +49 (0) 711 46910151

## Advertising inquiries

Tamar Jorssen  
VP Sales & Business Development  
Email: [tamar.jorssen@avitrader.com](mailto:tamar.jorssen@avitrader.com)  
Toll free: +1 (833) 258 8543  
Mobile: +1 (778) 213 8543

## Registration

AviTrader MRO is a subscription-free monthly publication.

To receive a personal copy in your inbox every month,  
**please [click here](#)** to subscribe.

## Opinion

Please send your comments  
and queries to  
[keith@aeropublications.co.uk](mailto:keith@aeropublications.co.uk)



## MROs brace for impact

The impact of Covid-19 is no doubt spreading to every sector of the aerospace industry. The maintenance sector is already suffering from the decline in air traffic and MROs big and small are having to significantly adjust their operations due to the unprecedented knock-on effects.

In March Lufthansa Technik indicated that once the full extent of the crisis is measured, the initial impact would be "massive." After reporting record revenue and earnings in 2019, the MRO provider warned that looking ahead, much would depend on the duration of the crisis and how customers will recover from it. Lufthansa Technik is one of several MROs that have prepared a comprehensive package of measures.

In the United States, the aviation industry will benefit from the much-anticipated Coronavirus Aid, Relief, and Economic Security (CARES) Act in terms of grants and loans. As JetBlue's CEO stated this historic legislation is an important step for those affected by this pandemic. It means airlines can continue to provide critical air service throughout this crisis. Part 135 certificated charter operators

and Part 145 MRO businesses are included in the package. However, getting that support timely will be crucial.

In some positive news, MTU Aero Engines has announced a gradual restart of operations at its German sites. Capacities will be increased according to demand and the situation in the supply chain. In the week from April 20, around 20% of employees are expected to be working. In the following weeks, the volume of work will further increase gradually.

The restart at MTU Maintenance's facilities in Hannover and Berlin will commence on April 27.

It is essential that MROs and the supply chain implement and apply organisational and technical measures to prevent corona infections throughout the restart of operations, as have MTU, ensuring high standards of health protection are maintained for employees at facilities.

Keith Mwanalushi  
Editor



Photo: Airbus

## Contents

MRO and Production News .....	4
Finance News .....	14
Other News .....	18
Cover story: Heavy structural repairs and modifications .....	19
Company profile: Magellan Aviation Group .....	22
Industry Interview: Kyle Vergeer, Managing Director, WinAir .....	24
People on the Move .....	26

# INVENTORY LEASING SOLUTION



Have Millions Tied Up  
On Your Shelves?

Let GA Telesis Help!

- Conserve Operating Capital
- Preserve Credit Availability
- Improve Cash Flow
- Eliminate Residual Risk

Contact: [inventorylease@gatelesis.com](mailto:inventorylease@gatelesis.com)



Photo: Lufthansa Technik

### Lufthansa Technik agrees on short-time working

Lufthansa Technik AG has reached an agreement with the bodies of co-determination and its operating partners to introduce short-time working. This applies to all German sites and companies with the exception of Lufthansa Technik AERO Alzey (LTAA) and Lufthansa Bombardier Aviation Services (LBAS). The agreement thus applies to around 12,000 employees and will initially run until August 31, 2020. The scope of short-time working for employees is determined in relation to the loss of working hours and in consultation with the co-determination bodies responsible for the respective area. The loss of working hours and thus short-time working can amount to up to 100%. In order to keep the financial impact on employees as low as possible, Lufthansa Technik will initially top up the short-time working allowance paid by the Federal Employment Agency to 90% of the net salary lost through short-time working. This regulation applies to both tariff and non-tariff staff. Managerial staff will also be put on short-time work due to the extensive reduction in workload. Lufthansa Technik AG will top up their short-time working allowance to 80% of their net salary. These employees had already voluntarily waived part of their salary. Wherever possible in the respective countries, more than 30 international subsidiaries and affiliates of the Lufthansa Technik Group will seek similar arrangements.

### Spirit halts production for Boeing programs at facilities in Wichita, Kansas, Tulsa and McAlester, Oklahoma

Spirit AeroSystems has announced a series of additional actions the company is taking to reduce costs and preserve liquidity in light of the economic impacts of the COVID-19 pandemic and continued uncertainty in the industry. On

April 6, Spirit AeroSystems received notice from Boeing that all deliveries to Boeing's Washington state and South Carolina facilities are suspended until further notice due to Boeing's indefinite production suspension at the sites. As a result, Spirit has halted production for Boeing programs, subject to certain exceptions, performed at its facilities in Wichita, Kansas, and in Tulsa and McAlester, Oklahoma for an indefinite period of time. Spirit Defense work, as well as Airbus and other non-Boeing work, will continue at such facilities. In light of the 737 MAX production suspension that began on January 1, 2020, Spirit initiated the following actions to reduce costs: the company implemented workforce reductions of 2,800 employees in Wichita, Kansas and 400 employees in Oklahoma and initiated a voluntary retirement program for 850 hourly and salaried workers. Furthermore, Spirit deferred over US\$120 million of capital expenditures and extended union contracts for employees represented by the IAM and IBEW for three years. The company negotiated an amendment to its credit facility providing for covenant

relief into 2021 and secured a US\$375 million short-term delayed draw term loan facility. Spirit reduced its cash dividend to a penny per share and Spirit negotiated a new production agreement with Boeing and extended the MAX contract by three years to 2033. The company received a US\$225 million advance from Boeing and deferred repayment of a US\$123 million advance from Boeing to 2022.

### Magnetic MRO offers temporary passenger aircraft cabin modifications

Magnetic MRO, a Total Technical Care and asset management organization, is reacting to the current situation in the aviation market and announced the company's readiness to provide temporary cabin modifications. Considering the COVID-19 crisis and reflecting the changing needs of airlines, the company's DOA (EASA Part 21J) team is ready to provide its customers with cabin modifications for COVID-19 medical cargo transportation in primarily passenger cabin aircraft. Magnetic MRO has the certification and experience in providing both types of modifications that are allowed by the European Union Aviation Safety Agency (EASA). One modification option can be done while leaving the seats and fixing cargo boxes on them with the special straps, meanwhile the second option allows the removal of seats, leaving 0 PAX LOPA with change to type of operations. In addition, Magnetic MRO DOA holds STC and can also provide cabin modification for medical stretcher installation on various aircraft types, including A321 Family aircraft, B737-800, B747-400, B777-300 aircraft, ATR aircraft and others. Such modification can support airlines to utilize their passenger cabin fleet in relation to COVID-19 medical assistance requirements.



Magnetic MRO offers temporary cabin modifications  
Photo: Magnetic MRO



Danobat mBTG-800 High Speed Blade Tip Grinding Machine  
Photo: Aero Norway

### Aero Norway invests US\$1.5 million in state-of-the-art high-speed grinder

Aero Norway, the independent engine MRO provider and trusted partner for customers operating CFM56-3, CFM56-5B and -7B engines, has invested US\$1.5 million in a new state-of-the-art high-speed grinder. The purchase of this specialist machine will ensure stable and efficient turn-around times are maintained and that the services Aero Norway's customers are being offered remain at the forefront of engine MRO-technology capabilities. The Danobat mBTG-800 High Speed Blade Tip Grinding Machine is manufactured for the precision grinding, deburring and measuring of the blade tips of finished assembled engine turbine and APU rotors. "The investment of US\$1.5 million in this piece of equipment allows us to grind the rotor blade tips whilst they are being spun at high speed. This presents the blades to the grinding wheel as they would be if they were in operation," says Glenford Marston, CEO of Aero Norway. "We pride ourselves on being at the forefront of engine MRO and the purchase of this machine ensures that we can offer the highest degree of accuracy possible with current technologies on blade tip grinding." Currently the machine is being used on every engine core performance work scope and is the only system approved by the OEM. The operation of the grinder is fully automatic and features all-digital technology to ensure the integrity of the system.



## Global Aircraft Inventory Solutions



### STRATEGIC STOCK LOCATIONS ACROSS THE GLOBE

US (3), UK, Ireland, Singapore, Shanghai, Dubai & Hong Kong



### OEM DISTRIBUTION PARTNERSHIPS COVERING 32 DIFFERENT PRODUCT LINES



### VENDOR MANAGED INVENTORY (VMI) PROGRAMS PROVEN TO INCREASE COST SAVINGS THROUGHOUT SUPPLY CHAIN



### MRO BUSINESS PARTNERSHIPS WITH FAA/EASA APPROVED REPAIR CAPABILITIES



24/7/365



FAA/EASA

TEL: 1-888-777-2960 • INTL: 001-561-214-6508 • LIVE AOG: 1-888-8STSAOG • EMAIL: SALES@STS-CS.COM



Universal Avionics assists Hope Worldwide to manufacture medical face masks and shields  
Photo: UA

### Universal Avionics opens doors to aid workers for COVID-19 face mask and shield assembly

Universal Avionics is assisting the local Tucson community in protecting healthcare workers and first responders during the COVID-19 pandemic. The company is currently providing the non-profit group, Hope Worldwide (Tucson Chapter), with assembly line space at its Tucson headquarters to manufacture medical face masks and shields. "This plan was developed in coordination with the University of Arizona, City of Tucson, Pima County, and the Arizona Technology Council, and is a great example of our community coming together," said Steve Pagnucco, Vice President of Operations at Universal Avionics. "Within one week of reaching out to our partners to see how we could help, we had an assembly line safely set up to produce much needed personal protective equipment," he added. "On behalf of Universal Avionics, I would like to thank everyone involved for their incredible responsiveness, cooperation, and teamwork."

## We've got you covered from take off to landing & beyond

### Your One-Stop-Shop:

- > 24/7/365 AOG
- > OEM Distribution
- > Leasing & Trading
- > Technical Services
- > On-Wing support
- > Airframe & Engine Parts supplier

UNITED STATES | United Kingdom | France | Germany | Singapore | China  
Email: [info@kellstromaerospace.com](mailto:info@kellstromaerospace.com) AOG Support: +1.847.233.5800



**Kellstrom  
Aerospace**



Boeing 737-800 conversion  
Photo: IAI

### FAA and CAAL certify IAI's conversion of Boeing B737-800 aircraft from passenger to freighter configuration

Israel Aerospace Industries (IAI) has reported that the Federal Aviation Administration (FAA) of the United States and the Civil Aviation Authority of Israel (CAAL) have certified IAI's Aviation Group's conversion of Boeing B737-800 aircraft from passenger to cargo configuration. The Aviation Group has now delivered the first two converted aircraft of this model. With the COVID-19 crisis forcing many airlines into halting passenger service, the demand for cargo flights, crucial to the delivery of medical supplies, medicines, food, and other necessary equipment, has been rising. Founded in January 2019, the Aviation Group consolidated all of IAI's activities involving manned aircraft, both military and civilian, into one business unit. It is one of the few facilities in the world that specializes in converting passenger aircraft into cargo configuration. The Group handles both wide-body and narrow-body aircraft, which are operated by some of the world's largest shipping companies, such as Amazon and DHL.

### Airbus is revising production rates downwards

Airbus is revising its production rates downwards to adapt to the new coronavirus market environment. In the first quarter of 2020, Airbus booked 290 net commercial aircraft orders and delivered 122 aircraft. A further 60 aircraft were produced during the quarter, which remain undelivered due to the evolving COVID-19 pandemic. 36 aircraft were delivered in March across the different aircraft families, down from 55 in February 2020. This reflects customer requests to defer deliveries as well as other factors related to the ongoing COVID-19 pandemic. The

new average production rates going forward are: A320 at 40 per month, A330 at two per month, and A350 at six per month. This represents a reduction of the pre-coronavirus average rates of roughly one third. With these new rates, Airbus preserves its ability to meet customer demand while protecting its ability to further adapt as the global market evolves.

### AAR and Sumitomo Corporation launch joint venture

AAR, a leading aviation services provider to commercial airlines and governments worldwide, and Sumitomo Corporation, a top Japanese trading company, are launching a joint venture - AAR Sumisho Aviation Services. This Chicago-area-based joint venture will distribute aircraft parts and offer aviation logistics management solutions to the Japanese defense market. Additionally, the partnership will distribute parts from OEMs based in Japan to the global aviation aftermarket. This business

initiative builds upon the parties' successful, long-standing relationship, under which AAR has served as a stocking distributor for OEM factory-new parts to Japanese defense customers via Sumitomo Corporation since 2012. "We look forward to partnering with AAR to serve our Japanese customers and make our services more accessible to customers around the world," said Eiji Ishida, Sumitomo Corporation Executive Officer and GM of the Lease, Ship & Aerospace Business Division.

### J&C Aero and Colibri Aero develop first EASA-certified commercial Cargo Seat Bags for Airbus passenger cabins

Colibri Aero, an international supplier of aircraft parts and interior solutions, together with J&C Aero, an international aircraft design and production organization, have developed universal Cargo Seat Bags for commercial and humanitarian cargo transportation inside Airbus A319/A320/A321 passenger cabins. The newly developed interior modification kit has already been approved by the European Aviation Safety Agency (EASA) and has received its Supplemental Type Certificate (STC). The Cargo Seat Bag comes as a spacious 76x76x147 cm (30x30x58 inches) kit for a triple seat, with up to 75 kg (165 lbs) of cargo to be stored on the seat and additional 9 kg – under the seat, totaling 252 kg (555 lbs) per triple seat block. The kit can be easily installed in just a few minutes and can include a wide range of cargo types, from postal correspondence, household goods, electronics and other commercial cargo to medical equipment and other kinds of humanitarian supplies. The kits are developed in compliance with structural integrity, fire protection, and emergency evacuation requirements.

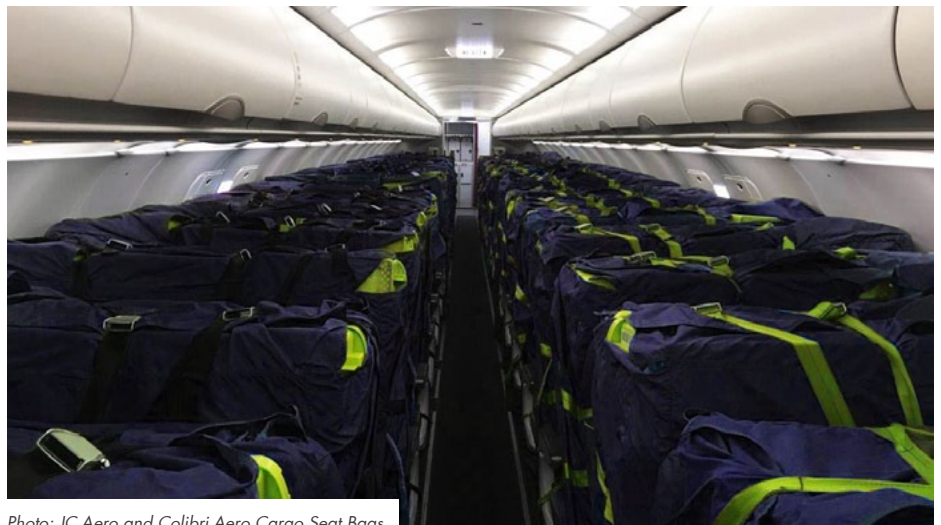


Photo: JC Aero and Colibri Aero Cargo Seat Bags



*Quality, We Commit, We Deliver.*

*精心呵护，赢得全球信赖*

GAMECO is the leading Part 145 MRO provider in the People's Republic of China jointly approved by CAAC, FAA, and EASA, providing an extensive range of MRO services for B737, B747, B757, B767, B777, B787, A300, A310, A320, A330, A350, A380 and EMB 145 & EMB 190 operators in the Asia-Pacific region and worldwide.

Based at the Baiyun International Airport in Guangzhou, the People's Republic of China, GAMECO today has a four bay wide-body hangar and an eight bay narrow-body hangar. GAMECO is a joint venture between China Southern Airlines Co. Ltd. (CSN)(50%) and Hutchison Whampoa (China) Ltd. (HWCL)(50%) from Hong Kong, specializing in aircraft and airborne component maintenance, repair and overhaul. To learn more about GAMECO.

please visit [www.gameco.com.cn](http://www.gameco.com.cn).



Air Baltic's A220 Extended Door Trainer  
Photo: EDM

### EDM installs Air Baltic's A220 Extended Door Trainer in Riga, Latvia

EDM, a global provider of training simulators to the civil aviation and defense sectors, has completed a project for Air Baltic's A220 Extended Door Trainer, which has been fully installed at the airline's training facility in Riga, Latvia. EDM was tasked by airBaltic to develop its new A220 Extended Door Trainer in response to the airline acquiring its new Airbus A220 fleet. This simulator will enable the airline to train its cabin crew and certify them to the new aircraft type. The Extended Door Trainer is fitted with key features to help simulate a number of scenarios that helps practice everyday functionality, but also for emergency situations.

### Aircraft Solutions USA's plan to build aircraft recycling facility in North Carolina now underway

Aircraft Solutions USA, a leading provider of sustainable end-to-end aircraft recycling solutions, is moving forward with its plan to build an aircraft recycling facility at North Carolina's Global TransPark in Kinston. The construction start has been delayed due to the COVID-19 pandemic, but the facility is still slated to be operational by the second quarter of 2021. It will consist of one of the world's largest hangars which will include dismantling, MRO and painting operations. "We are making some critical hires, including our interim CEO and our Head of Innovations, and are looking to start construction this summer," said Sven Daniel Koechler, PhD, General Manager of Aircraft Solutions USA. "The company will initially create 475 jobs and will invest nearly US\$100 million in the new aircraft recycling

center. Once operational, Aircraft Solutions USA's Kinston facility will recycle decommissioned commercial and military aircraft deploying a proprietary new recycling technology. This will enable the company to recycle many more aircraft each year than conventional methods enable. "With our proprietary recycling technology, we can recycle many more aircraft per year; for instance, up to 70 additional twin-engine narrow-body airliners" said Koechler. Aircraft parts such as engines, landing gear, avionics, and in-flight entertainment systems can be refurbished and sold on the aircraft parts aftermarket. Aircraft Solutions USA's ultimate-goal is to use every part of the airplane and up-cycle it to make a new product, for example a new pair of sneakers made from aircraft seating material. The long-term objective is to expand the recycling operation by establishing various production facilities that will create new products for di-

verse industries from up-cycled materials.

### APOC Aviation establishes new dedicated landing gear division

APOC Aviation, the innovative leasing, trading and aircraft part-out specialist, has set up a specialist landing gear division to service a growing number of customers across leading airlines and MROs worldwide. With several A320 and B737 assets already out on lease or in active exchange programs, the company is seeking equipment for a wide range of Airbus, Boeing, Embraer and ATR aircraft types. According to Karolis Jurkevicius, VP Landing Gear Trading – APOC Aviation, creating a dedicated landing gear division was the next logical step for APOC's expanding asset portfolio. "APOC Aviation has just celebrated its fifth anniversary, we are a young company with a dynamic investment strategy to build a strong foundation of engines and LDGs underpinned by independent and flexible repair management services. We have a close network of airline and MRO customers with whom we have been developing short and long-term lease agreements over recent years and now is the time to expand our capabilities." APOC Aviation has a selected number of audited LDG repair shops with whom it manages repairs for customers if so required. It also works with third party experts to tear down LDGs for piece parts for sale or to support customers' on-going overhaul projects. However, APOC is not an MRO shop itself. "Our LDGs on lease can be placed by the lessee in workshops of their choice – they are not tied into repair contracts as part of the lease agreement. Our customers like this flexibility which is unusual in the marketplace" says Jurkevicius.



Photo: APOC Aviation

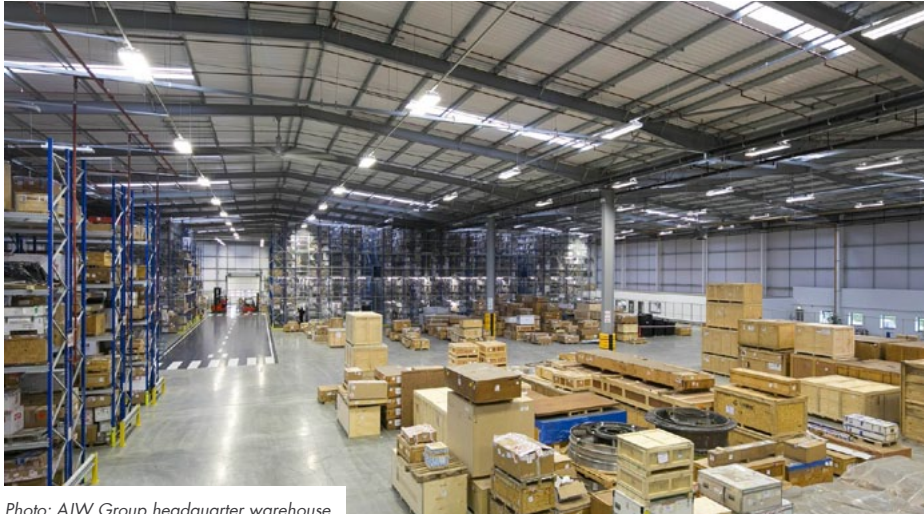


Photo: AJW Group headquarter warehouse

### AJW Group purchases CFM5B, A320-engine for tear-down

AJW Group has purchased a CFM56-5B4 engine for tear-down in support of expanding engine management programs. The high-quality engine parts will be stored at AJW Group's HQ in Sussex, U.K. and shipped to its strategic hubs around the world ready for exchange and sale to support its airline customers' extensive portfolio of A320 family aircraft.

### CAVU Component Repair enhances service offerings with EASA Part 145 approval

CAVU Component Repair (CCR), a division of CAVU Aerospace, has received EASA 145 maintenance organization approval (certificate EASA.145.6925) in their 80,000 ft<sup>2</sup> state-of-the-art Mesa, Arizona facility. With this certification, CCR will look to enhance its aftermarket services and migrate towards enhancing its MRO capability across multiple platforms. CAVU Aerospace Partner, Ken Kocalski commented: "Receiving EASA approval for CCR was the next step in showing our commitment to better serve the industry and our customers. We are excited our hard work is paying off."

### STS Aviation Services gains EASA approval for base maintenance at BHX facility

STS Aviation Services (STS) has gained CAA Part 145 approval to conduct base maintenance operations at its state-of-the-art aircraft maintenance facility in Birmingham, United Kingdom. Aircraft types included in the

new approval cover the A320 family, A330, B737NG and B757 models, with additional aircraft to be added in the coming months. The STS team will immediately focus on aircraft modifications, structural repairs, engine changes, A Checks, C Checks, lease transition and bridging checks.

### FL ARI receives EASA Part 145 Maintenance Organization certification for line maintenance in China

FL ARI Aircraft Maintenance & Engineering Company (FL ARI), a maintenance, repair and overhaul (MRO) service provider based in Harbin, China, has received certification approval as an EASA Part 145 Maintenance Organization. FL ARI is a joint venture between China Aircraft Leasing Group (CALC), its mid- to end-of-life aircraft solutions arm Aircraft Recycling International (ARI), and FL Technics, a provider of MRO services in Europe. FL ARI is now cleared to provide line

maintenance support for aircraft from the Boeing 737 NG series to Airbus A320 families. FL ARI provides MRO services for aircraft in China and Asia. Established in 2018, FL ARI focuses on aircraft line and base maintenance, aircraft disassembly, and engineering services consultation. Currently, FL ARI's facility holds multiple approvals including the CAAC 145 line maintenance certificate, EASA Part 145 and China's first accredited aircraft disassembler under the CAAC's CCAR 145 Civil Aircraft Maintenance Organization Certificate Regulations. FL ARI is currently providing line maintenance and repair services for two reputable airlines in China.

### Liebherr-Aerospace Brazil enhances competitiveness

Liebherr-Aerospace Brazil has achieved a new milestone in the development of the company: from now on, when supplying parts to third-party customers, the company will manage its supply chain and will hence increase its control over the share of its performance and of its competitiveness that is linked with its suppliers. Initially founded as a pure machining sub-contractor, Liebherr-Aerospace Brazil gradually expanded in the past the scope of its capabilities by adding assembly of sub-components, painting and surface treatment. This enabled it to substantially enlarge its capacity to serve its customers' needs. The company has now completed one significant additional step for parts supplied to third-party customers, by building up the ability to select and manage suppliers, both domestic and international. Liebherr-Aerospace Brazil is now fully positioned as a full-scope supplier of complex machined sub-assemblies to serve customers in and outside Brazil.



Liebherr Aerospace Brazil facility in Guaratinguetá  
Photo: Liebherr Aerospace



Photo: Nauru Airlines

### AEI to provide Nauru Airlines with a B737-300SF freighter conversion

Aeronautical Engineers (AEI) has agreed to provide Nauru Airlines with a ten-pallet position B737-300SF freighter conversion. The flag carrying airline of the Republic of Nauru will use the AEI B737-300SF freighter to transport fresh food, mail, medicines and other freight from various points in the Pacific. The freighter will also be used to support charter flights in the region. Nauru Airlines is celebrating its golden jubilee in 2020 with 50 years of continuous operation. Modifications to the aircraft (MSN 28732) will begin at Commercial Jet's Miami, Florida facility in late May 2020.

### AEI receives Transport Canada approval for B737-300/-400SF conversions

Transport Canada Civil Aviation has approved Aeronautical Engineers' (AEI) STC (ST01827LA) for the 11-pallet position B737-400SF freighter conversion and the 10-pallet position B737-300SF freighter conversions. Foreseeing an uptick in demand for the B737 Classic freighter programs, AEI initialized the approval process with Transport Canada in the fourth quarter of 2019. In addition to FAA, EASA, and now Transport Canada approvals, AEI's B737-400SF and B737-300SF freighter conversions are also approved in Russia, Brazil, India, Australia, and China. The AEI converted 11-pallet position B737-400SF freighter offers a main deck payload of up to 47,100 lbs. (21,364 kg), while the 10-pallet position B737-300SF freighter offers a main

deck payload of up to 42,900 lbs. (19,460 kg). Both freighter conversions include a large 86" x 140" Main Cargo Door with a dual vent door system, 9g rigid cargo barrier and a flexible Ancra Cargo Loading System. AEI announced two firm orders for the B737-800SF conversion for Allied Air earlier this month and has also announced at least five B737 classic freighter conversions with various customers in the first quarter of this year alone.

### Airflow Solutions receives enhanced FAA Op-Specs approval

Airflow Solutions (Tulsa, OK U.S.A.) has received enhanced FAA Op-Specs approval

for jet engine maintenance in its expanded 65,000 ft<sup>2</sup> MRO and Engine Storage and RTF Preservation facility, as well as on-wing field team dispatch authority. Enhancement was expedited to support capacity requirements for engine inspections, preservation and storage as global pandemic has forced the grounding of thousands of commercial aircraft. Engines supported include CFM56, V2500, Trent 700, RB211-535E & Trent 800. Ready-to-Fly Storage and Preservation facility is located next to existing 35,000 ft<sup>2</sup> MRO operations in the centrally located Tulsa, OK facilities complex. Airflow Solutions was founded in 2017 with a core focus of complete pylon down support. Full in-house repair, refurbishment and overhaul capabilities on nacelle and exhaust systems, engine mounts, as well as "hospital" type triage repair to support remaining green time of engine and to avoid full engine overhaul shop induction. Transaction-based services such as RTF Storage, vBSI inspection, LRU swap, and long-term preservation services for commercial aircraft engines.

### West Star Aviation completes inspection on Falcon 900EX

West Star Aviation has completed the first 24-year, fourth C-Inspection on a Falcon 900EX. The inspection involved most areas of the aircraft as well as in-depth inspection and repair of the winglets, nose and main landing gear, and engine. Additionally, interior and avionics updates were completed as well as custom exterior paint. The complete project was performed at the Alton, IL (ALN) facility, one of the four West Star full-service MRO locations.

Falcon 900EX  
Photo: WSA



NokScoot Airlines  
Photo: AirTeamImages

### HAECO ITM and NokScoot Airlines sign agreement

HAECO ITM has reached an agreement with Thai low-cost carrier NokScoot Airlines (NokScoot), to provide inventory technical management support for its fleet of six Boeing 777 aircraft. The scope of the agreement includes access to HAECO ITM's component pool, component exchange, repair management, engineering and AOG support. HAECO ITM's commitment to providing customized and cost-effective solutions will enable NokScoot to benefit from a tailored inventory management program, allowing the airline to focus on the operational side of its business.

### S.S. White Technologies highlights flexible shafts for aerospace manual valve control override systems

S.S. White Technologies, a leader in the design and manufacture of flexible shafts and related assemblies, highlights its flexible shafts for aerospace manual valve control override systems. Manual override systems are critical to airlines' increased expectation for on time departures. S.S. White has designed and developed several flexible shaft assemblies to manually actuate (control/override) valves in the event the automated system fails. Applications for ATS valves include the CFM International LEAP1 high-bypass turbofan, and the GE9X high-bypass turbofan for the Boeing 777X. Manual valve control override systems are critical to airlines – and are becoming more so – due to increasing expectations for improved reliability and on time dispatches. Backup manual override systems allow the aircraft to be dispatched from the gate and continue its planned flight. They avoid delays,

including de-bagging and off-loading passengers while finding another aircraft. Ultimately, they play an important role in avoiding expense for the airlines and delays for paying passengers. Backup manual valve control overrides involve complex systems, in which equipment is often located in a highly inaccessible location. The flexible shaft can bring the override position to a much more accessible location, and it can also allow the valve to be actuated manually from a remote location. Moreover, flexible shaft backup systems are a one-time fix, as the faulty valve is swapped out for a new one when the aircraft meets its destination. S.S. White's flexible shaft technology provides a unique set of advantages for manual valve control override systems. The flexible shaft is a precisely defined and configured, nested group of springs. These springs are wound tightly so that the shaft maintains torsional and rotational strength. In other words, flexible shafts can bend, but can still also rotate. This makes them especially useful for manual control for valves, as they transmit rotary motion like a solid shaft, but they can still be routed around obstacles. In an aircraft, the electrical system operates automatically, but when there is a failure, flexible shafts can play an important part in manual valve control override systems that can keep planes flying. Using flexible shafts in an aircraft design helps to improve aircraft serviceability ratings; the reliability analysis of these parts contributes to that of the whole aircraft.

### Vortex Aviation Dublin facility receives EASA certification

Vortex Aviation, a global "On-wing" turbine engine support company, providing 24/7 AOG support across Europe and neighboring coun-

tries, announced that its Dublin facility has received maintenance approval under EASA certification from the competent authorities (IAA) Irish Aviation Authority. Vortex Aviation, located in Dublin Ireland, provides engine hospital shop visit maintenance activities to support its global customer base of lessors, owners and operators, helping reduce heavy maintenance costs. The maintenance approval covers the majority of narrow-body and wide-body engine-types, for "On-wing" and "Off-wing" maintenance and includes Top Case and Engine Modular repairs on limited engine types. "I am proud to announce our new facility for Vortex Dublin," said Jeff Lund, President and CEO, Kellstrom Aerospace Group. "Over the last two years, Vortex has become a global company building larger facilities in the US, Ireland and Singapore to meet the needs of global demand for on-wing support and surgical type repairs. The state-of-the-art facility in Dublin will allow Vortex to continue to meet the needs of our European customers to save engine maintenance cost. With the global epidemic and the amount of aircraft and engines on the ground, this facility will allow capability to store, preserve and provide lower cost maintenance to support airlines, MROs, financial institutions, lessors and OEM's."

### Wesco Aircraft and Pattonair reveal merged companies official brand name

Wesco Aircraft and Pattonair have announced the new, merged companies' official brand name, Incora™. The company is one of the leading providers of comprehensive supply chain management services to the aerospace, defense and other industries. Incora reflects the company's commitment to its customers' mission-critical work – both in choice of name and brand identity. Incora is built on more than 100 years of combined supply chain expertise and delivery performance, as evidenced by Wesco Aircraft's and Pattonair's strong leadership and position in the market. With a solid foundation in the aerospace and defense market, Incora now serves industrial manufacturing, marine, pharmaceuticals and beyond. Incora manages all aspects of supply chain from procurement and inventory management to logistics and on-site customer services. "From delivering our wide portfolio of products directly to production lines with just-in-time service to creating accurate forecasts that help drive working capital down, Incora focuses on meeting our customers' daily supply chain needs so they can focus on what they do best," says Incora Chief Executive Officer Todd Renehan. "The essence of our new name, Incora, means that we are connected to, or incorporated in, our customers' businesses and operations."

*TPAerospace*

# **NO NEED TO REINVENT THE WHEEL**

**WHEELS AND BRAKES  
IT'S THAT SIMPLE**



Two of the latest generation MTorres Automatic Tape Laying (ATL) machines  
Photo: Strata

### Strata successfully implements automated manufacturing

Strata Manufacturing (Strata), the advanced composite aero structures manufacturing facility wholly owned by Mubadala Investment Company PJSC, has deployed two of the latest-generation MTorres Automatic Tape Laying (ATL) machines to support its Airbus A350-900 manufacturing capabilities. The Al Ain Abu Dhabi-based manufacturer has gained First Part Qualification and First Article Inspection design and quality verifications for the use of the computer-controlled robotic ATL machines that will automate Strata's production of the inboard flap components. "The deployment of breakthrough technologies brings enhanced efficiencies and increased productivity that will drive the company's long-term competitiveness

in a rapidly evolving and increasingly competitive industry," said Ismail Ali Abdulla, CEO of Strata. "Through the quick adoption of cutting-edge technologies and solutions such as ATL, Strata will further advance its position in the global aerospace industry, facilitate our evolution to manufacture more complex aircraft parts and establish Strata as a key industry player with the technological capabilities to grow in advanced manufacturing."

### HAECO Landing Gear Services has attained Boeing 787 landing gear overhaul capability

HAECO Landing Gear Services has attained Boeing 787 landing gear overhaul capability,

providing timely support for the fast-approaching landing gear overhauls due on regional and international Boeing 787 fleets. In addition to the Boeing 787, HAECO Landing Gear Services holds MRO capabilities covering a wide range of aircraft, including all series of the Boeing 737, 747 (including the 747-8), 757, 767, 777 and the Embraer E190/E195.

### Thomas Global gains TFD-7000 LCD flight displays Transport Canada STC for Boeing 737/757/767

Thomas Global Systems has achieved another regulatory certification milestone with receipt of Transport Canada Civil Aviation (TCCA) Supplemental Type Certificate (STC) approval for its TFD-7000 Series plug-and-play LCD flight displays for Boeing 737/757/767 CRT-equipped aircraft. Transport Canada approval of the TFD-7000 Series follows FAA Technical Standard Order (TSO) authorization for Boeing 737/757/767 aircraft in July of 2019, and FAA STC approvals for Boeing 757/767 and 737-3/4/500 aircraft in July and October of last year, respectively. The TFD-7000 LCD solution is currently being installed in the U.S. on all three Boeing fleet types. With Transport Canada 737/757/767 STC approval achieved, Thomas Global is proceeding with validation of FAA approvals with the European Aviation Safety Authority (EASA) and other foreign regulators.

## Finance News



Photo: Steinn Logi Björnsson Managing Director of Bluebird Nordic

### Avia Solutions Group finalizes acquisition of Bluebird Nordic

On January 24, 2020, Avia Solutions Group signed an agreement with BB Holding EHF for the full acquisition of Bluebird Nordic, which entails a 100% stake ownership of the company's shareholdings. On March 31, 2020, following the completion of all prerequisites and receipt of relevant clearances from competition authorities, the transaction was finalized. Bluebird Nordic uses a fleet of six aircraft and operates scheduled as well as charter flights under its brand. The airline also offers cargo export and import services from and to Iceland, serving more than 100 locations worldwide. "We are happy that Bluebird is now a member of Avia Solutions Group and look forward to working with the new owners to grow and strengthen the company. We are certain that the company, its employees and customers will feel the benefits of belonging to such a strong aviation industry player", says Steinn Logi Björnsson, Managing Director of Bluebird Nordic. As a part of Avia Solutions Group, Bluebird Nordic is expected to develop further, expand its existing service portfolio and improve its operations.

### Air Lease Corporation activity update for first quarter of 2020

Air Lease Corporation (ALC) has announced an update on deliveries, sales and new significant financing occurring in the first quarter of 2020. As of March 31, 2020, ALC's fleet was comprised of 301 owned aircraft in its operating fleet and 82 managed aircraft with 399 new aircraft on order from Boeing and Airbus set to deliver through 2026. During the first quarter, ALC delivered eight new aircraft including two Airbus A320neos, four Airbus A321neos, two Boeing 787-10s, and acquired one Airbus A330-300 in the secondary market. Aircraft investments in the quarter totaled approximately US\$700 million. The company has sold three aircraft to Thunderbolt Aircraft Lease Limited III during the quarter. Sales proceeds for the quarter totaled approximately US\$65 million. ALC issued US\$1.4 billion of senior unsecured medium-term notes comprised of US\$750.0 million due 2025 at a fixed rate of 2.30% and US\$650.0 million, due 2030, at a fixed rate of 3.00%. The company upsized its senior unsecured revolving credit facility to US\$6.1 billion from US\$5.8 billion.

### Leonardo closes acquisition of Kopter Group

Leonardo has closed the acquisition of Kopter Group AG (Kopter) from Lynwood (Schweiz). The purchase price, on a cash and debt-free basis, consists of a US\$185 million fixed component plus an earn-out

mechanism linked to certain milestones over the life of the program, starting from 2022. The acquisition of Kopter allows Leonardo to further strengthen its position in the rotorcraft sector, in line with the Industrial Plan's objectives for the reinforcement of the core businesses.

### United Technologies and Raytheon complete merger

Raytheon Technologies successfully completed the all-stock merger of equals transaction between Raytheon Company and United Technologies Corporation on April 3, 2020, following the completion by United Technologies of its previously announced spin-offs of its Carrier and Otis businesses. Headquartered in Waltham, Mass., Raytheon Technologies is one of the largest aerospace and defense companies in the world with approximately US\$74 billion in pro forma 2019 net sales and a global team of 195,000 employees, including 60,000 engineers and scientists. Raytheon Company shares ceased trading prior to the market open on April 3, 2020, and each share of Raytheon common stock has been converted in the merger into the right to receive 2.3348 shares of United Technologies common stock. Upon closing of the merger, United Technologies' name has changed to "Raytheon Technologies Corporation," and its shares of common stock started trading on April 3, on the NYSE under the ticker symbol "RTX." United Technologies shareowners will continue to hold their shares of United Technologies common stock, which now constitute shares of common stock of Raytheon Technologies Corporation.



Your

exchanges ▼

partner

materials

leasing

transitions

records

remarketing

[www.TrueAero.com](http://www.TrueAero.com)

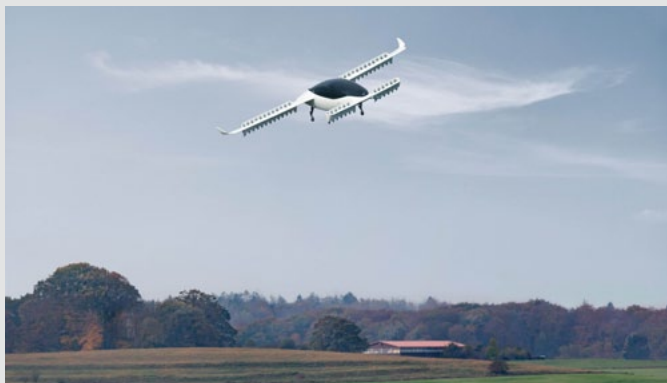


Photo: Lilium Jet

### Lilium completes funding round worth more than US\$240 million

Lilium, the Munich-based aviation company developing an all-electric, vertical take-off and landing aircraft for regional air mobility, has completed an internal funding round worth more than US\$240 million. The round was led by Tencent, with participation from other existing investors including Atómico, Freigeist and LGT. The new funds bring the total sum raised to date to more than US\$340 million. They will be used to support further development of the Lilium Jet as well as underpinning preparations for serial production in Lilium's newly completed manufacturing facilities. As well as designing and manufacturing the Lilium Jet, the company plans to operate a regional air mobility service as early as 2025 in several regions around the world. It recently celebrated the completion of the first stage of flight testing, with the five-seater Lilium Jet demonstrator flying at speeds exceeding 100 km/h.

### BOC Aviation rounds up successful first quarter 2020

In the first quarter of the year BOC Aviation has signed agreements to purchase 48 aircraft, of which 38 have already been placed on long-term leases with the remaining ten unplaced A320neos due to be delivered in 2023-24. As of March 31, the company's balance sheet comprised liquidity of US\$3.6 billion. The company closed the first quarter with a total portfolio of 567 aircraft comprised of 323 owned, 40 managed and 204 on-order aircraft. BOC's owned portfolio remains one of the youngest in the industry with an average fleet age of 3.4 years and long, average remaining lease term of 8.5 years. The company has achieved a 100% utilization rate and 94% collection rate for the first quarter. During the first quarter, BOC Aviation has raised an additional US\$1.3 billion in financing from the loan and bond markets and repaid more than US\$950 million of bonds on schedule under its Global Medium-Term Note (GMTN) program. The company increased the limit of its GMTN program to US\$15 billion from US\$10 billion, which provides the flexibility to continue accessing the debt capital markets for its future funding needs and supports the growth of its business.

### ALA – Advanced Logistics for Aerospace acquires Germany-based Industrio GmbH

ALA – Advanced Logistics for Aerospace has acquired a majority stake in Germany-based Industrio GmbH. ALA is an Italian private company owned by entrepreneurs Fulvio Scannapieco and Vittorio Genna and specialized in distribution, logistics and service provision to the aerospace and defense, energy and industrial markets. Industrio

GmbH is an aerospace distribution company with a significant footprint in the German-market. The company, headquartered in Neumarkt in der Oberpfalz, Germany, will change its name and trade as ALA Germany GmbH effective from April 1, 2020 and will be led by Bill Holler as general manager. With facilities already in Italy, the United Kingdom and France, the acquisition now gives ALA more business opportunities in the European aerospace marketplace to serve its international customers.

### AeroCentury reports fourth-quarter 2019 and fiscal year 2019 results

AeroCentury, an independent aircraft leasing company, has reported a fourth-quarter 2019 net loss of US\$7.0 million, compared to a net loss of US\$3.8 million for the fourth quarter of 2018. Net loss for the year ended December 31, 2019 was US\$16.7 million, as compared to a net loss of US\$8.1 million in 2018. The results for the fourth quarter of 2018 and subsequent periods reflect the combined operations of AeroCentury and its subsidiary, JetFleet Holding, which was acquired by the company on October 1, 2018. The termination of the leases for, and repossession of, four aircraft from one of the company's lessees (repossessed aircraft) in the third quarter of 2019 had a substantial adverse impact on the Company's results. As a result of those events, the company recognized maintenance reserves revenue of US\$17.0 million with respect to the repossessed aircraft at the time of repossession, but also recorded impairment losses for the repossessed aircraft of US\$22.3 million and US\$6.1 million during the third and fourth quarters, respectively, based on third-party appraised values for three of the aircraft and expected sales proceeds for the fourth aircraft. Results for the year ended December 31, 2019 also included impairment losses totaling US\$2.6 million, based on third-party appraised values or expected sales proceeds, for three older turboprop aircraft, a spare engine, and an older turboprop aircraft that is being sold in parts.

### MTU Aero Engines AG withdraws guidance 2020

The executive board of MTU Aero Engines AG resolved to withdraw the guidance for the financial year 2020. The company's decision is based on the assessment of market scenarios presently deemed likely, and on a catalogue of expenditure reduction measures. The previous guidance was published on February 20, 2020, already with the reservation to review it during the year due to the COVID-19 pandemic. Especially due to significant reductions in passenger air traffic and the consequences for airlines, revenues and adjusted EBIT for the financial year 2020 are expected not to grow with a high single digit percentage as forecast. The cash conversion rate, expressing the ratio of free cashflow to net income adjusted, is also likely not to reach the forecast 70% in 2020. Due to the dynamic of worldwide developments in the context of COVID-19 a specification of expectations with regard to revenues, adjusted EBIT and especially the cash conversion rate, based on the developments of the coming weeks and the resulting consequences for the company's performance, can only be made at a later point in time.

### HAECO acquires Jet Engine Solutions

Hong Kong Aircraft Engineering Company (HAECO Group) has acquired Jet Engine Solutions, (JES), an engine MRO based in Dallas, Texas, U.S. JES specializes in quick-turn repairs and lease-returns

for commercial aircraft engines. The acquisition of JES forms part of HAECO's strategy to grow its Global Engine Support business. This includes the opening of a new GES location near Amsterdam. This facility is EASA Part 145 approved and located 20 minutes by road from Schiphol Airport, the Netherlands. The HAECO Global Engine Support facilities are located in the U.S., Europe and at HAECO's headquarters in Hong Kong.

### FACC scraps dividend and reassess Croatia plans

FACC, owned by China's Aviation Industry Corporation, is rapidly reassessing its €33 million (US\$36 million) project to build an automated, digitized production complex in Croatia. In addition, the company has opted not to pay a dividend for last year. The situation has come about through the aviation industry's reaction to the COVID-19 outbreak and, as a result, the company will also be reducing the working hours of many of its employees from April 6 for the next three months. FACC is responsible for the manufacture of plane parts, predominantly wings, tail assemblies and fuselages as well as engines and cabin interiors for all major plane manufacturers, employing over 3,500 staff in 13 countries across the globe. "The situation is very uncertain and changes daily or hourly," Chief Executive Robert Machtlinger said. "We have to find an optimal balance between protecting our workforce... and struggling to achieve the necessary economic stability, secure financial stamina and maintain the trust of our customers," adding that US\$800 million in existing orders was an encouraging sign. However, as a consequence of such an uncertain future, the Group would refrain from issuing a detailed forecast on its 2020 and 2021 earnings until the summer.



Low pressure turbine installation

Photo: LHT

### Lufthansa Technik expects massive drop in revenue after record year 2019

Lufthansa Technik AG continued on its growth path in the past financial year and closed 2019 with record revenue and earnings. Revenue rose by 13% to €6.9 billion. Earnings before interest and taxes (adjusted EBIT) grew by around eleven percent to €493 million. The extent of the effects of the worldwide aviation crisis affecting Lufthansa Technik cannot yet be concretely foreseen, but the impact is already massive. Dr. Johannes Bussmann, Chairman of the Executive Board, said: "With the outbreak of the corona crisis, nothing is the same as it was just a few weeks ago. The maintenance industry is already suffering from the decline in air traffic. The full extent will hit us with a delay,

which means a forecast is currently not possible, but first impacts are massive. Everything depends on the duration of the crisis and how our customers will recover from it. We have prepared ourselves with a very comprehensive package of measures – also, to be able to deliver at any time. Especially now, our customers need a reliable technical partner." Over the past five years, Lufthansa Technik AG's revenue has grown by almost 60%. In the last financial year alone, the company acquired 25 new customers and signed 625 contracts with new business worth €4.1bn. Compared to 2018, investments increased by 28% from €244 million to €313 million. On annual average, in 2019 Lufthansa Technik employed almost 26,000 people worldwide. (€1.00 = US\$1.07 at time of publication.)

### Airbus secures credit facility of €15 billion; withdraws 2020 guidance

Airbus is bolstering its liquidity and balance sheet in response to the COVID-19 pandemic as it continues to assess the ongoing situation and the impact on its business, customers and suppliers. Airbus' management has received approval from the Board of Directors to secure a new credit facility amounting to €15 billion in addition to the existing €3 billion revolving credit facility. The company will withdraw the 2019 dividend proposal of €1.80 per share with an overall cash value of approximately €1.4 billion and suspend the voluntary top up in pension funding. Given the limited visibility due to the evolving COVID-19 situation, the 2020 guidance is withdrawn. Operational scenarios, including measures to minimize cash requirements, have been identified and will be activated depending on the further development of the pandemic. With these decisions, the Company has significant liquidity available to cope with additional cash requirements related to the coronavirus. Liquidity resources previously standing at approximately €20 billion, comprising around €12 billion in financial assets at hand and around €8 billion in undrawn credit lines, were further bolstered by converting an existing €5 billion credit line into a new facility amounting to €15 billion. Available liquidity now amounts to approximately €30 billion. (€1.00 = US\$1.07 at time of publication.)

### Leonardo posts net profit of €822 million for full year 2019

Leonardo has posted 2019 full year results. Revenues amounted to €13,784 million, an increase of 12.6% compared to 2018. EBITA amounted to €1,251 million, showing significant growth compared to 2018 (€1,120 m), thus confirming a sound profitability (ROS of 9.1%, in line with the previous year). EBIT amounted to €1,153 million, an improvement of 61.3% compared to 2018. Net result before extraordinary transactions amounted to €722 million, compared to the previous year, mainly benefitting from an improvement in the operating profit, net of related tax charge. Net result amounted to €822 million, included the effects of the release of a large part of the provision set aside against the guarantees given upon the sale of the transport business of AnsaldoBreda S.p.A. following the subsequent signature of the transaction with Hitachi. The data for 2018 included the effects of the judgment of acquittal towards Ansaldo Energia and another minor transaction, which had led to the recognition of proceeds of €89 million among the result from Discontinued Operations. Free Operating Cash Flow (FOCF) posted a positive value of €241 million (€336 million in 2018). (€1.00 = US\$1.12 at time of publication.)

**Aviation Clean Air (ACA)** is experiencing increased interest and an uptick in orders for its Ionization Purification System. The patented system is certified for aircraft installation by both the **Federal Aviation Administration (FAA)** and the **European Aviation Safety Agency (EASA)**. The ACA product is a proactive system that immediately improves interior air quality, eliminates odours and kills pathogens in the air and on surfaces wherever they live throughout the cabin and cockpit of the aircraft. The system, which operates through the aircraft's existing environmental control system (ECS) is a proactive, natural purification process that produces no harmful ozone or chemicals and requires no maintenance with filters to be changed or charged plates to clean. "We began manufacturing our Ionization Purification System in 2014 and it is currently installed on a variety of aircraft models," said Howard Hackney, ACA Managing Member. "The system is proven to effectively purify the air and surfaces throughout an aircraft's interior."

**Boeing** has joined the **Renewable Energy Buyers Alliance (REBA)** in support of its goals to reduce greenhouse gas emissions by 25% by 2025, and ultimately power operations with 100% renewable energy. This alliance of large clean energy buyers, energy providers, service providers and NGO partners supports a large-scale, rapid transition to a cleaner future. REBA membership expands Boeing's leadership in the use of renewable energy and energy efficiency. Two Boeing sites – Renton, Washington, and Charleston, South Carolina – use 100% carbon-free electricity through a combination of renewable energy consumption and carbon offsets from renewable sources. The company is ranked 16th on the EPA's Green Power Partnership Fortune 500® Partners List.

**OneWeb**, the global communications company announced the successful launch of 34 more satellites, aboard a Soyuz launch vehicle from the historic Baikonur Cosmodrome, Kazakhstan. Lift-off occurred on March 21. OneWeb's satellites separated from the rocket and were dispensed in nine batches. This is the second of its 34 satellite launches in six weeks, an achievement made possible by the pace and execution of OneWeb Satellites' high-volume production factory in Florida. This launch brings the total number of satellites in the constellation to 74. The company has now successfully deployed and tested satellites, installed ground stations globally, secured valuable spectrum and has a range of user terminals in development to meet customer needs. In the execution phase of its system deployment, OneWeb looks forward to bringing its services to markets including aviation and maritime and working with carriers to provide services in rural and remote areas. The current global health and economic crisis underscores the tremendous need and demand for connectivity, especially for rural and under-connected communities worldwide. From remote working, to online learning, to accessing healthcare information and medical advice, there is an overwhelming need to have more solutions available to connect people everywhere. OneWeb is making significant strides to deliver the connectivity that is currently lacking around the world.

**SunExpress**, the joint venture between **Lufthansa** and **Turkish Airlines**, has selected **GE Aviation** for a comprehensive safety contract including eFOQA Mainline. The program covers the SunExpress fleet including Boeing 737 and Airbus A330 airplanes and expands upon a previous agreement to enable advanced analytics with enriched data sets that will ultimately drive greater understanding of flight trends. Implementation is currently underway. FOQA (Flight Operations Quality Assurance), also commonly referred to as FDM (Flight Data Monitoring), is the process of analyzing and reviewing routinely recorded flight data. Airlines and operators that adopt FOQA are better able to identify and eliminate potential safety hazards in flight operations.



keeping you in the air ...

**BEYOND MRO**

As the industry's leading independent aero-engine MRO provider, StandardAero is trusted by airline, governmental and business aviation operators worldwide for responsive, tailored support solutions.

Our global Airlines & Fleets team provides OEM-authorized support for your engine and APU needs:

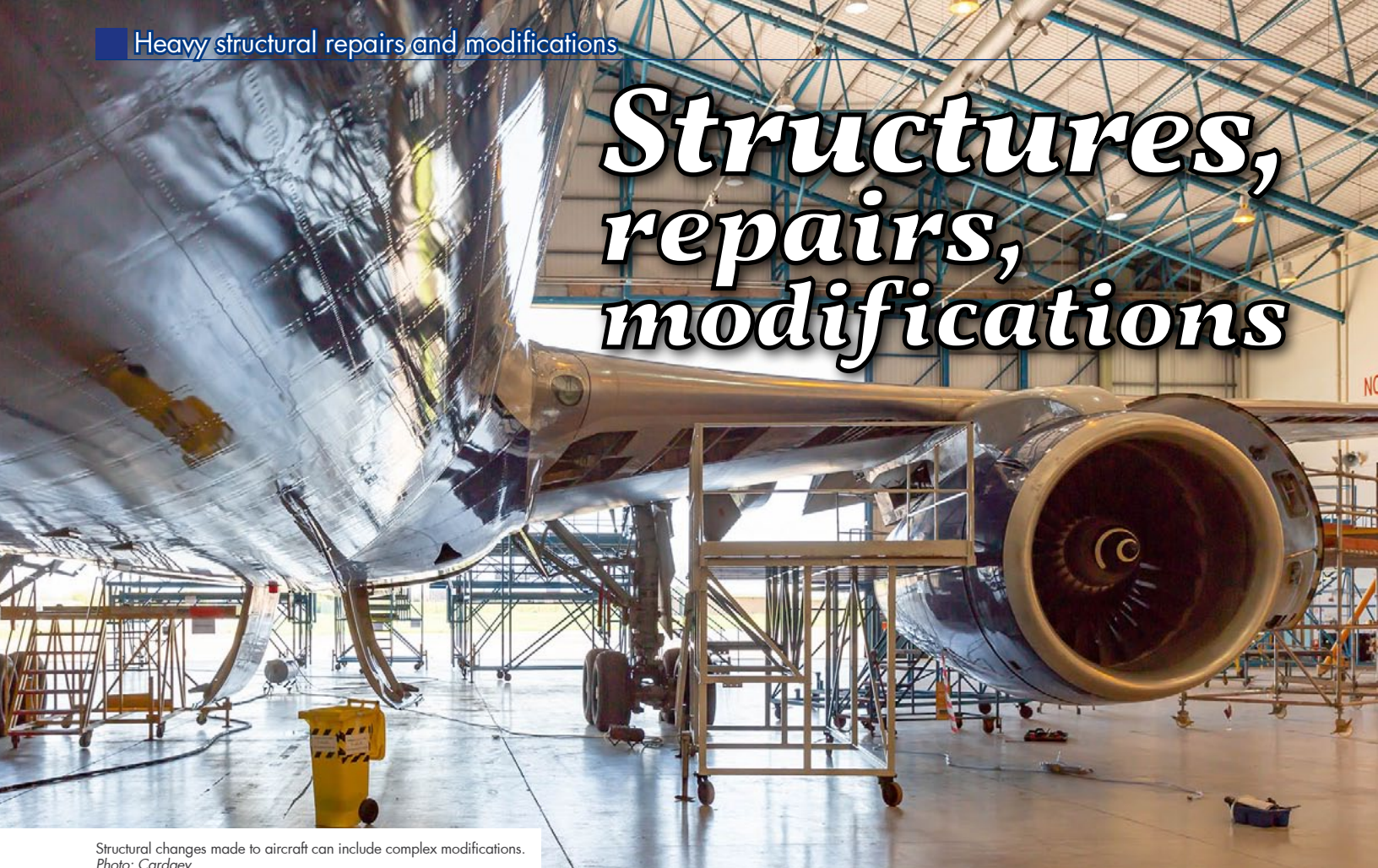
- AE 3007 • APS2300 • CF34-3/-8
- CFM56-7B • GTCP36 • JT15D
- PT6A • PW100 • PW150
- RB211-535 • RE220

**StandardAero**

**BIGGER. BETTER. BOLDER.**

[www.standardaero.com](http://www.standardaero.com)

# Structures, repairs, modifications



Structural changes made to aircraft can include complex modifications.  
Photo: Cardaev

Heavy structural changes on the aircraft require meticulous observance to airworthiness directives. **Keith Mwanalushi** highlights some key aspects for modification and repair.

**T**here are several factors shaping the market for aircraft structural work. Recent advances include the application of new composites on airframes. Composite materials have proved to have better fatigue characteristics, they have less susceptibility to corrosion but also guarantee longer inspection intervals, thus reducing maintenance costs.

The application of aluminium wing box's is another, this makes it easier to manufacture the optimal wing structure on certain newly developed aircraft types. The aluminium wing box allows for a shorter lead-time to make structural changes as applied to the SpaceJet or formally MRJ regional aircraft.

Structural repairs and modifications cover a vast spectrum of work from nose to tail. Air France Industries KLM Engineering & Maintenance Engineering (AFI KLM E&M) continuously develops heavy structural airframe repair solutions for their own fleet as well as customer airlines.

Ahmoos Messayeh, Head of Business Intelligence and Marketing Airframe at AFI KLM E&M explains to AviTrader MRO that as an operator and DOA [Design Organisation Approval], they receive AD's [Airworthiness Directives] from authorities such as the EASA, FAA or NAA as well SBs [Service Bulletins] from OEMs that are regularly applied by their team. AFI KLM E&M also works with OEMs to develop solutions for structural repairs.

As an example, cracks in the longeron have been reported on Boeing 777-300ERs and 777-200 aircraft. The US FAA announced adopting a new AD 2017-16-10 Amdt 39-18987 on all 777 aircraft, prompted by reports of cracks on the underwing longeron. This AD was effective 25-Sep-2017.

"The repair is to avoid any risk of fuel leakage into the forward cargo area and consequently avoid the risk of fire and protect the aircraft structure. To do this underwing longeron inspection, two options have been considered. The first option consists of a detailed inspection of the left and right side longeron, repetitive detailed inspections."

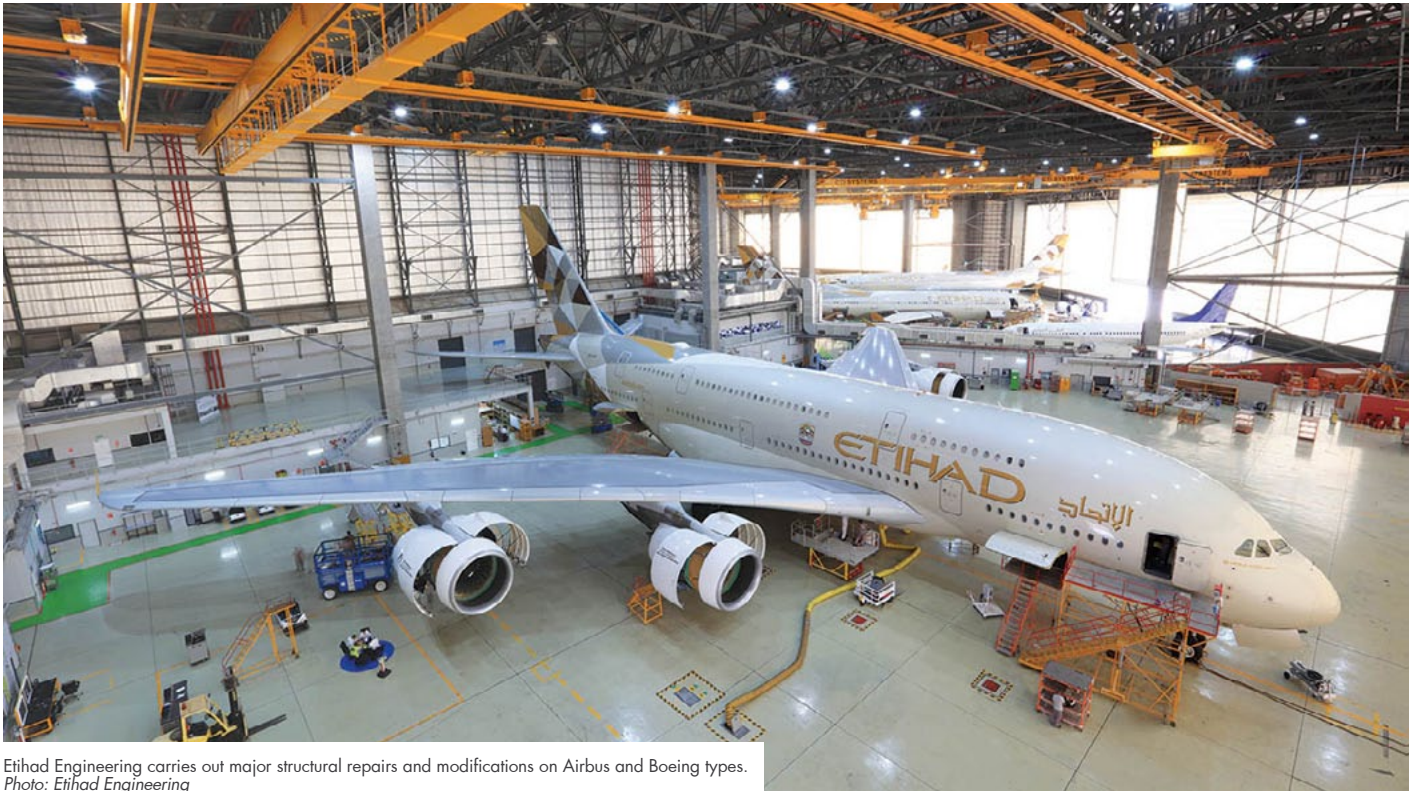
Messayeh says the second option is a detailed inspection of the left and right side longeron and ultrasonic inspection or High frequency eddy current (HFEC) inspections. Any corrective actions and repair need to be done before further flight.

"AFIKLM E&M is the first MRO to have performed this operation, at Paris CDG and Amsterdam with support from Boeing as the OEM."

At Caerdydd in Wales, Ben Lee, Commercial Director says they are well-placed to undertake a wide range of heavy modification work. "We have a highly skilled engineering team of approximately 100. Originally 2,000 highly skilled RAF [Royal Air Force] personnel worked on our site when it was an active MoD [Ministry of Defence] base. They are now dispersed around the UK but often want to work closer to home – we often tap into those that are working free-



Ben Lee, Commercial Director at Cardaev



Etihad Engineering carries out major structural repairs and modifications on Airbus and Boeing types.  
Photo: Etihad Engineering

lance and recruit permanent colleagues from this pool.”

Caerdav are actively looking to take on cargo conversion work, adapting A321s and Boeing 737-800s from passenger to cargo aircraft – “We have all the capabilities in-house to undertake that work.”

In fact, a new generation of freighters are entering the market. Narrowbodies are gaining some traction for conversion modifications and the A321 and 737-800 are prime candidates, however feedstock is still tight for the time being.

STS Aviation Services has carried out several heavy structural airframe modifications. “The range of modifications we have done include large section skin replacements resulting from extensive structural damage as well as structural changes made to aircraft to incorporate complex modifications such as inflight connectivity on a range of aircraft types,” Ian Bartholomew, Business Development and Sales Director for STS Aviation Services informs.



Dan Velescu, Director MRO Civil Aviation Division.  
Photo: AEROSTAR

In Romania, AEROSTAR have put in place strong capabilities experience for airframe structural work and installation of Supplementary Type Certificate (STC) modifications. Aerostar currently performs a wide range of aircraft modifications such as ACARS data link systems, CPDLC [Controller Pilot Data Link Communication] or ADS-B [Automatic Dependent Surveillance – Broadcast] Wi-Fi Global Airconnect systems and Split Scimitar winglets, the last two also involving airframe structural modifications – “These types

of modifications are merged with the C-check work package to minimise the aircraft grounding time and thus providing cost-effective solutions for our customers,” declares Loan- Dan Velescu, Director MRO Civil Aviation Division at AEROSTAR.

Over in the U.A.E, Etihad Engineering has also a long history of carrying out major structural repairs and modifications on all Airbus and Boeing aircraft types. Works carried out include aircraft skin panel replacement due to damages or a crown skin modification for antenna installation based on an STC, an example of this was a crown skin change which was 10m in length. Etihad Engineering also supports complex SB's issued by Airbus or Boeing.

### Non-destructive inspection and repair

NDT has become a key tool to carry out aircraft inspections as Bartholomew from STS point out. “It’s great for the detection of damage to aircraft with ultrasonic testing the most common sub-surface technique being used. Ultrasonic testing involved the use of high-frequency sound waves to locate defects within a component or material. There are many other NDT methods that we deploy including radiography and advanced 3D computer tomography. It’s fair to say that technology is progressing all of the time with new processes being developed.”

As already indicated, there are several NDT methods applied in the industry. At Etihad Engineering the six most common are Penetrant (PT), Magnetic (MT), Eddy Current (ET), Ultrasonic (UT), Radiography (RT) and Thermography (IRT) IAW EN4179. Each method plays a key part on the aircraft and associated components. Also, phased array (UT and ET) techniques appear to be coming more popular on the newer composites, as Etihad observe.

Lee feels it is crucial to have instant access to non-destructive testing on-site, so there is minimal interruption to work. “Caerdav is to invest in training its mechanics and technicians to carry out Level 1 NDT tasks

so that for very simple investigations, they are qualified to conduct them on the spot. Therefore, our core team can carry out works above and beyond what would be traditionally expected of their roles so that they can work even more quickly and efficiently. For more complex works, we of course use dedicated specialists."

Having in-house NDT capabilities benefits both engineers and customers Lee stresses. "We can stagger the prep for NDT tasks, so we maximise what can be achieved when a third-party contractor is on-site, and it means that duties such as follow-up inspections can be carried out more flexibly.

"Additionally, by giving our team these additional skills, it means Caerday's engineers have a holistic view of their work. We empower them to broaden their understanding of aircraft maintenance beyond their engineering expertise, which encourages them to develop their skills even further than their existing high-level qualifications."

### Composite structures

The repair of composite structures is a very strategic issue for the aeronautical industry.

Caerday is actively investing in composite repair at present – "we have trained engineers and instructors, and a clean room, which are an essential foundation for providing this sort of service. It is also vital to upskill existing technicians and engineers on how to carry out basic composite repairs, in much the same way we have encouraged this around NDT. Again, it gives the team skills beyond the industry standard, keeping us lean and allowing us to deliver very high levels of productivity," Lee tells.

He adds: "It is also essential to build relationships with key suppliers who can provide additional extra capacity on a flexible basis. That way, you can keep repair costs to a minimum without compromising on capability or responsiveness."

At AEROSTAR, they took composites inspection and repairs as a mandatory capability for the solutions offered. "We have the capability to repair flight control surfaces, thrust reversers along with other composite panels and surfaces, either in the composite shop or on the aircraft," Velescu notes.

The Romanian MRO facility has dedicated functional areas for reception, preparation and environmental controlled clean (cure) rooms as well as standard tooling for sanding, drilling, cutting for parts preparation.



New composites means investing in new technologies.  
Photo: STS Aviation Services



The location of damage to composite sections can be a challenge.  
Photo: STS Aviation Services

Velescu: "Our technicians are well trained to work with the specific equipment for cure and materials storage, hot bonders, heat blankets, walk-in ovens, and freezers or with the specific materials such as sandwich honeycomb and foam core structures, sealant, consumables, all in accordance with the OEM requirements for the task."

He continues saying the inspection and damage identification is performed using the specific NDT method and techniques for composites – "our technicians have the skills, training and certifications to perform complex composite repairs."

Etihad Engineering say they were one of the first MROs to repair a sizeable fuselage puncture on a Boeing 787. "We continue to train our teams and develop their skills and competencies to match. We are working with our supply chain partners to ensure that we have access to tools and repair material as and when required," the company stated.

With the increased use of composite material on the next generation aircraft such as the Boeing 787 and Airbus A350, STS Aviation Services is investing in technology to ensure that they can deliver composite repair solutions to its customers. Bartholomew notes one of the greatest challenges with composite repairs is establishing the precise location of damage to composite sections as this is not easily detected from the surface and, in most cases, can only be detected by a detailed sub surface inspection.

### Structural checks for ageing fleets

Continued safe operation of ageing fleets requires increased emphasis on stress corrosion and fatigue. Bartholomew reckons for ageing aircraft fleets; STS are not necessarily seeing new technologies or processes filtering through. "However, with these aircraft the extent of the inspection and subsequent rectification of corrosion we are finding does have a significant impact on maintenance downtime and is one of the reasons why the next generation of aircraft contain greater levels of composite material. This is true not only for the weight reduction benefits but to try and avoid the levels of fatigue and corrosion experienced in the past."

Lee feels that drones and ultrasonic cameras could play an important role in providing additional detail over and above the standard detailed visual inspection. He says these technologies are becoming more widely adopted and Caerday is currently reviewing the latest developments.

"It's crucial that these new technologies are integrated into existing processes. Boeing's non-destructive testing manual is excellent at listing out acceptable technology alternatives, emphasising the result, rather than the method, is the most critical element," Lee concludes.

# Claiming the aftermarket

Magellan is a key player in the aftermarket.  
Photo: Magellan

Magellan Aviation Group is well established in the aviation aftermarket. Chief Executive Bill Polyi gives **AviTrader MRO** a detailed profile and insight into the company's core business.

**AviTrader MRO:** Please outline a brief history of the company.

**Polyi:** The Magellan Aviation Group has been in operation since the early 2000s, however some of our senior partners, including our President and CEO, Bill Polyi, have been working together for close to 30 years. 2002 saw the integration of the Charlotte, NC and Shannon entities. Rapid growth of the business ensued with Magellan gaining a significant footing in the regional aircraft aftermarket. Diversification into narrowbody aircraft and engine support and the commencement of key consignment relationships were further highlights of the late 2000s as Magellan also expanded its warehousing facilities in both the USA and Ireland. 2011 saw Magellan acquire B&B Marketing, later to become Magellan Expendables. Key milestones in 2012 were the opening of a dedicated office in Singapore and the 50% investment in Magellan by the Marubeni Group. Further growth of the business followed and in 2016, Marubeni acquired a controlling interest in Magellan and its worldwide network of offices actively support Magellan's expansion into emerging global markets..

**AviTrader MRO:** What is your current market position in the aftermarket sector?

**Polyi:** Magellan is a well-established player in the supply of airframe and engine USM (Used Serviceable Material), supporting OEMs,

MROs and operators alike. Through the acquisition of whole aircraft and standalone engines, we have also grown and diversified our engine lease pool in the last ten years to over 60 engines, ranging from PW100 turboprops up to PW4000 widebody engines. The growth of Marubeni's investment in Magellan has coincided with an aggressive asset acquisition strategy.

With the support of Marubeni, Magellan is actively seeking assets for acquisition with or without lease attached. Our expertise as a mid-to-end-of-life specialist leaves us well placed to procure aircraft and engines with 1-3 years' lease term remaining, providing a valuable outlet to lessors looking to free up cash by selling down these assets. Notwithstanding the impacts of COVID-19, the market is changing with the advent of new technology aircraft and engines across all seat categories, as well as global environmental concerns to the fore. Magellan's acquisition strategy



Magellan Aviation Group CEO Bill Polyi

has moved towards 10-15-year-old aircraft, be they regional, narrowbody or widebody models. This strategy ensures maximum parts commonality with newer tech aircraft types as well as reducing scrap levels, thus positioning well for future customer requirements.

There is also a growing secondary market for aircraft from emerging regions. While Magellan has well-established relationships with customers in North America and Europe, recent years have seen a growing need for after-market support in regions such as Asia-Pacific, Latin America and Africa. Magellan has leveraged the support of Marubeni's global network of offices, to facilitate growth in regions where we do not have an established presence.

**AviTrader MRO: Talk about your engine and airframe products and the solutions you offer aircraft operators.**

**Polyi:** As discussed above, Magellan's range of products and services is evolving with the market. Across almost all engine types in our portfolio, OEMs are dominating the aftermarket space with operators and lessors alike. In turn, Magellan has partnered with OEMs themselves and has developed strategic partnerships with Pratt & Whitney, Boeing and Bombardier among others. We are actively buying CFM56-5/7, V2500-A5, CF34-8, PW100 and PW4000 assets to support burgeoning lease and spare parts requirements across the market, regardless of where engine types are in their lifecycle.

On the airframe side – looking at the A320ceo and 737NG market specifically – there is an increased trend among operators for newer spec material. Magellan's acquisition strategy reflects this shift. We also offer leasing solutions for higher value components such as APUs and Landing Gears.



Magellan buys whole aircraft and standalone engines.  
Photo: Magellan



Leasing solutions for higher value components such as APUs.  
Photo: Magellan

**AviTrader MRO: Explain your capability for managing surplus parts inventory and the systems you have in place to achieve this.**

**Polyi:** Magellan has an integrated inventory management system which is regularly updated to ensure accuracy. We have a geographically diverse warehousing network with major facilities in the USA, Ireland and Singapore, from which we support our network of customers. Indeed, growing inventory levels have necessitated significant expansion of our facilities in Charlotte and Shannon. A key part of Magellan's business is our role as a consignment partner for a varied range of OEMs, operators, MROs and lessors. This area of Magellan's business, together with our asset acquisition activities, implies that our inventory levels are constantly changing. We have an internal team of analysts who regularly monitor stock levels including scrap where necessary.

Internally, Magellan is implementing a new Customer Relationship Management (CRM) system allowing us to streamline key internal processes through automation and cloud-based solutions to ultimately go paperless, reducing our carbon footprint.

**AviTrader MRO: With expendable parts, explain how you are meeting demand for hard to find niche aircraft components.**

**Polyi:** Magellan Expendables was originally formed as B&B Marketing in 1986 and is based in Florida. Acquired by Magellan in 2011, the company has grown to become a leading supplier and distributor of consumable and expendable (C&E) material to and on behalf of airlines, MROs and OEMs. Phillippe Courtay, VP for Business Development at Magellan Expendables, remarks that proactiv-

ity in meeting customer needs is paramount: "Demand for expendables such as hardware, connectors and cables can be sporadic and difficult to predict. To alleviate these risks, research into aircraft IPCs can identify common base references which can be marketed to customers." The C&E market is very competitive and given Magellan Expendables specialises in locating hard-to-find, long-lead time components to reduce customer repair turnaround times, having experience and on-hand data is key. Courtay continues; "The creation of a database for expendable references is crucial due to limited data being available. Industry knowledge and the procurement experience of our employees helps create this knowledge base".

**AviTrader MRO: Future developments in the pipeline?**

**Polyi:** The last few years have seen an increased emphasis on the impact of aviation on the environment and Magellan continues to work with its network of partners, from repair shops to teardown facilities, to ensure it meets and exceeds industry standards. Magellan recognises the shift towards new, more fuel-efficient aircraft types and has endeavoured to follow this trend by introducing newer engine types to our lease pool. We work with our network of repair partners to prolong the life of components whilst realising there is a point in time when older, less fuel-efficient technology aircraft are no longer practical and economical to operate. In support of global fleet trends, we are focussed on the acquisition of newer fuel efficient aircraft and engines to expand our product offering with the support of our parent, the Marubeni Group.



Engineer using WinAir in the maintenance hangar.  
All photos: WinAir

## In the hot seat.....

Kyle Vergeer, Managing Director, WinAir

### **AviTrader MRO: Why is best-of-breed software better than all-in-one software for managing maintenance and inventory?**

**Vergeer:** Best-of-breed software can outperform all-in-one software on nearly every occasion. From immediate gains to long-term benefits, it provides a more viable approach for managing day-to-day business. It will improve business efficiencies across all departments due to its specific focus. Contrarily, all-in-one software may produce bottlenecks that diminish productivity. Aviation operations know that companies that claim to have software that does everything will seldom live up to those expectations.

Best-of-breed software is highly focused and able to flourish within its niche. Since it is centered on efficiently and effectively completing specific tasks, it can deliver the results that it asserts. When it comes to tracking and managing aviation maintenance, best-of-breed software is superior to all-in-one software because this is its niche. Rather than trying to do everything at an adequate level, it focuses on being exceptionally good at, or proficient within, its area of specialisation.

### **AviTrader MRO: What about the user experience?**

**Vergeer:** Commonly, all-in-one software involves the combination of modules that were developed separately or were obtained via an acquisition. This produces clunky and buggy systems with poor navigation. Modules are loosely tied together with a patchwork of code that may cause user interface issues and can contribute to a lackluster user experience. Since it does not have a specific focus, all-in-one software generally lacks the attention to detail found in best-of-breed software.

With its specific focus, best-of-breed software provides a more fluid user experience, with simple navigation, and data-rich user interfaces. Typically, it can mirror real-world processes, which makes it easier to use. This mimicking of work steps significantly enhances the user experience.

When considering aviation maintenance software, having a specific focus is vital to enhancing usability. WinAir Version 7 is best-of-breed software built from the hangar floor up. By converting actual maintenance work steps into software processes, WinAir makes it easy for users to understand and take charge of the solution since they can instinctively apply their real-world maintenance skills to the software.

### **AviTrader MRO: Is best-of-breed software quicker to implement?**

**Vergeer:** Absolutely. When software attempts to do everything, it will take longer to implement because all departments utilising it must be trained during implementation. Best-of-breed software, however, is targeted towards only departments using the product. Consequently, there are fewer people to train, which accelerates the implementation timeline. Compared to all-in-one software, aviation operations can implement best-of-breed soft-



Kyle Vergeer - Managing Director - WinAir

ware faster, which produces a quicker ROI. At WinAir, our approach to implementation training is sequenced and can be customised to meet specific requirements. We offer different types of training and provide users with training documentation, access to our online LMS, and telephone and online support. These training and support mechanisms boost the implementation timeline so that operations can go-live expeditiously.

#### AviTrader MRO: Is there less risk?

**Vergeer:** There is far less risk with best-of-breed aviation maintenance software because fewer departments are using it and due to its unique focus. This focus is what makes best-of-breed software highly specialised. As a result, users receive better ongoing support and remain at the forefront of industry-specific advancements. At WinAir, our expertise alleviates risk associated with implementing a new product, while simultaneously instilling trust in our clients.

Conversely, all-in-one software can be a recipe for disaster. Placing faith in the successful deployment and use of a single, company-wide solution is a tremendous risk. If your company determines that a single system is right for all departments and it fails, all departments are at a loss.

In terms of aviation maintenance, most risks are not worth taking. They can lead to compliance issues, AOG situations, or may result in the loss of your AOC. When considering aviation maintenance software, less risk is always better, which makes best-of-breed software the ideal option. WinAir Version 7 is industry-leading and web browser-based, best-of-breed software that carries minimal risk, but offers maximal gains. It is supported

by a team of aviation professionals with the knowledge and expertise to help you achieve operational success.

#### AviTrader MRO: What about integrating with other systems?

**Vergeer:** Best-of-breed software, with open APIs like those of WinAir, has the power to integrate with the systems that work best for your departments. You can combine multiple best-of-breed systems to function together as one consolidated unit, instead of forcing departments to use all-in-one software with modules that don't meet their needs. Best-of-breed software offers companies the flexibility to continue using these systems in conjunction with their maintenance and inventory software.

If you're aiming to boost productivity, connect departments, and enhance transparency, then best-of-breed aviation maintenance software is the solution for your operation. WinAir Version 7 can do all of this and more. The software excels within its maintenance niche and has the power to integrate with and leverage the data from your flight ops system and financial solution to further improve how you manage your business.

With all-in-one software, there is often no ability to integrate because the belief behind this type of software is that it will replace all software at your operation. If there was a demand, an all-in-one software vendor might invest in the development of an add-on feature or module that would attempt to satisfy this need; however, these add-ons pale in comparison to what is available in a dedicated solution.

#### AviTrader MRO: What makes WinAir



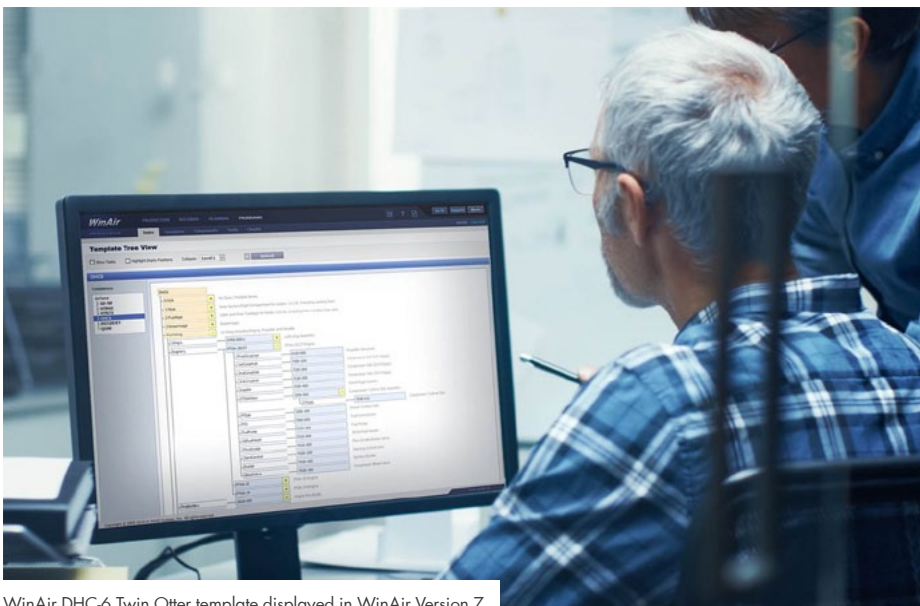
WinAir dashboards with gadgets displayed on dual computer monitors.

#### stand out?

**Vergeer:** In terms of aviation maintenance, you expect that the software you are using will accurately track and manage your maintenance programmes, provide thorough reporting functionality, and assist with proving compliance. Operations can rest assured knowing that this is WinAir's area of expertise, and has been the bedrock of the company's business since it was founded in 1988. We have the experience and data to rely on to act as our guide.

Another item that separates WinAir Version 7 from other best-of-breed aviation maintenance software is its ability to handle complex aircraft like CL-415s, P-3 Orions, and S-70s, with ease. Our team has the skills and industry know-how to assist with any task. We offer a variety of services, such as aircraft template building, process consultations, and data migrations, to speed up the transition to the software, and to provide support along the way. With WinAir Version 7's ability to integrate with flight ops systems and accounting software, aviation operations can save time, remove manual inputs, and obtain insight into valuable information. By integrating your flight ops system with WinAir Version 7, you gain access to real-time flight log data, which can improve maintenance planning, minimise AOGs, and provide a faster turnaround on maintenance. By integrating your accounting system with WinAir, you ensure that information is accurate, inventory counts are balanced, and that when transactions are approved in WinAir, they are automatically updated in your accounting software.

This ability to integrate WinAir Version 7 with flight ops and accounting software is a real game-changer. This means that aviation operations can take the best aviation maintenance and inventory control software and use it in tandem with the top accounting and flight ops software. By integrating these industry-leading systems, operations stand to benefit from streamlined processes, expedited work steps, and a significant boost to overall business efficiencies.



WinAir DHC-6 Twin Otter template displayed in WinAir Version 7



Massimo Claudio Comparini

Thales Alenia Space, a joint venture between Thales (67%) and Leonardo (33%), has appointed **Massimo Claudio Comparini** as Deputy CEO and Senior Executive Vice President Observation, Exploration and Navigation Business Line at Thales Alenia Space as well as CEO of Thales Alenia Space Italia, with immediate effect. Comparini succeeds **Donato Amoroso**. Comparini, former CEO at eGeos since 2016 and Director Line of Business Geo Information at Telespazio, has a long and proven track record in the space industry, from technology to services, and in the earth observation domain. He holds a master's Degree in Electrical Engineering, Remote Sensing and Radar Systems, University of Rome La Sapienza (Italy), and a Degree in Strategy from Graduate School of Business, Stanford University, CA (U.S.A.).



Neil Cairns

Acro Aircraft Seating has appointed **Neil Cairns** as the company's Chief Executive Officer effective from March 9, 2020. Cairns brings with him many years' aerospace seating experience, covering products in all seating classes. He has a wide-ranging track record of lean process improvement and performance improvement, most recently holding positions as the Vice President and General Manager at Collins Aerospace based in Tucson, Arizona and Winston Salem, North Carolina based in the U.S.A. and previously running the B/E Aerospace seating facility in Kilkeel, Northern Ireland.



John Bordeaux

**John Bordeaux** has been appointed as GECAS' Chief Investment Officer. He will take up the role from April 2020. Bordeaux will be responsible for the various teams that are involved in making GECAS' portfolio and investment decisions, namely Aircraft Trading, Commercial Operations and Portfolio Strategy. Having all these under one leader will ensure the company is taking a holistic view of its portfolio and buy-hold-sell decisions. Bordeaux is currently the Global Financial Planning & Analysis leader of GE Capital, a role he has held since May 2018. Prior to this, he has held several key roles in Finance and Capital Markets, namely serving in Managing Director roles in GE Energy Financial Services (EFS) and serving as Finance Leader for GE's Global Growth Sales & Project Finance team.

Regional aircraft lessor Nordic Aviation Capital (NAC), has appointed Gareth Halpin as Chief Funding Officer, effective April 6, 2020. Halpin will be based out of NAC's newly opened Headquarters in Limerick and will report to the company's CEO, Søren M. Overgaard. Prior to Avolon, Halpin served in several senior executive roles in the financial

services and aircraft leasing sector, as Deputy Head/Senior Manager of the Debt Restructuring division in IBRC bank and as Director of Marketing and Risk Management in Pembroke Group (now Standard Chartered Aviation Finance). He started his career with KPMG in the financial services sector. Furthermore, Morten Mikkelsen will assume the position of Chief Financial Officer with immediate effect. Mikkelsen will continue to be based in the Billund office and will report to the company's CEO, Søren M. Overgaard.



Sohaib Ahmed

Trenchard Aviation Group has appointed **Sohaib Ahmed** as its Technical Sales Manager. Ahmed has worked in the aviation industry for over eight years and has held several sales positions within aircraft cabin interiors and MRO businesses. With an extensive technical sales background across the aircraft cabin interiors sector, Ahmed has worked with many of the world's leading airlines, leasing companies and MROs delivering complex line-fit and retrofit projects. At Trenchard Aviation Group, he will be working closely with airlines, seating OEM's and aftermarket suppliers delivering sales of Life Vest Pouches and providing technical and commercial support from inquiry through to delivery and aftermarket care.



H. John Gilbertson

AAR has released that **H. John Gilbertson, Jr.**, retired Managing Director of Goldman Sachs Group Inc., has been elected to the Company's Board of Directors, effective immediately. The addition of Gilbertson increases the size of the Board from 11 to 12 directors. Gilbertson served as a strategic and financial advisor to clients of Goldman Sachs for 27 years as a Managing Director and as Partner-in-Charge of investment banking services for the Midwest Region.



James D. Taiclet

The Board of Directors of Lockheed Martin has elected **James D. Taiclet** as President and CEO, effective June 15. Taiclet will continue to serve as a member of the corporation's board, which he joined in 2018. He has served as chairman, president and CEO of American Tower Corporation since 2004 and CEO since 2003. During that time, American Tower grew significantly and increased its market capitalization from approximately US\$2 billion to approximately US\$100 billion. Taiclet will succeed **Marillyn A. Hewson**, who has served as Chairman, President and CEO since 2014 and President and CEO since 2013. Hewson will become executive chairman of the board, also effective June 15, subject to her re-election to the board by the stockholders at the upcoming annual meeting.