

MRO

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Components: Supply & Repair

Covid-19
Planning for the unplanned

Q&A:
Magnetic MRO

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

Email: p.jorssen@avitrader.com
Tel: +1 (424) 644-6996
www.avitrader.com

Editorial

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

Cover image: Patrick Delapierre

Design

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

Advertising inquiries

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

Registration

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Opinion

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Working in the new normal

SITA data shows that flight volumes dropped 80% in April compared to 2019 and by May 2020 airlines had grounded their fleets and cut flight schedules by 80% globally. Covid 19 is having unprecedented impact in all areas of the aviation and travel sectors and there is no doubt the industry will have to change. Recovery will come back; but not as quickly as we might like.

Airlines and airports will take on the initial wave of changes that will dictate the 'new normal' for air transportation. As some operators begin to resume air services it's clear that flying will be different, as SITA have pointed out temperature checks, social distancing, masks and more touchless technology will be enabled.

The MRO and aftermarket sectors are bracing for impact. In this edition Jeff Lund, President and CEO at Kellstrom Aerospace talks about navigating through uncertain times and the market outlook post Covid-19, which makes for some very insightful reading. As he rightfully highlights, the next few months and quarters will be critical, and we have a significant amount of heavy lifting to do as an industry.



The aftermarket for components is always a popular subject for us and in this installment 10 senior industry executives from around the world have contributed their insights in the market for supply, demand and repair strategies and taking into account the current challenges facing the industry. A huge thanks to all the participants for taking part especially in difficult times like these and for staying upbeat and showing faith and resilience in the market.

Enjoy the read!

Keith Mwanalushi
Editor



The face of air transport is changing
Photo: WFS

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Aerologic GE90 engine
Photo: MTU

MTU Maintenance and Aerologic extend GE90-110B contract

MTU Maintenance and its long-term customer Aerologic have renewed their exclusive GE90-110B contract by a further twelve years. The contract encompasses multiple aspects of MTU Maintenance's PERFORMPlus offering, including engine trend monitoring, fleet management and on-site support as well as spare engine provision. Aerologic is a 50/50 joint venture between DHL Express and Lufthansa Cargo based at Leipzig/Halle Airport in Germany. The cargo expert boasts the most modern freighter fleet in Europe, made up of solely Boeing 777F aircraft capable of carrying full cargo loads of over 100 tons to a range of around 9,000 kilometers.

proved an expansion in capabilities to permit the approval of flight tests. Flight tests are sometimes required by EASA and the FAA for demonstration of compliance for aircraft modifications. When requested, Eirtech can now provide a turnkey solution for customers which would include developing a flight test plan, approving test conditions, taking part in the test flight, and ultimately approving the performance of the modification. Director of Engineering, Keith McKerchar said: "While flight testing can be expensive, in some cases it is needed to support a specific customer requested modification to the aircraft. This new privilege will allow Eirtech to define the requirements and perform all the necessary testing to support the more significant modi-

fications being requested by our customers. Having this internal capability allows Eirtech to control the test program without the involvement of another approved test house, and hence control the costs and timings of any tests".

Rolls-Royce launches first immersive virtual reality training

As part of Rolls-Royce's IntelligentEngine vision, the company is further expanding the use of immersive Virtual Reality technology for customer training. The latest addition to the remote training program is an instructor-led distance learning course, providing a comprehensive overview of the construction, design and operation of the Rolls-Royce BR725 engine that powers Gulfstream's current flagship G650 business aircraft family. After completion of this comprehensive two-day training course, participants will be able to service the engine and undertake non-routine maintenance. While not intended to completely replace practical training, Rolls-Royce see the value Virtual Reality adds for customers, such as higher flexibility and the elimination of the need to ship a full-size training engine. The user finds themselves as part of two realistic scenarios – the engine installed on the aircraft in a virtual hangar and the BR725 engine alone, just like it would be in in-person training courses. The immersive environment allows users not only to watch the process steps to get familiar with the respective task, but to interact with the engine and the tools, and actually accomplish the task under the constant supervision of the instructor.

The Av8 Group announces new facility expansion

The Av8 Group has completed its 10,000 ft² expansion at their Houston location. This will provide additional space for the company's specialized service of landing gear and other component overhauls. The original facility occupied 20,000 ft² of space, and now with the added square feet will have a combined total of 30,000 ft², to service the growing requests for landing gear and component overhauls. The construction started last fall and final touches were completed in March 2020 with the capacity to accept additional projects.

Eirtech Aviation Services expands scope to include flight test approvals

Eirtech has announced that EASA has ap-



Rolls-Royce offers instructor-led distance learning courses
Photo: Rolls-Royce



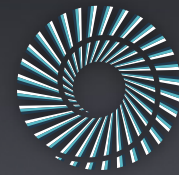
Pratt & Whitney customer training center - the new normal
Photo: P&W

Pratt & Whitney customer training centers adapt to meet their mission

Remote learning, phased reopening and other measures designed to deliver the highest-quality training even through a pandemic: that is how Pratt & Whitney Customer Training Centers in China, India and the U.S. meet challenging times. The China Customer Training Center (CCTC) reopened in early April and has since delivered three in-person GTF engine courses to members of the Aircraft Maintenance and Engineering Corporation and Chinese airline Qingdao. In preparation for the courses, which focused on retrofitting the main gearbox of the GTF, the training center made sure it followed all government and company health and safety protocols. Practicing social distancing guidelines and the wearing of personal protective equipment, the CCTC placed students' health and wellbeing as a top priority. All three training centers offer remote training courses to employees, including theory-based engine maintenance and familiarization courses. The CTC has also tailored remote courses for employees to learn about aspects of Pratt & Whitney's commercial engines business, such as marketing, leasing and campaign analysis.

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The first A350-900 arrives at product division VIP & Special Mission Aircraft Services
Photo: LHT

LHT starts work on Airbus A350-900 for German Federal Government's Special Air Mission Wing

Lufthansa Technik has begun working on the cabin conversion of the first of three Airbus A350-900s for the German Federal Govern-

ment's Special Air Mission Wing. The aircraft, with the temporary civil registration D-AGAF (later military registration 10+03), arrived at Hamburg's International Airport in Fuhlsbüttel, where it will be given a government cabin by Lufthansa Technik's VIP & Special Mission Aircraft Services product division. As

this aircraft is to be made available to the German Air Force very soon, it will initially be equipped with a special transitional cabin for the transport of representatives of the Federal Government and its accompanying delegations. The corresponding preliminary work had already begun in November last year in Lufthansa Technik's VIP workshops. Once the aircraft has received its cabin, it is scheduled to be delivered to the customer by the end of July. The transitional cabin is tailored to the specific requirements of the customer. It will be equipped with office and conference areas, adjoined to a multifunctional lounge area. The rest of the cabin space will be available to the accompanying delegations. It will have generous seat spacing, an appropriate number of washrooms and modern kitchen equipment. Only after the sister aircraft 10+01 and 10+02, which are currently still under construction, receive a fully featured VIP cabin from Lufthansa Technik next year, the transitional cabin in 10+03 will also be exchanged for one.

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Photo: Airbus cabin cargo flexibility

Airbus developing solution for airlines to use widebody aircraft for pure cargo operations

Airbus is developing a modification for A330 and A350 family aircraft which will enable airlines to install freight pallets directly onto the cabin floor seat tracks, after removal of the economy-class seats. This solution will help any airline's own business continuity, and also alleviate the global shortage of 'belly-freight' air cargo capacity due to the widespread grounding of long-haul aircraft in the context of the COVID-19 pandemic. Additionally, it helps the industry to address the high demand for humanitarian flights to rapidly transport large quantities of medical equipment and other supplies over large distances to where they are needed. Compared with loading cargo onto seats, this Airbus solution facilitates easier and quicker loading and unloading operations, as well as reduced 'wear & tear' to the seats themselves. Other important benefits include the added security of robust fire protection, and the 9g load restraint capability to prevent anything from shifting in flight. The modification is packaged for operators as an Airbus Service Bulletin (SB). Under this arrangement Airbus defines the engineering workscope and also manages the process for obtaining the one-time certification from the European Union Aviation Safety Agency (EASA).

STS Aviation Services gains AS9110C accreditation in the U.K.

STS Aviation Services (STS), an MRO provider to the global aviation industry, is now AS9110C certified in the United Kingdom. This certification grants STS Aviation Services the authority to maintain, repair and overhaul both civilian and military aircraft in accordance with aerospace law and global regula-

tory requirements. Having recently entered the MRO market in the United Kingdom after acquiring Apple Aviation and purchasing the former MAEL base maintenance facility in Birmingham, STS Aviation Services considers this AS9110C accreditation a significant signal of progress and a great indicator for what's to come.

GA Telesis MRO Services Group receives Chinese CAAC landing gear certification

GA Telesis' MRO Services Group has received approval from the Civil Aviation Administration of China (CAAC) for its Miami-based landing gear operation. This new rating allows GA Telesis MRO Services to repair and overhaul CRJ900 landing gears for China Express Airlines (China Express). In 2019, the company has entered into a long-term agreement to overhaul landing gears for China Express' entire fleet of CRJ900 aircraft.

The maintenance commenced this year on a US\$27 million contract. Landing gear repairs and overhauls for this aircraft type will occur in the Miami facility located across from Miami International Airport. GA Telesis MRO Services began landing gear overhauls mid-2019 and has entered into several contracts to perform overhaul and repairs on regional aircraft. "This certification provides the Company with an entry point into the Asia-Pacific market and fulfills its strategic plan to increase its product offerings for this year," said Pastor Lopez, President MRO Services. The company will deliver the first landing gear shipset this month.

AvAir and Lufthansa Technik sign aftermarket sales agreement

AvAir, an inventory solutions provider for the aviation aftermarket, and Lufthansa Technik have signed a long-term aftermarket sales agreement. AvAir has purchased the majority of Lufthansa Technik's overstock of rotatable spares inventory. The Arizona-based company acquired 9,000+ line items, comprising of components including IDGs (Integrated Drive Generator), FADECs (Full Authority Digital Engine Control) and Starters. The first components will be delivered immediately from Lufthansa Technik facilities in Germany to AvAir facilities in Ireland and Chandler, Arizona in the United States. The complete transfer will be finalized within the next three months. Under a profit share agreement, Lufthansa Technik receives a share of the proceeds from the resold components. All parts are in serviceable or better condition and come from the Lufthansa Airline Group and other Lufthansa Technik customer fleets. The majority of the parts has been maintained by Lufthansa Technik.



AvAir LHT rotatables
Photo: LHT



(l) "Janus Seat" and "Glassafe" (r)
Photo: Aviointeriors

Italian manufacturer Aviointeriors develops Corona seating concept

Aviointeriors, the Italian company producing aircraft cabin interiors and passenger seats, has developed two new seating concepts for after the COVID-19 crisis. One of the designs is called "Glassafe", a kit-level solution that can be installed on existing seats to make close proximity safer among passengers sharing the same seat. "Glassafe" is made of transparent material to the entire cabin harmonious and aesthetically light, but perfectly fulfilling the objective of creating an isolated volume around the passenger in order to avoid or minimize contacts and interactions via air between passenger and passenger, so as to reduce the probability of contamination by viruses or other pathogens. "Glassafe" is supplied in various executions with fixing systems to the seat that allow easy installation and removal. The other option is called the "Janus Seat", and this proposal is distinguished by the reverse position of the center seat of the triple to ensure the maximum isolation between passengers seated next to each other. While passengers seated on the side seats, aisle and fuselage, continue to be positioned in the flight direction as usual, the passenger sitting in the center is facing backwards. Each place of the "Janus" seat is surrounded on three sides by a high shield that prevents the breath propagation to occupants of adjacent seats. Both seat-concepts are made of easy cleaning and safe hygienisation materials.

Eirtech and Resonate Testing collaborate to support passenger to cargo modification for COVID19 flights

Eirtech Aviation Services will support one of Europe's largest leading airlines with a request to transport essential personal protective equipment (PPE) and other medical supplies in the cabin. Eirtech, in conjunction with Resonate Testing, successfully carried out flamma-

bility tests relating to the installation of cargo bags within the cabin to allow the transportation to go ahead. Eirtech provided Part 21 engineering support to enable the transportation of the PPE and other vital medical supplies relating to the current Covid-19 crisis.

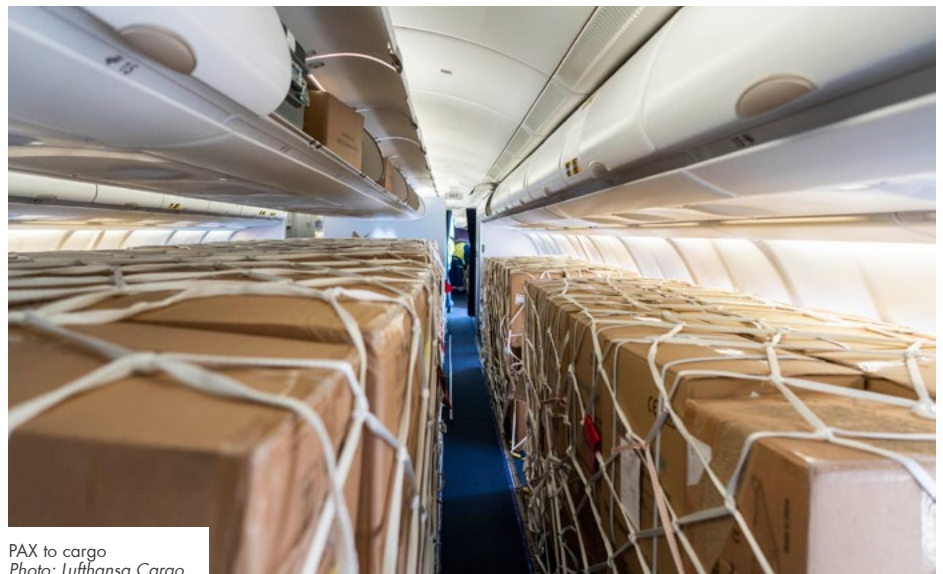
APOC Aviation acquires A319 for teardown

APOC Aviation has purchased an A319-111 from SMBC Aviation Capital for teardown. MSN 3380 was previously operated by Spanish flag-carrier, Iberia, and is the fourth A320 family plane acquired this year. Two are already being parted out in Marana, Arizona, and this particular aircraft is already located at eCube in Wales, awaiting the easing of COVID-19 restrictions before work can begin. Over the next few months, the secured A319 parts will be assessed, and then APOC's audited group of repair stations worldwide will return the stock to serviceable status. All stock will be located at its Rotterdam warehouse forming part of the

Company's rapidly expanding inventory of spares.

Strong demand for temporary operational changes from passenger to cargo aircraft

Lufthansa Technik's new technical and engineering services for temporary operational changes from passenger to cargo aircraft have met with great interest in the aviation market. So far, the cabin modification experts of the company have received enquiries from more than 40 airlines. More than 15 projects for different aircraft types are already in the implementation phase. A special highlight is the support of the operational change of a first Airbus A380 of an undisclosed customer, with which Lufthansa Technik has now been awarded. "Over the past days, we have received strong interest from different airlines regarding our passenger to freighter service capabilities," explained Henning Jochmann, Senior Director Aircraft Modification Base Maintenance at Lufthansa Technik. "As the work scope comprises much more than just taking out seats, you need engineering experts who know exactly what the challenges are and how to document the technical solutions correctly so that the aviation authorities agree. The current exemption and our solution for it can be transferred to our Supplemental Type Certificate (STC) at a later point of time without major adjustments. This means that anyone who opts for LHT's exceptional solution now can easily switch to the permanent STC solution later." Lufthansa Technik is currently working flat out to obtain STCs for all common aircraft types so that airlines all over the world can quickly convert their passenger aircraft into auxiliary freighters.



PAX to cargo
Photo: Lufthansa Cargo



Photo: Magnetic MRO Engine Line Maintenance

Magnetic MRO expand engine workshop capabilities

Magnetic MRO, a Total Technical Care and asset management organization, has acquired tooling, dedicated to the engine workshop and drastically expanding its capabilities which already have received full EASA AND FAA approvals. New tooling has already been delivered to Magnetic MRO's engine workshop in Tallinn, Estonia. This latest addition adds more than 40 new services to the company's list, including the ability to perform modular maintenance and repair of CFM56-5B and CFM56-7B engines. Other new capabilities include Fan, LPT MM, Hot section modules replacement, special procedures, partial and full replacement of HPT blades, HPT NGVs, HPT shrouds, LPT Stage 1 Vanes and others.

ST Engineering secures S\$1.6 billion worth of new contracts for first-quarter 2020

Singapore Technologies Engineering (ST Engineering) has secured new contracts worth about S\$1.6 billion, secured by its Aerospace and Electronics sectors in the first quarter of 2020. These contracts are over and above a defense contract that its Land Systems arm secured. The group's aerospace sector secured about S\$838 million across its spectrum of aviation manufacturing and MRO businesses. The MRO contracts included A320 heavy maintenance contracts and CFM56-7B engine maintenance contracts from Chinese airlines, and a component Maintenance-By-the-Hour (MBH) contract from a Southeast Asian airline to provide comprehensive component maintenance services for its entire fleet of Boeing 737 and Bombardier Q400 aircraft. These first-quarter contracts comprise those previously

announced in February during Singapore Airshow 2020, namely: multi-year engine and component MRO contracts from a South Korean airline; a five-year nacelle maintenance contract and a three-year airframe heavy maintenance contract. The group's electronics sector secured about S\$730 million worth of contracts for products and solutions in smart mobility, cybersecurity and data analytics, as well as training and simulation. (US\$1.00 = S\$1.43 at time of publication.)

GE, Brightwater UAG sign agreement for T700 engine support

GE Aviation has signed an exclusive Authorized Repair and Services Provider Agreement with Brightwater United Aero Group (UAG) to cover certain non-military customers flying GE's reliable T700 helicopter engine. Brightwater UAG, based in Shelton, Connecticut, in conjunction with Brightwater Arista Aviation

Services Group, Alabama, and the worldwide network of GE Licensed Maintenance, Repair and Overhaul Facilities, supports T700 engines powering restricted category and public use Blackhawk helicopters. This includes Blackhawks performing utility and firefighting missions. The agreement covers the repair, upgrade, lease and exchange of T700 engines and parts for these fleets. It not only includes the use of new OEM parts, but now includes the opportunity to incorporate used serviceable material that meets OEM standards.

Heston MRO adds Part 147 Technical Training Organisation

Heston MRO MTOE (Heston), the independent MRO organization headquartered in Brisbane, Australia, has added Part 147 Technical Training capability to its range of services. On April 7, the Australian Civil Aviation Safety Authority (CASA) approved Heston and issued a Part 147 Approval Certificate, allowing it to deliver technical training courses, conduct examination, as well as issue completion certificates to qualifying trainees. The launching of Part 147 capability covers Airbus 318/319/320/321 ceo and neo generations with all types of engines, with the inclusion of both theory and practical training courses. The rapid course expansion is planned to include courses for the Airbus A318/319/320/321, Boeing 787- 8/9/10, and others. The newly acquired Part 147 approval allows Heston to conduct training courses via Virtual Synchronous Delivery (VSD). This means trainees can be located in any one of Heston's training facilities in either Brisbane, Sydney, Melbourne or Perth whilst the instructor can be located at a different training facility, delivering training via a video conference platform.



Photo: Heston MRO



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Photo: HAECO's aircraft interior stowage solutions

HAECO launches passenger aircraft interior stowage devices

HAECO Cabin Solutions has launched new, certifiable devices to allow package stowage in the main passenger cabin. As the COVID-19 environment developed, the company noted that airlines were beginning to use passenger flights strictly for cargo. At the same time, social distancing directives were being instituted nationwide. HAECO quickly developed solutions to allow airlines to carry cargo and passengers at the same time, optimizing passenger and cargo yield, using packages to distance passengers, and maintaining proper weight and balance requirements. Four unique solutions moved from concept to offerable in less than a month. The solutions will be certified through a Supplemental Type Certificate (STC) and are unique in the amount of weight that can be carried. The palletized variant can hold 1000 lbs., the all-in-one seat frame can hold 500 lbs., and the seat and floor storage systems can each hold up to 240 lbs. These options give airlines specific load authorizations and the capability of carrying larger items in the cabin that otherwise would have been stored in the aircraft's belly, except for hazardous materials. The solutions build upon existing seating and interior technologies and can be delivered in four to six weeks. Variants can be combined for both single- and twin-aisle aircraft to achieve an ideal operational payload. The installation process follows techniques used for economy seating, which can be accomplished quickly and without the need for special tools.

GAMECO starts first B737-800 PTF conversion

On May 18, 2020, a B737-800 was towed into GAMECO hangar, marking the inauguration of its first B737-800 PTF (passenger to freighter) conversion after half-year preparation. Nowadays, under the pandemic prevention and control activities going on around the world, a serious shortage of capacity has been exposed in the air cargo market. With a surge in demands for all freighters, the opening of this GAMECO PTF production line can meet the increasing air cargo transportation demands home and abroad, as well as contribute to the capacity expansion of global air cargo market. It

is the first time GAMECO has carried out a PTF conversion on a B737-800, a leap in GAMECO's maintenance capacity and a solid step forward to become a top-class MRO in the world. It is reported that the second B737-800 PTF conversion production line will be put into action in the second half of this year.

Airbus delays increasing output of A220 until next year

With the COVID-19 pandemic dramatically affecting demand for new aircraft, Airbus has decided to delay ramping up the increase in production of its Canada-based A220 narrow-body jet until next year but has not opted to reduce production either. By the middle of 2021, the European planemaker anticipates it will increase current output of four jets per month which are being built at the Mirabel plant near Montreal, while plans to increase production of the jet to four a month at the Mobile, Alabama facility are as yet unchanged. Having acquired the program from Bombardier Inc, Airbus had anticipated producing up to ten of the jets per month by 2025, but this is now subject to revision. Current production at the Mirabel facility has been suspended until at least May 4, owing to the coronavirus outbreak as it is not classed as an essential business operation, while last month Airbus announced that narrow-body jet production would be reduced to forty units per month, while wide-body jet production would be reduced by 40 per cent.



Airbus A220-300
Photo: Airbus



Photo: HAECO Composite Services adds GE90 fan case repair capability

HAECO Composite Services adds GE90 fan case repair capability

HAECO Composite Structures (Jinjiang) has added capability for preventive maintenance inspections and associated repairs on fan stator modules for GE90 engines on Boeing 777 aircraft. Established in 2009 and located in Jinjiang, Fujian province, Mainland China, HAECO Composite Services is a dedicated composite maintenance, repair and overhaul (MRO) facility for aircraft nacelles, radomes, and aerostructures. GE Aviation is the GE90 engine's original equipment manufacturer (OEM). The scope of work includes ultrasonic inspections of composite panels and other metallic components of the fan stator module. Preventive maintenance inspections of the fan stator modules for GE90-100/115 engines are mandated by the OEM to be performed upon specified engines once they reach 50,000 flight hours. This new capability has been deployed by HAECO Composite Services on a number of Asian customers' fan cases.

Kellstrom Aerospace completes acquisition of A320-214 for teardown

Kellstrom Aerospace has acquired an A320-214 (MSN 2180) with serviceable CFM56-5B4/P engines. The A320 airframe was

acquired for disassembly in the U.K. The engines will be remarketed through Kellstrom Aerospace Asset Management. This project will enhance Kellstrom Aerospace's unique and innovative lifecycle solutions portfolio by supporting both Kellstrom Aerospace Asset Management division with additional short-to-mid-term lease assets and the aftermarket supply business.

Air Canada re-configures passenger cabins on three aircraft to transport more vital supplies and necessary cargo

Air Canada is re-configuring the cabins of three of its Boeing 777-300ER aircraft to give them additional cargo capacity. The first aircraft conversion is complete and is now in service, with the second and third aircraft to be completed shortly. The three Boeing 777-300ER aircraft are being converted by Avianor, an aircraft maintenance and cabin integration specialist, at its Montreal-Mirabel facility. Avianor developed a specific engineering solution to remove 422 passenger seats and designate cargo loading zones for light weight boxes containing medical equipment and which are restrained with cargo nets. This modification has been developed, produced and implemented within six days. All operations have been certified and approved by Transport Canada. Through its cargo division, Air Canada has been using mainline aircraft that would otherwise be parked to operate cargo-only flights. The aircraft on these flights carry no passengers but move time-sensitive shipments, including urgent medical supplies, and goods to support the global economy, in their baggage hold.

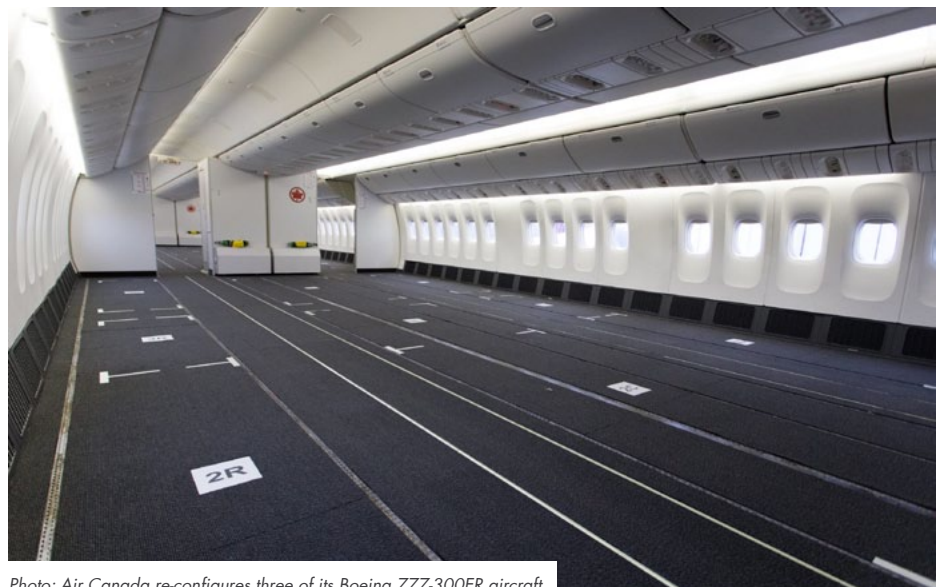


Photo: Air Canada re-configures three of its Boeing 777-300ER aircraft

Spirit AeroSystems posts first-quarter net loss of US\$167.5 million

Spirit's first-quarter 2020 revenue was US\$1.1 billion, down 45% from the same period in 2019, primarily due to the 737 MAX production suspension directed by Boeing that began on January 1, 2020. Deliveries decreased to 324 shipsets during the first quarter of 2020 compared to 453 shipsets in the same period of 2019, including Boeing 737 MAX deliveries of 18 shipsets compared to 152 shipsets in the same period of the prior year. Spirit's backlog at the end of the first quarter of 2020 was approximately US\$42 billion, down US\$1 billion from the previous quarter, with work packages on all commercial platforms in the Boeing and Airbus backlog. Operating loss for the first quarter of 2020 was US\$(167.5) million, down compared to operating income of US\$233 million in the same period of 2019. As a result of Boeing's 737 MAX production suspension that began on January 1, 2020, Spirit recognized the lower margin driven by significantly less deliveries, excess capacity costs of US\$73.4 million, and restructuring expenses of US\$42.6 million for cost-alignment and headcount reductions. Cash from operations in the first quarter of 2020 was US\$(331) million, down from US\$242 million in the same quarter last year, primarily due to negative impacts of working capital requirements largely driven by supplier payments made following the 737 MAX production suspension, partially offset by US\$215 million received related to the February 2020 memorandum of agreement with Boeing. Free cash

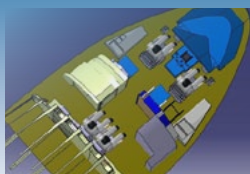
flow in the first quarter of 2020 was US\$(362) million, down compared to US\$201 million in the same period of 2019.

Chorus Aviation reports first-quarter 2020 financial results

Chorus Aviation has reported a net loss of CA\$17.3 million for the first quarter of 2020, a period-over-period decrease of CA\$50.7 million due to the change in unrealized foreign exchange of CA\$55.1 million. Adjusted net income of CA\$25.0 million, an increase of CA\$6.0 million quarter-over-quarter due to the growth in the Regional Aircraft Leasing segment was offset by a reduction in the Regional Aviation Services segment. The company reported adjusted EBITDA of CA\$88.7 million, an increase of CA\$14.0 million over first quarter of 2019. Chorus reported increased cash and committed facilities to over CA\$265 million through securing a two-year US\$100.0 million unsecured revolving credit facility along with principal and interest payment deferrals for certain aircraft loans until September 30, 2020. The company is planning to commence operation of a Dash 8-400 Simplified Package Freighter under the Air Canada Express banner, allowing Chorus to transport loose load cargo like medical supplies, personal protective equipment and other goods needed to support the ongoing fight against COVID-19. (US\$ 1.00 = CA\$1.41 at time of publication.)

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Willis Lease Finance reports first-quarter pre-tax profit of US\$8.5 million

Willis Lease Finance has reported first-quarter pre-tax profit and total revenues of US\$8.5 million and US\$81.6 million, respectively. The company's first-quarter 2020 pre-tax results were impacted by both lower revenue in the core leasing business, which was influenced by a reduction in reported asset usage and reduced spare parts sales, and the one-time expense associated with its Willis Engine Structured Trust II re-financing. Aggregate lease rent and maintenance reserve revenues were US\$66.9 million for the first quarter of 2020. "The Company experienced another quarter of profitability but on lighter revenues primarily driven by the decline in global flight traffic, which led to lower maintenance revenues and spare parts' sales," said Charles F. Willis, Chairman and CEO. "We recognize that the COVID-19 pandemic is putting a lot of strain on our lessee customer base and we do not see that correcting quickly. We therefore remain highly focused on protecting our business while continuing to deliver for our customers."

Mitsubishi and Bombardier to close acquisition of Canadair Regional Jet program on June 1

Mitsubishi Heavy Industries and Bombardier have agreed that all closing conditions have been met and the transaction pertaining to the acquisition of the Canadair Regional Jet (CRJ) Program will close on June 1, 2020. The Program will be operated under the newly created group entities of MHI RJ Aviation Group (MHIRJ) and will commence upon closing. As part of the acquisition, MHI will acquire the maintenance, support, refurbishment, marketing, and sales activities for the CRJ Series aircraft, along with the type certificates. This includes the CRJ-related services and support network mainly located in Mirabel, Québec, and Toronto, Ontario in Canada, Bridgeport, West Virginia, and Tucson, Arizona in the United States. CRJ spare parts will continue to be distributed from depots in Chicago, Illinois and Frankfurt, Germany. Complementary to MHI's existing commercial aircraft business, MHIRJ will provide a holistic servicing and support solution for the global aircraft industry including the CRJ Series aircraft and, eventually, for the Mitsubishi SpaceJet family of next-generation regional jets.

UAS Holdings completes acquisition of TAG Aero and Unique Airmotive Services, companies to merge

TAG Aero and Unique Airmotive Services have completed a dual acquisition and merger facilitated by Mill Hill Capital. UAS Holdings Company has been formed as the parent company and migrates both facilities under one brand, TAG Aero. The combined companies will bring together a leading APU repair station with capabilities reaching 20,000 aircraft worldwide. Unique Airmotive Services, located in South Carolina, has specialized in the repair and overhaul of APUs since 2011 and has in-house capabilities for the GTCP331-200ER, GTCP331-250H, GTCP36-150 Series, GTCP85 Series and the APS2000. TAG Aero, founded in 2012 and based in Florida, specializes in the purchase, sale, and lease of all APU models for commercial and regional aircrafts. In 2018, TAG Aero acquired FAA/EASA 145 repair station certification for the repair and overhaul of the GTCP131-9A and GTCP131-9B APU. Managing partners, Myles Thomas and Roger Brochu, seek to acquire additional capabilities and build comprehensive programs to advance industry growth. The alliance of TAG Aero and Unique Airmotive Services is a collaboration between two industry leaders within the APU sector. Both Thomas and Brochu have significant experience and

recognition in MRO, aftermarket sales and the leasing of APU. They will now join forces to create a new and unique path for the APU industry.

AerCap reports US\$276.8 million net income for first-quarter 2020

AerCap has reported that net income for the first quarter of 2020 increased by 18% to US\$276.8 million, from US\$234.2 million for the same period in 2019. Basic lease rents were US\$1,030.8 million for the first quarter, compared with US\$1,075.3 million for the same period in 2019. Maintenance rents and other receipts were US\$134.3 million, compared with US\$86.8 million for the same period in 2019. Net gain on sale of assets for the first quarter of 2020 was US\$58.4 million, relating to 12 aircraft sold for US\$265 million, compared with US\$21.5 million for the same period in 2019, relating to 19 aircraft sold for US\$340 million. The increase was primarily due to the composition of asset sales. As of March 31, 2020, AerCap's portfolio consisted of 1,372 aircraft that were owned, on order or managed. The average age of its owned fleet as of March 31, 2020 was 6.2 years (2.5 years for new technology aircraft, 11.5 years for current technology aircraft) and the average remaining contracted lease term was 7.5 years.

O2 Aero Acquisitions acquires Aerox Aviation Oxygen Systems

O2 Aero Acquisitions has acquired Shaw Aerox (Aerox), a leading designer and manufacturer of installed and portable oxygen systems and accessories for aviation and medical users, for an undisclosed amount. Scott E. Ashton, O2 Aero Acquisitions Managing Director, has been named President and CEO. The company, which has been rebranded as Aerox Aviation Oxygen Systems, LLC, was established in 1981 and provides the aviation industry with innovative oxygen delivery systems and products for general aviation, EMS, medical, and OEM manufacturers. Among its products are installed cabin emergency oxygen systems for pressurized aircraft, portable oxygen systems for light aircraft operators, personal emergency oxygen systems, and TSO-approved oxygen masks for business aircraft. Aerox pioneered long-duration portable oxygen systems with its Aerox® OxySaver Conserving Cannula. Aerox also operates an FAA Repair Station and is ISO9001 and AS9100D certified.

Boeing posts first-quarter net loss of US\$641 million, will reduce workforce

Boeing has posted first-quarter revenue of US\$16.9 billion, a net loss which amounted to US\$641 million, primarily reflecting the impacts of COVID-19 and the 737 MAX grounding. Boeing recorded operating cash flow of US\$-4.3 billion. As the pandemic continues to reduce airline passenger traffic, Boeing is seeing significant impact on the demand for new commercial airplanes and services, with airlines delaying purchases of new jets, slowing delivery schedules and deferring elective maintenance. To align the business for the new market reality, Boeing is taking several actions that include reducing commercial airplane production rates. The company also announced a leadership and organizational restructuring to streamline roles and responsibilities and plans to reduce overall staffing levels with a voluntary layoff program and additional workforce actions as necessary. Boeing has also taken action to manage near-term liquidity, as it has drawn on a term loan facility; reduced operating costs and discretionary spend-

ing; extended the existing pause on share repurchases and suspended dividends until further notice; reduced or deferred research and development and capital expenditures; and eliminated CEO and Chairman pay for the year. Access to additional liquidity will be critical for Boeing and the aerospace manufacturing sector to bridge to recovery, and the company is actively exploring all of the available options. Boeing believes it will be able to obtain sufficient liquidity to fund its operations.

MTU Aero Engines presents figures for first quarter of 2020

In the first quarter of 2020, MTU Aero Engines generated revenue of €1,272.7 million, an increase of 13% compared with the prior-year period (2019: €1,131.2 million). The operating profit declined by 3% from €187.6 million to €181.8 million due to the revenue mix. The adjusted EBIT margin was 14.3% (2019: 16.6%). Adjusted net income was €128.0 million, compared with €133.5 million in the prior-year period. In the first quarter of 2020, the highest revenue growth at MTU was in the commercial maintenance business, where revenue rose by 21% to €794.9 million (1-3/2019: €655.1 million). The main source of revenue was the V2500 for the classic A320 family. Adjusted EBIT increased by 16% from €56.8 million to €65.7 million. The EBIT margin was 8.3%, compared with 8.7% in the same period of 2019. Revenue in the commercial engine business increased by 4% from €385.6 million to €399.3 million. The main revenue drivers were the V2500, the PW1100G-JM for the A320neo and the GEnx, which is used in the Boeing 787 and

747-8 models. In the OEM business, adjusted EBIT declined by 11% to €116.2 million in the first quarter (1-3/2019: €130.5 million). The adjusted EBIT margin was 23.4%, compared with 26.6% in the prior-year period. MTU's order backlog at the end of the first quarter was €19.4 billion (December 31, 2019: €19.8 billion). The majority of these orders related to the V2500 and the Geared Turbofan™ engines of the PW1000G family, especially the PW1100G-JM for the A320neo.

Airbus reports first-quarter 2020 net loss of €481 million

Airbus has reported consolidated financial results for its first-quarter 2020. Consolidated revenues decreased to €10.6 billion, down 15% compared to the first-quarter of 2019, reflecting the difficult market environment impacting the commercial aircraft business with 40 less deliveries than a year earlier, partly offset by a better mix and a more favorable foreign exchange environment. A total of 122 commercial aircraft were delivered (Q1 2019: 162 aircraft), comprising eight A220s, 96 A320 Family, four A330s and 14 A350s. Airbus Helicopters delivered 47 rotor-craft (Q1 2019: 46 units) with its 19% increase in revenues reflecting the favorable delivery mix and growth in services. Revenues at Airbus Defense and Space were stable year-on-year. One A400M transport aircraft was delivered in the quarter. Airbus reported EBIT Adjusted of €281 million, down 49% from the previous year. The company reported a net loss of €481 million for the first-quarter. Consolidated free cash flow amounted to €-8,030 million and included the payment of €



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3.6 billion in penalties related to January 2020's compliance agreement with the authorities. (€1.00 = US\$1.08 at time of publication.)

LCI launches US\$100 million helicopter co-investment vehicle with Thora Capital and RIVE Private Investment

Helicopter lessor LCI, the aviation division of the Libra Group, has strengthened its leasing platform with the establishment of a new co-investment vehicle with Thora Capital and RIVE Private Investment as partners. The transaction covers six Leonardo AW139s and three Airbus H130 helicopters, all of which have long-term, secure debt financing in place. The helicopters, which are valued at over US\$100 million, are currently deployed in Australia and the U.S.A. LCI will act as servicer for the co-investment vehicle. The new arrangement is Thora Capital and RIVE Private Investment's first with LCI, and follows the successful closure by LCI of a similar co-investment vehicle in late 2019.

Seabury Capital advises HAECO Group on acquisition of Jet Engine Solutions

Seabury Capital Group's London- and New York-based Aerospace and Defense (A&D) Investment Banking teams assisted Hong Kong Aircraft Engineering Company Limited (HAECO Group), in the acquisition of Texas-based aero-engine maintenance provider, Jet Engine Solutions (JES). The acquisition marks HAECO Group's debut in North America's on- and near-wing, aero-engine market, forming part of HAECO Group's strategy to grow its Global Engine Support business and enabling the company to further strengthen its quality services to customers worldwide. JES, founded in 2009, operates 14 engine bays from its 12,000 m² premises located in Carrollton, Texas, and is capable of storing up to 120 engines. The facilities are supported by employees with deep industry experience in providing maintenance services to a wide range of blue chip customers on most in-demand engines, such as the CFM-56 and LEAP Families.

Boeing turns back on US\$4.2 billion Embraer deal

Boeing let the midnight deadline on April 24 pass before announcing that it was pulling out of the deal to acquire the commercial aircraft arm of Brazil's Embraer first agreed in 2018. Boeing has cited that Embraer failed to meet a number of conditions required for the transaction to be closed. Embraer has retaliated by making it clear it feels Boeing has done everything it can to sabotage the deal in light of the financial crisis

being faced through the continued grounding of the MAX 737 jet and current COVID-19 crisis. According to Reuters news agency, the deal included a US\$100 million breakup fee, but Embraer will likely seek Boeing for appreciably more, alleging that the long period of uncertainty has hindered sales of its E2 jets. It confirmed it would pursue "all remedies" against Boeing, though without expanding on the statement.

Lockheed Martin posts US\$1.7 billion net earnings in first-quarter 2020

Lockheed Martin Corporation has reported first quarter 2020 net sales of US\$15.7 billion, compared to US\$14.3 billion in the first quarter of 2019. Net earnings in the first quarter of 2020 were US\$1.7 billion, compared to US\$1.7 billion in the first quarter of 2019. Cash from operations in the first quarter of 2020 was US\$2.3 billion, compared to cash from operations of US\$1.7 billion in the first quarter of 2019.

Spirit AeroSystems warns of dire quarterly results amid COVID-19 pandemic

Spirit AeroSystems (Spirit) the American airframe maker has announced that for the first quarter of 2020, it is likely to post a loss of US\$160 million as opposed to a profit of US\$163 million for the same period last year, generating approximately US\$1.1 billion in first quarter revenue, down about 46% from US\$2.0 billion for the same period in 2019. Having relied on Boeing for roughly 50 percent of its revenue in 2019, Spirit was heavily affected by the ongoing problems of the still-grounded 737 MAX and laid off 2,800 workers in January when the planemaker halted production of the jet and Spirit had to suspend its 737 MAX fuselage work. However, that was pre-COVID-19, the outbreak of which has seen Spirit forced to furlough staff and implement layoffs. Though the company has not issued final first-quarter results, the preliminary announcement of the poor quarter came with confirmation of a US\$1.2 billion debt offering which is due to close on April 17 and which the company has indicated it will use for general corporate purposes and to repay other debt. On April 8 Spirit confirmed it will furlough staff at both Wichita and Oklahoma premises for a period of three weeks. 2020 first-quarter results will include a US\$42 million one-off expense relating to cost- and workforce-trimming measures, US\$25 million related to COVID-19 production suspension, US\$73 million from the 737 Max fuselage production suspension, and US\$65 million in retirement plan expenses. As at the end of March, Spirit held US\$1.8 billion in cash and plans for the acquisition of both Asco and Bombardier aerostructures for a combined US\$920 million should still close in 2020.

Other News

Spirit AeroSystems will reduce employment at sites supporting commercial programs a result of lower demand for commercial airplanes. Spirit is a supplier to **Airbus** and **Boeing**, both of which announced lower production rates for commercial aircraft due to the impact of COVID-19 on the aviation industry. As part of the overall employment reductions, Spirit offered a voluntary layoff to union represented employees in Wichita, Kan. earlier this week. Spirit has issued a notice to the State of Kansas under the Worker Adjustment and Retraining Notification (WARN) Act of layoffs affecting approximately 1,450 hourly and salaried employees at its site in Wichita. Spirit's Wichita employees af-

ected by these layoffs are expected to begin exiting the company May 15. Smaller reductions will occur at Spirit's remaining U.S. sites that perform commercial work. Spirit's global sites are reviewing workforce requirements and will announce their plans in the coming weeks.

Orders for the ground-use air and surface purification system developed by **Aviation Clean Air** (ACA) and **International Aero Engineering** (IAE) continue to accelerate, as the companies have ramped up to effectively meet customer demand. Since production of the Ion

Distribution Unit for Ground Use Only began in March, a large number of units are being shipped daily to customers around the world. The system, which uses the same proven technology as ACA's patented airborne system, was adapted to proactively sanitize aircraft interiors while on the ground. "We've delivered units to all the major OEMs, a wide range of aircraft owners and operators, FBOs and maintenance organizations, domestically and around the globe," said Howard Hackney, ACA Managing Member. "The effectiveness of the system, along with the ease of use and the lessened impact on personnel and aircraft downtime has helped these organizations continue their operations safely and efficiently." The companies have increased daily production rates to keep pace with the continued demand.

ILS and **CCI** will launch the ILS Bridge for **Quantum**. This new solution will allow automated listing of Quantum Inventory on ILS and provide real-time connectivity between Quantum Control and ILS, a digital aerospace marketplace. The ILS Bridge for Quantum is a fully integrated, real-time connectivity solution that simplifies inventory and RFQ management for buyers, provides robust out-of-the-box functionality, and enables intelligent supply chain management with improved data integrity.

Thomas Global Systems has received **European Aviation Safety Agency (EASA)** Supplemental Type Certificate (STC) approval for its TFD7000 Series plug-and-play LCD flight displays for **Boeing 757** and **767** cathode ray tube (CRT) equipped aircraft. It is the first EASA-approved retrofit of its kind for Boeing 757-200/300 and 767-200/300 aircraft. The TFD-7000 Series delivers 757/767 flight decks with all the benefits of LCD technology and added functionality and capacity for current and emerging airspace requirements. Its inventive plug-and-play design enables cost-effective installation on overnights or even at the gate, without flight or maintenance crew retraining and with no changes to flight deck wiring, panels or simulators. The TFD-7076/7066 plug-and-play LCD solutions replace legacy **Rockwell Collins** EDU-776/766 CRT displays currently installed on 757, 767 and Boeing 737 Classic flight decks. The TFD7076/7066 LCDs are both interchangeable and intermixable with the existing legacy EDU-776/766 CRT displays and are fully compatible with the EFIP-701D/E Boeing symbol generators.

Safran, the world's third-largest aerospace supplier has announced it is to cut its workforce in Mexico by 3,000 as the French company tries to deal with the fallout of the COVID-19 pandemic and its effect on the aerospace industry as a whole. Safran has two plants at Queretaro, Mexico, an industrial city which has become a hub for global manufacturing supply chains with a proliferation of export-focused factories. Safran has over 13,000 employees working in Mexico and confirmed that the paring back of numbers was a necessity in order to protect approximately 10,000 other jobs in the country. In emailed comments sent to Reuters news agency, a Safran spokesperson stated that: "We face a sharp drop in customer orders. Unfortunately, this situation is affecting our business and we must take steps to adapt to clients' requests. One of these steps is a reduction of the workload," the spokesperson added. Safran began notifying employees of its intentions as of the third week of April. "This tough step is proposed in order to preserve the longer-term existence of Safran in Mexico and to protect more than 10,000 jobs still active in the country," the spokeswoman said.



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A balancing act

AFI KLM E&M has a vast network of repair workshops.
Patrick Delapierre

Keith Mwanalushi examines the aircraft component repair and supply sectors, the opportunities, and challenges amidst Covid-19 and navigating through irregular demand cycles.

Prior to the Covid-19 outbreak industry figures suggested that by 2030, the global component MRO market would be sized at approximately \$23.1 billion with additive manufacturing, 3D printing and the use of PMAs and DER repairs all playing significant roles in the market.

Managing supply and demand in times of crisis

The current downturn related to Covid-19 has seen a business shift towards air cargo and niche operations and seemingly parts supplies have shifted during this period but the fundamentals remain the same, observes Martin Ward, Director of Material Management and Supply Chain at Vallair. He anticipates this will change the more hours and cycles the freighters put in. "As tough as these freighters are, they will need parts soon. They have been used non-stop for the past few months, so it is inevitable that parts supplied-on-demand will start-up again soon and Vallair is ready for that."

Ward says Vallair has been able to take stock of parts inventories and streamline its services in readiness to react comprehensively, when operators' demands come flooding in.

Benjamin Moreau, SVP at Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) Components Product also sees that customer needs have shifted during this period but the fundamentals remain the same, and the company has maintained a large inventory to support any request, multiple logistic solutions and a reliable repair supply-chain. In times of irregular demand cycles Moreau feels that forecasting parts supply demand is well and good but also requires complementary work to

adapt to last minute changes, unpredictable needs, or new expectations. "Despite the considerable constraints that the whole industry faces in this time, our teams remain fully mobilised during this period." He states.

Bii.aero which provides aerospace parts and services for commercial aircraft has been rather fortunate because they have supporting such operations [cargo] historically. "We are seeing demand increasing in some of these areas though this is only slightly in terms of the macro demand," notes Justin Blockley, Commercial Director – Bii.aero. "The downturn has put added stresses on areas which are not obvious initially. For example, with many component MROs closed or implementing very tight payment terms, we are reliant on our serviceable inventories to fulfil the need of our customers."

In terms of managing the forecasting of parts, Blockley argues that it is a case of how wrong their predictions can be. "We are processing some very comprehensive reports from large reputable companies, however we feel no one is able to accurately predict the recovery phase till such time as the full pandemic global recovery is better understood. We are relying upon historic demand trends and failure modes at component level, overlaid with



Justin Blockley, Commercial Director – Bii.aero



Karolis Jurkevicius, VP Landing Gear Trading and Leasing at APOC Aviation

feedback Bii.aero is receiving from our customer base."

Blockley reminds that each country and region is noticeably different in this regard, but however, since many of Bii's customers are long-term partners, the company is in a privileged position of having accurate data first hand. "We do feel that new gen aircraft which have yet to be delivered will not be required as early as first thought, especially with the current oil price keeping fuel prices suppressed," he says.

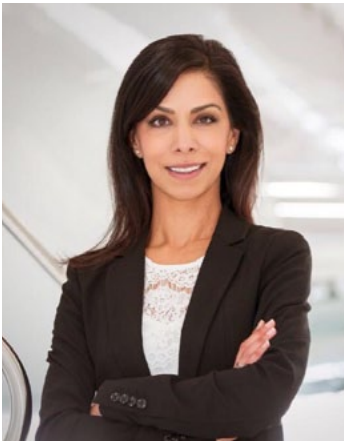
At APOC Aviation Karolis Jurkevicius, VP Landing Gear Trading and Leasing feels it is a "mission impossible" to forecast demand currently as it all depends on current needs (AOGs basically).

"However, we expect some increase on parts supply as there are likely to be unscheduled maintenance programmes from airlines and lessors who want to be ready for the day Covid-19 lockdown is lifted," states Jurkevicius.

At AJW Technique in Canada, Sajedah Rustom, CEO says some customers have changed the nature of their services to support cargo also in light of Covid-19 industry impacts – "We have offered discounts and promos to such operators to help manage their needs and financials. One such example is our quote and hold programme which allows operators to send repairs into AJW Technique for quote assessment, but then hold the repair until they have a demand, after which we can push the component through the repair cycle and bill the customer accordingly."

Rustom says AJW has made adjustments for their power-by-the hour customers, offering them flexibility on minimum hour payments, whilst accessing preferential terms on parts and repairs in a pay-as-you-go style arrangement. "Flexible programmes such as these allow AJW Technique to support operators with changing missions and flight patterns, especially when cargo operations are so critical to the worldwide supply chain and sustainability."

AJW Technique has invested expertise in streamlining shop floor processes ready to further digitalise operations, including a focus on predictive parts planning and fulfilment. "We use Kanban to manage material flows and these models automatically adjust to account for sales volume variances."



Sajedah Rustom, CEO, AJW Technique

Rustom adds that AJW has adjusted algorithms to reduce auto-provisioning in line with their daily, weekly, and monthly sales outlook and budgeting tools. "Presently, we are closely watching the changes in customer behaviours around scheduled and unscheduled repairs, watching for any emerging trends and pivoting accordingly. We work closely with our vendor base which includes the major OEMs to proactively monitor parts requirements daily and have shift-

ed to a more just-in-time focused methodology and mechanism of cooperation together."

At Aircrafters Inc, in Delaware they have tried to get ahead of the daily demand changes that the customer base is going through. As a Collins Master Distributor for wheels and brakes the company frequently reviews its available inventory to support MRO customers who are servicing cargo operators. "In turn we adjust our order book to ensure a constant supply is available. We also support operators directly that move freight and have increased our assembly exchange pools accordingly to make sure they have a readily available units to draw from," states Greg Coffield, VP and General Manager.

During irregular demand cycles Coffield says at Aircrafters this has turned out to be in line with how they increase exchange volume's based on which season they are heading into and then adjust min/max levels accordingly – "For the unfortunate dip in passenger flights we have gone to a 20% of minimum for stock and for our cargo operators its roughly a 20% on top of maximum for winter surge."

Aircrafters had over 250,000 parts and assemblies flow through their New Castle, Delaware facility ultimately shipped to over 60 countries. "We take pride in shipping same or next day for 95% plus of the orders we receive and that the CoC's, 8130's and strip reports are all correct. We also like to think of our quality inspection checklist as a living document that we will routinely improve upon for different customers as their requirements may change," Coffield continues.

François de Larambergue, Head of Engineering, AOG Desk and Procurement at Spairliners GmbH reckons a major challenge currently is getting slots on cargo flight to send parts where they are needed considering the restrictions with regular commercial flights. "Thankfully, we do have pool hubs in strategic locations around the globe that are very well stocked with parts. This proximity to our customers helps a lot to overcome some of the greater logistical challenges that we are currently facing and allows us to serve them as quickly as possible."

Mr de Larambergue says the Corona crisis has completely changed airline operations to the point where there is no regular usage of components. "Many parameters of our supply chain have drastically changed over the past few weeks.

"We observe that hard time items are still requested, but flight hours and flight cycles related items are postponed, and storage related components need to be actively managed. Our engineering department, in cooperation with the airline's engineering teams, have adjusted the parameters of our customers' asset forecasting systems to better



Greg Coffield, VP and General Manager at Aircrafters Inc



François de Larambergue, Head of Engineering, AOG Desk and Procurement at Spairliners



Aiste Maciulyte Kavaliauskiene from Magnetic MRO

match the current requirements, but we need to continuously and closely monitor the development in order to ensure optimal and investment-efficient results," he explains.

At Magnetic MRO, Aiste Maciulyte-Kavaliauskiene tells this publication that the current downturn decreased the demand for parts in general but as cargo airlines move in Magnetic are focused on helping them. She observes however that this 'new demand' does not guarantee the type of turnover that would be expected

by the passenger aircraft market. She says many of suppliers moved their attention to other parts suppliers, who are trying to get the best from the current situation and purchase parts with a lower price for their stock for resale to airlines when the market recovers.

Mike Cazaz, President and CEO at Werner Aero Services highlights the importance of being dynamic and ready to make changes as needed, sometimes daily, in times such as these. "We watch the market, movement of aircraft, airlines' operations and make decisions and adjustments based on forecasted aircraft utilisation. That is a key element that we use, in addition to communicating with our customers daily and learning about their short-term plans. This knowledge helps us predict demand and potentially future supply of parts in the market," he says.

Ensuring consistency in repair strategies



Mike Cazaz, President and CEO at Werner Aero Services

MRO's, repair shops and OEM specialists are rigorously benchmarked to ensure absolute consistency in terms of repair quality. "It is of course, up to the customer to measure the MRO's reliability to reduce long term costs and potential breakdowns," says Cazaz adding that relationships and loyalty between customer and supplier are just as important, especially during these times of Covid-19. "Loyalty does breathe consistency, dependability and experience," he comments.

At AFI KLM E&M the quality of repair of aircraft components is integrated into the processes but also into the culture of teams and management. "It is always associated with the fundamental of flight safety," says Olivier Boina, AFI KLM E&M Head of Industrial Projects for Components.

AFI KLM E&M has a network of repair workshops located in Europe (Amsterdam and Paris), Asia (Shanghai, Singapore and Mumbai) and America (Miami, Atlanta, Phoenix...). Boina: "Firstly, this positioning helps us to serve our customers as closely as possible and to understand the needs of each of them by adapting to them. Then, we have a technical coordination between our workshops which helps us to offer all our customers the same repair standard of quality."



Component repair by Barfield.
Photo: Patrick Delapierre

All repairs performed by AJW Technique fully meet all regulatory requirements and follow a strict quality assurance programme, assures Rustom. "We deploy a rigorous methodisation process where all core capabilities are 'methodised' to ensure bill of material for parts, task-listing and standard work are fully documented and implemented. This enables consistent, high quality delivery that is tracked for efficiency, reliability and cost control."

Rustom says detailed, measured work-scopes have been developed by an experienced technical team in collaboration with shop-floor engineering and procurement teams. "Each repair is assessed in the context of the customer's operating environment, history, along with our own fleet history and market data to ensure the most optimised solution in line with cost and reliability protocols. We work in concert with our customers to develop optimal solutions based on our extensive repair and overhaul knowledge, coupled with their in-service experience."

Mr Ward from Vallair stresses that quality needs to be the mission statement of any repair shop – "consistent quality each time every time, should be fundamental."

Regarding Vallair's approved aerostructures repair facility in Chateauroux (France), consistency is one of many ideologies ingrained into the team. Ward says for a finished released component: detail, accuracy, care, quality, focus, job satisfaction and the mantra that perfection is not the target, perfection is the standard, marks out Vallair as the 'go-to' repair shop.

APOC Aviation say they make use of the best MROs in the world, according to Robert Ymker, Repair Manager – "Sometimes, there is a higher price involved. But the quality of the repairs are high and the warranty claims on units are almost zero."

Mr Ymker explains that when APOC Aviation receives multiple units of the same part number from a teardown project they limit the repairs to 1-2 units at a time. "When the first SV unit is sold, we send out the next unit to the shop. This way we have a shorter shelf life for units and the tag (warranty) does not expire unnecessarily."

Bii aero are also keen on working with reputable MROs who obviously have the required regulatory requirements but also take issues seriously when they occur, e.g. fail on fit or premature failures. Repeat quality is the key. Blockley says organisations operating 5S, or other lean initiatives, are built around such principles so have a natural advantage.



There is increased demand to support cargo operators.
Photo: Messe München

At Spairliners, they bring together repair services, supply chain management and smart inventory management to ensure that everything is provided by a single source that can control and steer all processes.

"During such a crisis, we focus on our fundamental values even more," de Larambergue comments. He says since Spairliners was founded by two airline MROs, the fundamental values of any airline - safety and quality - are part of the company's DNA. "Our shareholders, Air France KLM Engineering & Maintenance and Lufthansa Technik, are especially renowned for their high quality and safety standards. Therefore, having access to their state-of-the-art facilities that offer a wide range of in-house repair capabilities and employ highly experienced mechanics and engineering experts, automatically ensures consistency in terms of quality. Further, we are taking the current opportunity of reduced customer requests to train our staff to ensure that our operational teams are equipped to provide the highest level of support and care for our customers at all times, irrespective whether fleets are grounded or not."

Clearly, the current Corona crisis is having a tremendous impact on the entire aviation industry and will influence all activities within the sector. Aircraft operators, MROs, parts supplier, and repair facilities are having to rethink strategies to ensure parts are where they should be when needed.

Talking Point: Components

President and Co-Founder at Setna iO, **David Chaimovitz** talks about components and the key issues facing the current market.

The Covid-19 crisis has hit all of us incredibly hard. Fortunately, we have always maintained diversity in both the components we stock, as well as in the customers we support. We have over 4,000 different airworthy line items that are ready for immediate AOG shipments. Aside from galley equipment, most items are applicable to both freighter and passenger airframes. Although we have seen a huge downturn in demand, we are still seeing dozens of orders a week. Over the past 45 days, we have seen revenues triple on a per capita basis to cargo operators. This is due to a slight increase in orders from cargo operators, combined with much lower sales overall.

Forecasting future demand is quite the interesting mental puzzle for all business decision makers. We can assume global maintenance requirements due to component failures and life limits will remain consistent to pre-Covid-19 demand once aircraft inevitably return to the skies. The two real questions here are which fleets are airlines going to prefer forward, and what will market pricing look like with regards to parts?

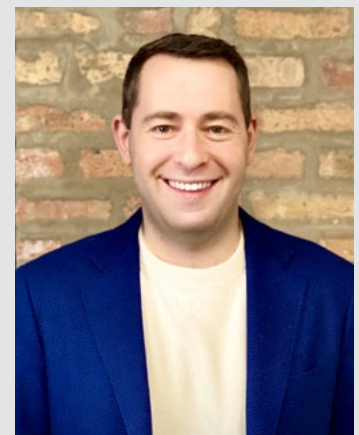
On one hand, operators like American Airlines are scheduling early retirements for over 100 airframes including 34x B767/757, 76x older 737NG manufactured between 1999-2001, 9x A330-300, and 20x E190. However, the extremely low prices of oil could potentially make purchasing or leasing a new airframe much less attractive. How will airlines react? Will they utilise older aircraft for longer? Or will they invest in the much more expensive new technology?

In terms of component prices, we know there will be additional supply of material hitting the market. The question is how much,

and what does that do to market pricing? Our best guess is that the most at-risk components are those where supply scarcity (and not repair cost) keeps the market inflated. A 737-800 IDG worth \$220,000 as of January 2020 that only costs \$50,000 to overhaul will likely collapse in price. However, a 737-300 valve that had a January 2020 market value of \$5,000 that costs \$3,500 to overhaul will likely lose much less value as a percentage of its total price. Given the huge degree of uncertainty in the market, there are potential supply chain disruptions once demand rebounds. No one really knows what to pay for a part out candidate right now. Companies are also going to be very hesitant to invest in repairs. Although this is a contrarian position, there could be some potential for supply chain shortages of in stock, ready to go components.

Right now, no one has any real answers. We all just have questions, and the number of variables seems to increase by the day.

Setna iO is a global component stockist based in Chicago and London.



David Chaimovitz, President, Setna iO



Magnetic MRO has a wide portfolio of services.
All photos: Magnetic MRO

In the hot seat.....

Inga Douglas, Commercial Director, Magnetic MRO

AviTrader MRO: What attracted you to this business?

Douglas: I have worked in sales my whole life. I entered the aviation industry eight years ago and it has met all my expectations since then. I'm learning every single day and enjoying my work. The aviation industry has a special community of professionals, the environment is constantly changing and there are unlimited opportunities to do business and develop – that is what is still attracting me in this business to this day.

AviTrader MRO: What does a typical day's work entail in your job?

Douglas: I manage long-term partnership contracts that contribute to the company or group level. Also, I work on a daily basis with our sales people across the world and make sure we are all aligned and don't miss any cross-selling opportunity within the Magnetic MRO group. At the same time, I look after our financial results and work with department managers towards achieving improvements where needed. It is very satisfying to see complex projects executed by teamwork. My work involves lots of travelling, communication, and a variety of specifics – this is exactly what I admire.

AviTrader MRO: What is the most challenging part of your job?

Douglas: There are always challenges. Nevertheless, this is part of the job. Extensive and complex projects might be more of a challenge but they are also the most rewarding too. In the current environment, Covid-19 related issues are testing all of us and I am delighted to see the strong teamwork behind the scenes – it gives confidence for the future, as well as supporting our goal to always find a solution for our customers.

AviTrader MRO: What are the key capabilities in terms of MRO at Magnetic?

Douglas: Magnetic MRO has very wide portfolio of services and products that allows us to operate in different markets globally and reflect demands of our various customers. We run tailored heavy maintenance facilities together with the paint hangar for narrowbodies, we also have an extensive network of line maintenance stations across Europe and Africa (managed by our group company Direct Maintenance) for both widebody and narrowbody aircraft. In addition, we provide CAMO support (Part M), design

and production services (Part 21 J&G), assist customers with their needs for engine stands (enginestands24.com), components and spare parts in line with comprehensive PBH (for rotables) and PBC (for wheels and brakes) programmes. Also, we keep developing our engine management capabilities. Just recently, Magnetic MRO's engine maintenance department expanded its capability by the purchase of new tooling which added over 40 new capabilities to their service list, thereby making our MRO engine workshop unique within the region.



Inga Douglas, Commercial Director, Magnetic MRO

AviTrader MRO: Clearly, the aviation sector has been badly affected by the Covid-19 outbreak. What is your outlook on the MRO sector?

Douglas: I agree that everyone is affected, including the MRO industry. It will reflect negatively on annual results and will probably require us to re-evaluate initial growth plans. In time, the MRO business will retain a strong position in the aviation industry, but in the near term it will shrink to reflect demand. Magnetic MRO has taken actions to support operators and aircraft owners by adjusting our services towards current needs. We have implemented extensive storage maintenance programmes (including CAMO services) across the airports Magnetic MRO Group operates, at the same time we can combine needs for heavy maintenance and painting – as a one stop shop.

AviTrader MRO: Magnetic MRO recently signed an airframe maintenance agreement with Airbus. What new opportunities will this present?

Douglas: We are happy about the course of development with our partnership with Airbus. It started from cooperation in relation to heavy maintenance that we do in our facilities and we have signed an aircraft maintenance agreement that will allow us to support Airbus base and line maintenance needs across the world.

AviTrader MRO: In September last year Magnetic opened an expanded training facility. Will you still be adding an additional four aircraft for type training in 2020?

Douglas: The world will keep developing even after Covid-19 and aircraft operators will still require training solutions. We will keep monitoring the situation in the market while working to



Magnetic MRO Paint Hangar.

execute our plans in line with adjusted demand.

AviTrader MRO: What is the current update with plans for MAC Aero Interiors?

Douglas: This year, MAC Aero Interiors production facility was moved to Tallinn in Estonia. This was a hard but necessary decision due to Brexit uncertainties and all the additional negative impacts we have been observing.

Nevertheless, all certificates, quality standards and historical data has been retained to continue to execute ongoing and new projects. The team in the new facility has already set their ambitious plans to grow and develop products that reflects demands of our customers. In addition, we are offering new solutions and products to reflect the existing situation in the market, like design organization services for conversions to transport medical cargo in passenger aircraft.

Also, we have introduced PPE (Personal Protection Equipment) – it is a special personal

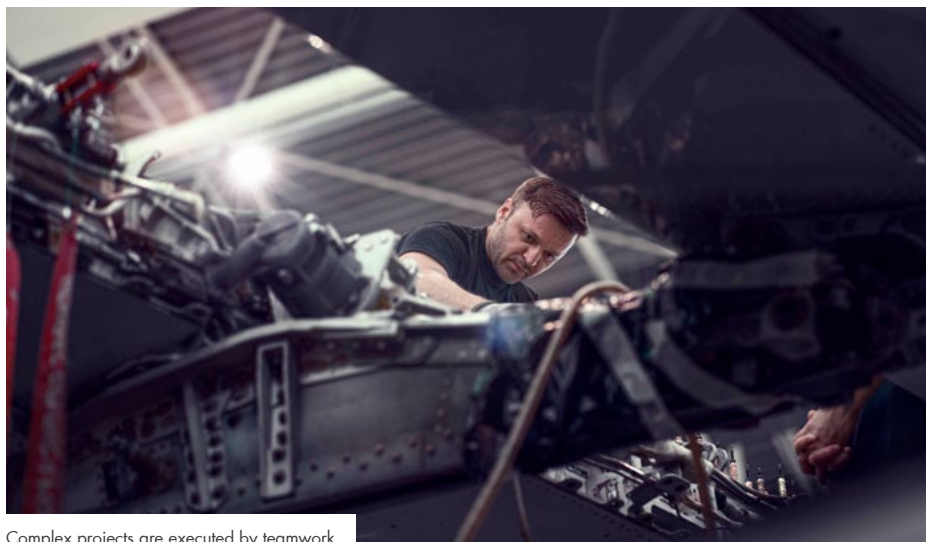
sanitising kit for passengers and crew and we provide for airlines as well as the airports to distribute before boarding to assure safe flight. I would mention that we customise kits for different airlines and airports that reflects their needs and internal procedures.

AviTrader MRO: Innovation will be key to lift the MRO sector from current global challenges. How are you pushing technological boundaries at Magnetic?

Douglas: Indeed, innovative solutions and new technologies are the key objectives for further development. Regardless of the Covid-19 situation, the aviation industry is always following innovation trends and implementing them in internal daily activities, as well as across the solutions to customers. However, current global challenges will have an impact, both positive and negative. Certainly, innovative solutions inside organisations will help to reduce costs, especially administrative expenses. Unfortunately, we also need to admit, that some developments will be parked for some time until the market will be ready for further investments. During this hectic time, we all will need to adjust.

Due to the nature of Magnetic MRO's business that covers wide variety of services, we always look for solutions that expand our capabilities and bring our cooperation with customers further. We are lucky to have a team of strong professionals passionate about aviation and its development.

Some of the technologies we deploy include Virtual Reality (VR) equipment for aircraft exterior painting (allowing to choose the livery), as well as for decisions on interior refurbishment. In addition, we have software that allows cabin crew to record cabin defects before maintenance teams step in: this software saves troubleshooting time and applies all applicable technologies.



Complex projects are executed by teamwork.



Covid-19: The final approach

Covid-19 is having a fundamental impact on aviation.
Photo: Chapman Freeborn

Jeff Lund, President and CEO at Kellstrom Aerospace talks about navigating through the turbulence and the market outlook post Covid-19.

Covid-19 is having a fundamental impact on the aviation industry that will be felt for an extended period. The aviation industry has shown in past crises that it will respond to international market forces and rebound. I look back to previous “shock” events like 9/11, SARS and the 2008 global financial credit crunch as reference points to see how businesses adapted. However, Covid-19 is unique in that it has led to an unprecedented grounding of commercial aircraft concurrently around the globe resulting in a market contraction never seen before. The question before us now is how long the impact will last and when will the industry recover?

I expect the second quarter of 2020 will be the worst quarter in aviation history across all commercial aftermarket business segments. The global airline industry has reduced passenger capacity by 75-90%. It is uncertain how long this will last or can be sustained. The overall impact of this crisis is yet to be fully understood, and with no historical events of this magnitude to compare, we must make our own assessment of the changing dynamics in the commercial aviation aftermarket.

The next few months and quarters will be critical, and we have a significant amount of heavy lifting to do as an industry. Prior to the crisis, the aviation industry had experienced a period of record growth with significant speculation that we were nearing the top of the market. As a result, many businesses were in good financial standing and capitalised to deal with a potential recession. Previous forecasts are no longer relevant and companies now need to focus on managing their balance sheets and liquidity to survive this downturn. Not all airlines and aviation industry companies will survive this crisis. As a result, the industry landscape will change forever, and we must plan for the new normal as we have done with each previous downturn.

Planning and getting through the next quarters

Effective inventory forecasting, planning and fiscal control are key to survival during the next few quarters, and to facilitate an effective forecasting strategy, detailed market intelligence data is required. At Kellstrom Aerospace we maintain constant communication with our customers to determine how our inventories and services match their needs. As we identify emerging needs and changes in market dynamics, we adapt our strategies accordingly always with a focus on being quickest to market with our value-added solutions.

Kellstrom's OEM Distribution business delivers Just-In-Time (JIT) cost-cutting logistical solutions to over 2,000 airline and MRO customers in 90 countries. Kellstrom is the formal aftermarket distribution channel partner for over 35 OEM's with equipment in essentially every ATA chapter. Kellstrom's data-driven forecasting, provisioning approach, proprietary information technology and global stocking stations takes the guesswork out of material provisioning, providing overall inventory cost savings to meet the needs of operators knowing Kellstrom has what they need on the shelf when they need it.



Maintain discipline with a focus on cost saving platforms says Lund.
Photo: Kellstrom Aerospace



Cargo continues to perform strongly.
Photo: Keith Mwanalushi

Kellstrom Technical Services (KATS) works with operators to optimize their fleet management solutions including maintenance, remarketing and consignments. The KATS objective is to continually provide value to our customers through our cost saving platforms. Prior to Covid-19, the industry was already demanding solutions to protect owners and operators in the event of a market decline, so I implemented a strategy of creating a range of services throughout the group that could bring value to our customers from a technical, commercial and material perspective:

- A core function was the ability to provide technical services consultants like The Aircraft Group that help the market with aircraft lease returns and all technical services related to the management of aircraft transitions. This will also be true with parked aircraft needing technical services to return to service.
- Our company Vortex Aviation conveniently has four global facilities currently helping operators and lessors with hospital shop style engine repairs avoiding heavy shop visits and millions in costs. This also includes on wing support to get parked aircraft back into service.
- The Kellstrom Aerospace leasing and trading team is assisting operators with green time leasing and engine exchanges to further avoid heavy shop visits. In cases where the only option is a heavy shop visit, the KATS team can then manage those visits with technical expertise, USM provisioning, repair management and invoice review to reduce the total cost of overhaul.

I see the cargo business continuing to be very strong. Our distribution team is working closely with the cargo industry to provide essential parts and spares required by cargo and passenger carriers as they pivot toward expanded cargo operations to transport medical supplies and address the current lack of cargo capacity in the market. Kellstrom also distributes other materials that address key needs during the present crisis including anti-microbial cleaner used to sanitize cabin interior surfaces. Additionally, Kellstrom is planning-ahead for airlines during the market recovery when the need for materials will ramp. As operators and MROs cut cost and freeze purchasing activity to manage their inventory

costs, airlines and MROs are stocking out of parts including safety stock leading to a higher incidence of critical and AOG requirements. Rest assured that Kellstrom Aerospace has heavily provisioned the inventory that operators need and is still delivering around the clock AOG service supported by direct Kellstrom employees.

Our overall goal as a company, is not only to focus on the distribution and technical services business but also on used serviceable material (USM), green time leasing and engine exchanges. After previous crisis, we saw airlines look to USM strategies to limit the cost of maintenance and we are in an excellent inventory position focused on the narrow-body aircraft which includes CFM56-5B, 7B, 5A, and V2500-A5. On the widebody, our focus is on the CF6-80C2 and PW4000.

Surviving in a new aviation cycle and environment

I expect consolidations within the airlines and lessors in addition to more start-up operators that will have access to lower cost aircraft.

Industry bailouts, low interest rates and historically low gas prices will help the overall economy bounce back stronger than before. We need to remember this was not a financial crisis and the nature of this event is fundamentally different. No one could have anticipated this and say they were prepared for it. How we respond will be the key.

We are seeing more operators and lessors cancelling new aircraft and pushing out orders for years. I am convinced the bubble is at the top of the chain. Both Boeing and Airbus are struggling with how to proceed and keeping the supply chain intact. Oil prices are at record lows and will stay there for a long time. Operators will see a financial benefit in flying midlife aircraft longer. Some airlines are already selling these aircraft to lessors and leasing back at attractive rates.

My recommendation on surviving this crisis is to maintain discipline in your business with a focus on cost saving platforms. Competitors have changed their business models into heavy components and airframe MRO's but not focused on synergies and cost savings



Kellstrom continues to offer integrated aftermarket solutions.
Photo: Kellstrom Aerospace

platforms. Companies that are capitalized correctly, practice fiscal discipline, and offer cost savings and best value innovative solutions will do well during this downturn.

Returning aircraft to service and inventory

Airlines will eventually return aircraft to service, and the question will be how to do so in the most efficient and cost-effective manner. How will they manage parked aircraft, and how will they make use of excess inventory? I expect this will in part depend on the price of oil and capital availability. Airlines will likely consume parts they have in stock short term, and others will disassemble their grounded aircraft to cannibalize aircraft and engines for parts before acquiring new parts. Airlines will continue to burn green time off engines to avoid heavy maintenance costs. In the past, the challenge has been obtaining access to good used surplus material (USM), and now I see the level of

supply of USM will exceed demand for some time. Initially the largest USM surplus will be from widebody aircraft.

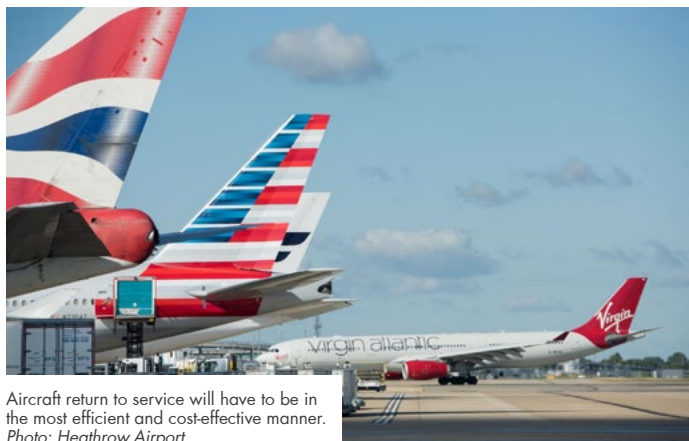
If there is a silver lining to this crisis for operators, airframe material costs will decrease. However, I do not anticipate this happening with key USM for many engines. Aftermarket USM parts are a lower cost alternative for airlines and airlines will demand all cost savings options. Many operators will monetize their own USM as they downsize their fleet to coincide with current market demand and to optimize their load factors.

In the rush to right-size their fleets, many airlines with leased aircraft and engines are trying to work with their lessors on lease cancellations and early returns. Most leasing contracts regarding lease returns may require shop visits prior to lease return, and some lessors have strict requirements for material including the use of genuine OEM parts to protect aircraft and engine asset values. Because Kellstrom Aerospace is the OEM aftermarket distributor to 35 OEMs with equipment in mostly every ATA chapter, Kellstrom offers a comprehensive mix of factory new inventory and USM to meet customer demands.

Outlook and customer feedback

Although I expect to see signs of improvement in the third quarter. I think the recovery timeline will be slow through mid-next year. Feedback from our customers reveals interesting insights. Depending on which customers you talk to there are many opinions on the timeline to recovery however, they all agree it will take time to right size their operations to address the reality of reduced market demand.

As we navigate the recovery process, we will continue to work with our customers to ensure we meet their requirements and continue to offer the best value integrated aftermarket solutions. In the end, we are all in this together.



Aircraft return to service will have to be in the most efficient and cost-effective manner.
Photo: Heathrow Airport



Photo: LHT

Within the first half of 2020, the management of seven departments of Lufthansa Technik were newly appointed within the course of internal rotation. On February 1, **Dr. Alexander Feuersaenger** took over the management of the Fleet Services product division in Frankfurt. Since March 1, **Stephan Drewes** has been performing the dual functions of heading the IT Domain MRO department together with the Information Management Lufthansa Technik Group. On April 1, **Philip Mende** took over the position as head of the Digital Fleet Solutions product division. His successor as head of Engines Parts Repair and Mobile Engine Service" is **Michael Kirstein**. Also, on April 1, **Tim Butzmann** was appointed head of Corporate Sales Africa & Middle East. **Andreas Drosdowski** has been heading Maintenance Europ" since April 1 and has also been appointed as new CEO of Lufthansa Technik Maintenance International. **Michael von Puttkamer** will become Head of Operations of the VIP & Special Mission Aircraft Services division on June 1.



Gary Dunn

Aviation Partners has appointed **Gary Dunn** to the position of president, effective immediately. Dunn has served the company for more than two decades. He has been interim president since the unexpected passing on March 30, of company founder and aviation legend Joe Clark. Dunn has close to 30 years' experience in aviation maintenance, engineering, product support, sales and marketing. A childhood fascination with all things flight related led Dunn to study aeronautical engineering. During an apprenticeship at London Luton Airport-based Monarch Aircraft Engineering, he provided MRO support to a mixed fleet of Boeing and Airbus aircraft. A move to Seattle in his early 20s led to being hired in 1996 by Aviation Partners' director of engineering. He joined Joe Clark's dream team of mostly former, senior Boeing engineers.



Dainius Stanulis

Avion Express has named **Dainius Stanulis** as the new Vice President Commercial as of May 1, having previously served the company as a Commercial Manager. For the last two years, Stanulis was developing sales function in the company with a strong focus on strengthening clients' portfolio and meeting customer's needs. Having brought his expertise in sales working with multiple international businesses in the B2B sector, he has proved himself to be a valuable addition to the company's management team. His vast experience of over eight years in the international corporate banking sector contributed to the company's success in securing the leading position in the market.



Jim Nypels

APOC Aviation has brought **Jim Nypels** into its new Engine Trading division as the organization prepares for a return to increased leasing and trading activity. Nypels has been with APOC since the start of the business in 2015. After a period as Warehouse & Logistics Manager, he moved to project management focusing on airframe teardowns – a core activity for the innovative leasing, trading, aircraft component and part-out specialist.



Janos Virag

North American Aerospace Industries Corporation (NAAI), a provider of sustainable end-to-end aircraft recycling solutions, has appointed **Janos Virag** as Director of Innovation. In this role, Virag will have a wide range of responsibilities including the development of new recycling processes for advanced materials such as carbon fiber, researching reuse possibilities and recycling rate increases. In addition, he will design technical work processes, determine schedules for various aircraft arrivals, and coordinate training programs through Lenoir Community College and other entities. He brings to his new position extensive experience as a manufacturing training professional across aviation and other transportation modes. Prior to joining NAAI, Virag served in multiple roles as Aviation Manufacturing Instructor and Manager of Fabrication – Airbus 350XWB with Lenoir Community College/Spirit AeroSystems Inc. (Kinston, NC).



Martin Nüsseler

DRA – Deutsche Regional Aircraft GmbH and sister company 328 Support Services GmbH, have appointed **Martin Nüsseler** as their Chief Technology Officer. Leveraging his significant aviation industry experience, Nüsseler is responsible for product strategy, technology road map and oversight of the engineering development team. Nüsseler joins after 17 years with Airbus – the last five of those spent leading the Airbus alternative propulsion systems and technologies unit. Nüsseler worked for Fairchild Dornier in the late 1990's. The engineering development team's primary focus is enhancing the D328® platform and delivering its future technology roadmap. The technical mission for the aircraft is based on a clear commitment for more sustainable aviation with significant positive impacts on short-range regional transportation, versus today's standard technologies.

Communications Software (Airline Systems), Commsoft, has announced a management restructuring programme which will position the company for future international growth. **Patrick Cusk** joins the Commsoft team as President. Cusk is also Vice President of Operations at Valsort Corporation (which acquired Commsoft last year) and has a back-

ground in vertical software applications, structured finance and commercial law. **John Wilson** has been appointed as the new Director of Technology. He was previously COO at Black Ball Solutions and has a deep understanding of the aviation industry and agile methodology. As part of the new management restructure there have been a number of internal promotions. **Pete Lambert** has been promoted to Director of Operations. Lambert was previously Head of Technical Operations and has been at Commsoft for over 21 years. **Julian Beames** has been promoted to Head of Customer Accounts. He was previously Business Development Manager for over nine years. After an exemplary 12 years of leading the business, **Nick Godwin** is moving on from his role as Managing Director and will remain in close partnership with the business moving forward. As a Senior Consultant, Godwin will be assisting the team with sales and global new business opportunities and continuing to provide Commsoft with the benefit of his extensive market knowledge and experience.

BOC Aviation has promoted **David Walton** to Deputy Managing Director, a position he will hold in addition to his current role of Chief Operating Officer. Walton joined BOC Aviation as Chief Operating Officer and a member of the senior management team in November 2014. He has responsibility for legal and transaction management, portfolio management, technical, strategy and market research, compliance and corporate affairs, investor relations and corporate communications and

information technology. Walton has more than 33 years of experience in the aircraft leasing and finance industry. Prior to joining the company, he served as a general counsel and a chief operating officer for both privately held and publicly listed companies.



Brian Sprecher

C&L Aviation Services, a C&L Aviation Group company, announced that **Brian Sprecher** has joined the company in the position of Regional Sales Manager for the Corporate MRO, for the Southeast United States. Sprecher will assist C&L's corporate aviation customers with maintenance packages, including modifications, avionics upgrades, interior and paint services. Sprecher's experience includes two decades in the corporate aviation industry. Prior to C&L, Sprecher served as Regional Sales Manager for the Southeast United States for Constant Aviation. He will be based out of Winston-Salem, NC. C&L has been growing in the corporate aircraft MRO market for several years with a focus on Embraer, Challenger, Hawker, Citation, and Beechjet aircraft.



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