

MRO

September 2020

New Aircraft *New Solutions?*



Airinmar
Support for
Frontier Airlines

Romania
Aerostar builds
up in Iasi



ATR's purpose-built freighter is finally here

The big news coming out of the aviation industry this month aside from the ongoing COVID 19 related pressures is the first flight of the much anticipated ATR-72 600F. It is the first fully purpose-built regional freighter developed by ATR launched in November 2017 with 30 firm orders plus 20 options from launch customer FedEx.

This brings me back to a conversation I had with former CEO of ATR Christian Scherer in 2018 in Toulouse soon after the freighter was launched where he said increases in the productivity of the freighter justified the investment by FedEx in a new aircraft – and therefore the investment by ATR into the development of the new version. He told me the particular decision was quite strategic for FedEx certainly but also for ATR because it opened up a whole new market space and new prospect for new and used aircraft in the future.

Fast forward to September 2020, the new cargo variant has finally taken to the skies and ATR are confident the straight-from-factory cargo aircraft will offer a number of unique advantages to operators and the market looks equally enthusiastic about the aircraft.

And on the topic of new generation aircraft, in this edition we examine integrated MRO solutions and how far the market has come to meet the requirements of next-gen types and how the major MROs are responding and also the effects of COVID issues within that. It's clear that the MRO industry has a little way to go and still, much of the focus is on pushing ahead with digitisation and establishing common systems no matter the age of the aircraft.

Keith Mwanalushi
Editor

The first delivery of the aircraft will be to FedEx Express.
Photo: ATR



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Airbus

Publisher

Peter Jorssen
p.jorssen@avitrader.com

Editor

Keith Mwanalushi
keith@aeropublications.co.uk

VP Sales & Business Development (Advertising)

Tamar Jorssen
tamar.jorssen@avitrader.com
Phone: +1 (778) 213 8543

Graphic Designer

Volker Dannenmann,
volker@dannenmann.com

Sales & Marketing Manager

Malte Tamm
malte.tamm@avitrader.com

Managing Editor

Heike Tamm
heike.tamm@avitrader.com

Published monthly by

AviTrader Publications Corp.
Suite 305, South Tower
5811 Cooney Road
Richmond, British Columbia
V6X 3M1
Canada
Tel: +1 (424) 644-6996
www.avitrader.com



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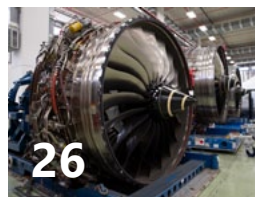


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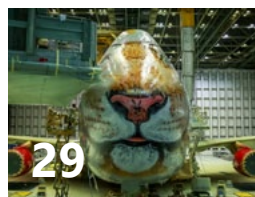


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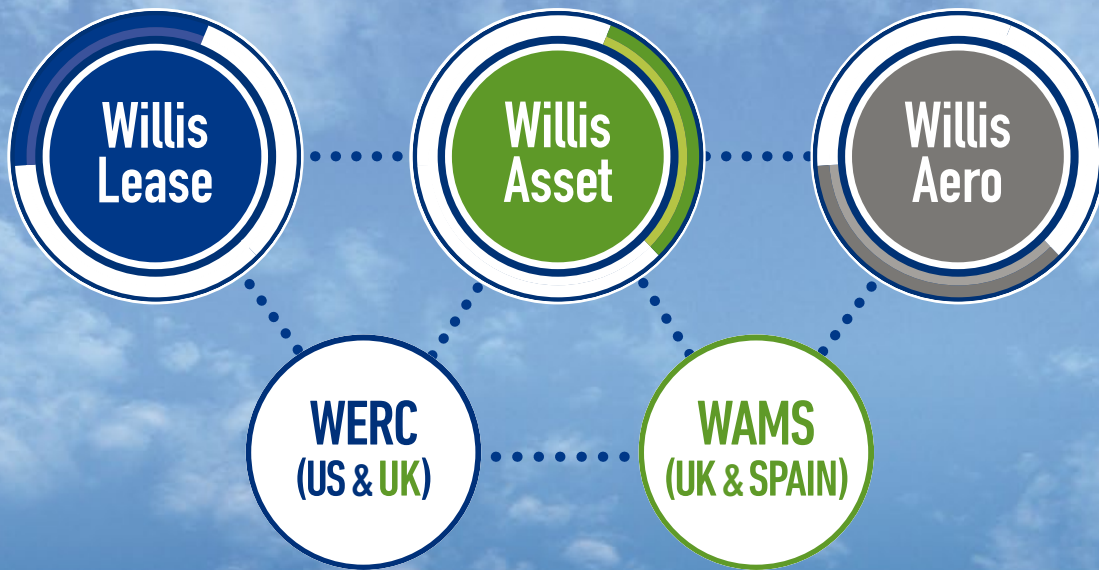


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Engineering training new niche for TAM

Partnering with well renowned U.K.-based Part 147-approved Angel Training Systems, Täby Air Maintenance, TAM, will now offer qualified on-site training at Örebro Airport for Saab 2000 aircraft, with the same service for the Saab 340 aircraft coming soon. This is a new niche for TAM, fully in line with the company's vision to be a full-service provider for operators of Saab regional airliners as well as ATR 72 aircraft, the latter included in the service portfolio this spring. Aiming to meet the needs for start-ups as well as more established airlines, expanding the range of services will enhance the company's ability to be a "one-stop-shop" for operators of the Saab and ATR 72 regional airliners. The B1 and B2 training course includes both a theoretical and practical part.

West Star Aviation completes structural FOD-repair on Embraer Legacy 650E

West Star Aviation has completed a major structural repair to an Embraer Legacy 650E fuselage. The project also included a new exterior paint scheme. The FOD incident occurred as a result of metal objects being launched by a military helicopter landing next to the aircraft while in Peru. The aircraft was evaluated and subsequently ferried to West Star's full-service MRO facility in East Alton, IL (ALN) for repairs. West Star is an authorized Embraer base maintenance service and warranty provider for most models at its ALN, GJT, and CHA locations.

Spirit AeroSystems and Belcan International enter into strategic partnership

Spirit AeroSystems(Spirit) has announced that Belcan International will be onsite as a strategic partner in Spirit's Aerospace Innovation Centre (AIC) in Prestwick, Scotland. Belcan will work directly alongside Spirit engineers when the facility opens. The companies have signed a Memorandum of Understanding (MOU) to enter into a strategic partnership. Belcan, a global supplier of engineering, supply chain, technical recruiting and information technology services, will provide Spirit with broad-based engineering capabilities and specific skills, primarily focused on supporting Spirit's wing engineering activities in Prestwick. This includes multi-disciplinary engineering skills, program management and manufacturing engineering resources. The AIC is an 85,000 ft² center to house Spirit's engineering design and manufacturing expertise alongside advanced development and pre-production equipment in a collaborative environment with key partners.



Photo: Belcan International and Spirit AeroSystems signed the MOU earlier this year in Prestwick to formalize the agreement. (Photo was taken pre-social distancing requirements.)

GKN obtains Chinese STC for ADS-B Out modification for 737NGs

GKN Fokker Services has obtained CAAC (Civil Aviation Administration of China Aircraft Airworthiness Department) supplemental type certification for ADS-B OUT modification for the Next Generation series of the popular Boeing 737.

The ADS-B Out STC, as validated by the CAAC and allows GKN Fokker Services to offer its solution to Chinese operators using the B737NG. ADS-B Out is a common system onboard aircraft that automatically broadcasts relevant data from the aircraft towards air traffic management organisations. ADS-B Out data includes the identity of the aircraft, the GPS location and direction of flight.

ADS-B Out will be (practically is) a world standard with some local variations in equipage standards with FAA, EASA, CAAC and many other mandates in place. Only those operators who will fly locally in non-mandated countries might for the time being escape from these mandates but sooner or later (also depending on the aircraft type and age) they will have to equip. For that reason, GKN Fokker Services offers many solutions, including validation activities.

The mandate from the FAA was January 01, 2020 and remained unchanged, however, due to COVID issues some counties have moved the compliance dates, for example EASA which has set the mandate at December 07, 2020.

AeroLogic and LHT sign ten-year Total Component Support contract for AeroLogic's Boeing 777F fleet

AeroLogic, the joint freight carrier of DHL Express and Lufthansa Cargo, is continuing its partnership with Lufthansa Technik through a multi-year agreement covering extensive component services (Total Component Support – TCS®). This new contract governs supply for AeroLogic's entire current fleet of 16 Boeing 777F aircraft over a period of ten years. In conjunction with component supply, Lufthansa Technik is also providing AeroLogic with

predictors via its digital platform AVIATAR to optimize both component supply and AeroLogic's operational planning. With this Total Component Support TCS® agreement, the carrier benefits from an individual supply concept that enables short and rapid transport paths. The services covered by the contract are customized to fulfill the requirements of AeroLogic, which operates two hubs in Leipzig and Frankfurt.



Boeing 777F-image AeroLogic
Photo: Boeing



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Joramco and Ryanair continue maintenance agreement



Ryanair aircraft at Joramco hangar
Photo: Joramco

Joramco, the Amman-based MRO and the engineering arm of Dubai Aerospace Enterprise (DAE), is heading into the new season and starting maintenance on the new line of aircraft after successfully completing its first-time base-maintenance agreement with the Irish budget airline, Ryanair. The agreement covered Joramco's performance of heavy checks on the airline's Boeing 737 NG fleet. Ryanair booked two parallel lines at the Joramco facility during the winter season, initially set from November 2019 until June 2020. The new line of checks started on July 15, 2020 and will continue through March 2021, consisting of five Boeing 737 NG aircraft, followed by seven Airbus A320 aircraft.

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Satair takes lead on material management services for Airbus A220

Satair, an Airbus services company, has taken the lead on global material support and services for A220 operators, working in close coordination with the A220 program team within Airbus Canada Limited Partnership. In July, Airbus Canada officially transferred the overall A220 material management services offer to Satair over the summer and as part of the integration of the program into Airbus. Overall, Satair will now be in charge of a wide range of value-adding activities including planning and inventory; purchasing; quality inspection; certification; warehousing and distribution; customer order handling; 24/7 AOG handling; initial provisioning and tool lease. Over time, Satair will also develop the areas of parts lease, repair and exchange for the A220. The customer order handling of the A220 program is now solely managed in the Satair-OEM parts and services channel with its global group of Satair companies. The A220 program headquarters are located in Mirabel, Canada, together with main customer services functions, such as engineering expertise and a 24/7/365 Customer Response Center.

First ever purpose-built regional freighter takes flight

Regional aircraft manufacturer ATR has reported the successful first flight of its new purpose-built regional freighter aircraft. The flight took off at its Saint-Martin site and lasted two hours. During the flight, crew onboard performed a number of tests to measure the new aircraft's flight envelope and flight performance. The first aircraft will be delivered to FedEx Express, one of the world's largest cargo airlines and express transportation companies, which placed a firm order for

30 aircraft, plus 20 options, in November 2017. The brand new straight-from-factory cargo aircraft will offer a number of unique advantages to operators. With a large cargo door included as part of the original design and the same wide cross section as all ATR aircraft, the freighter will be able to accommodate bulk cargo and industry-standard pallets and containers. The aircraft will also provide operators with the very latest avionics suite, which can be continuously upgraded.



First flight of ATR's new purpose-built regional freighter aircraft
Photo: ATR

The **EU-China Bilateral Aviation Safety Agreement (BASA)** went into effect in the beginning of September, giving a boost to the regions' aviation manufacturers by simplifying the process of gaining product approvals from the **European Union Aviation Safety Agency (EASA)** and the **Civil Aviation Administration of China (CAAC)**, while also ensuring high safety and environment standards will continue to be met. The agreement is the result of several years of successful efforts by experts from the European Commission, EASA and the

CAAC. "I am confident that, thanks to this bilateral agreement, the relations between Europe and China in aviation will be taken to the next level," said EASA Executive Director Patrick Ky. "This further strengthens EASA's commitment to work closely with international partners on building a safe and environmentally sustainable industry." The entry into force of the BASA was marked by EASA and CAAC holding the first joint Certification Oversight Board (COB) on September 3. During the meeting, the parties adopted the Technical Imple-

mentation Procedures (TIP) which will support the BASA and its Annex on Airworthiness. These administrative and technical procedures describe in detail how EASA and CAAC will conduct the validation and reciprocal acceptance of civil aeronautical product approvals. The entry into force of the BASA will require some previous arrangements to be revised and the two parties have agreed to make this transition as smooth as possible.



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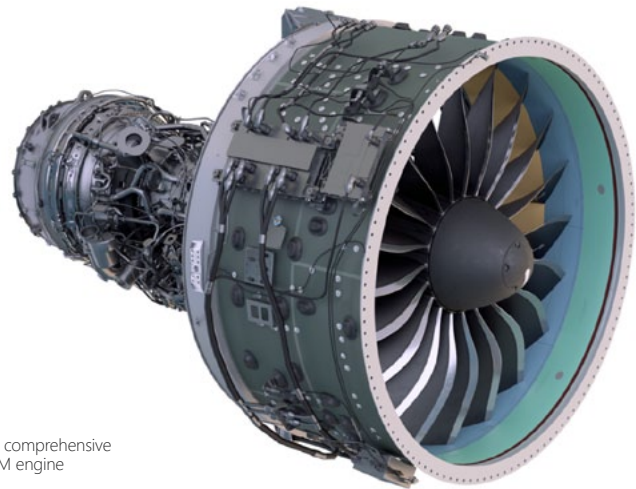
Rolls-Royce's first-half results severely impacted by COVID-19

Rolls-Royce has released its first half 2020 (H1) results, with the global COVID-19 pandemic severely impacting its H1 performance and medium-term forecasts. The most pronounced effect was seen in Civil Aerospace with large engine deliveries and flying hours both down around 50% in H1 including a 75% reduction in engine flying hours in the second-quarter (Q2), however business jets and regional flying hours were more resilient. In Power Systems, which was less severely impacted than Civil Aerospace, industrial markets were suppressed, economic disruption and lower utilization impacted demand for services while government marine was stable. Defense remained resilient with no material impact on results from the pandemic and delivered strong profit growth. ITP Aero was impacted by the same adverse industry trends as Civil Aerospace. Underlying results: The £(3.2)bn underlying loss before tax primarily reflected the impact of COVID-19 on Civil Aerospace with lower after-market profit, under utilisation of operations, lower spare engine sales as well as £1.2bn of COVID-19 related contract catch-ups and one-time charges resulting from a reduction in forecast flying hours, a reassessment of the timing and parking of aircraft and the viability of airlines. Lower expected US\$ receipts over the next seven years resulted in a £(1.46)bn underlying finance charge as the company took the necessary decision to reduce the size of its hedge book by US\$10.3bn. Reported results: Rolls-Royce's reported results were further impacted by £(1.1)bn impairment charges and write-offs, £(0.4)bn exceptional restructuring charges and adverse FX fluctuations leading to a £(2.6)bn negative movement on the market-to-market of the hedge book, partly offset by £0.5bn improvements in the expected in-service costs of Trent 1000 durability issues, which were all a consequence of COVID-19. (£1.00 = US\$1.32 at time of publication.)

Delta TechOps completes first P&W next-generation jet engine heavy maintenance visit

Delta TechOps' aviation maintenance technicians have completed the first comprehensive maintenance visit of a PW1100G-JM engine. This next-generation engine will power Delta's future A321neo aircraft and is part of Pratt & Whitney's GTF engine family, covering five aircraft platforms. This PW1100G-JM induction was a heavy main-

tenance visit where the engine was almost fully disassembled to perform targeted hardware upgrades. The full disassembly allowed for Delta TechOps teams to train, achieve certification to perform PW1100G-JM procedures, and start development of in-house repair capability as a P&W disassembly, assembly, and testing center.



Delta TechOps completed the first comprehensive maintenance visit of a PW1100G-JM engine
Photo: Delta

GATES receives approval from Argentinian and Egyptian aviation authorities to overhaul CFM56-5B/7B and CF6-80C2B engines

GA Telesis Engine Services (GATES) has received certification from the Administración Nacional de Aviación Civil in Argentina (ANAC) and the Egyptian Civil Aviation Authority (ECAA) to overhaul CFM56-5B/7B and CF6-80C2B engines. These approvals provide GATES with access to major MRO markets and will allow the company to develop and expand its customer base in both South America and Northern Africa. GATES has previously been approved by the Federal Aviation Authority (FAA), European Aviation Safety Agency (EASA), Transport Canada Civil Aviation (TCCA), the Civil Aviation Administration of China (CAAC), General Authority of Civil Aviation in Saudi Arabia (GACA) and Dirección General de Aeronáutica Civil in Mexico (DGAC).

SIA Engineering Company acquires remaining shares in HMSS

SIA Engineering Company (SIAEC) has entered into an agreement to acquire the remaining 35% issued and paid-up share capital of HMSS, representing 9,625,000 ordinary shares in the capital of HMSS from Airbus Services Asia Pacific (ASAP), a Singapore incorporated wholly owned subsidiary of Airbus SAS. HMSS was incorporated in Singapore in October 2016 to provide airframe maintenance, cabin upgrade and modification services for the Airbus A380 and A350 aircraft in the Asia-Pacific region and beyond. HMSS has an issued and fully paid-up share capital of US\$27,500,000.00 consisting of 27,500,000 ordinary shares. Prior to the Transaction, HMSS was owned 65% by SIAEC and 35% by ASAP. Completion of the transaction has taken place on August 27, 2020, and HMSS is now a wholly-owned subsidiary of SIAEC.

FLYdocs partners with Eurowings for paperless records management

Eurowings, the Lufthansa Group's point-to-point airline has signed a new contract to use the FLYdocs® aircraft records management platform across its fleet of 100 aircraft. The five-year agreement will help the airline to modernize, automate and digitize its aircraft records. The FLYdocs® platform's seamless integration with ERP systems AMOS will also help drive full digital aircraft compliance on-demand for the Eurowings team. Holger Beck, Managing Director at Eurowings Technik said: "We have accelerated our digital drive across all our operations, and the adoption of FLYdocs® is part of a smarter future at Eurowings. The digital transformation of our aircraft records will enhance our ability to adapt as well as generate major cost and efficiency savings. After working with the FLYdocs team on a number of different projects in the past, we are pleased to be on the next phase of our partnership."



Photo: Eurowings

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Frontier Airlines and Airinmar signed a new services agreement.
Photo: Airbus

Conquering new frontiers

Airinmar was selected by low fare carrier Frontier Airlines for warranty and value engineering services. **Keith Mwanlushi** talks to Matthew Davies, General Manager about the trends in component repair solutions.

A subsidiary of AAR, Airinmar announced in September a new services agreement with U.S. budget carrier Frontier Airlines. Airinmar will provide a full suite of support services covering both aircraft warranty and value engineering. Warranty management services will cover the identification, claim and recovery of the multiple airframe, engine and component warranty entitlements provided by Airbus and its suppliers. Value engineering support will include cost oversight services to assure compliance with Frontier's contracted component repairs and minimise component flight-hour out-of-scope repair charges. The services will complement Frontier's current materials management activities and focus on maximising the recovery of Frontier's warranty entitlements and reducing the cost of component repair.

Denver-based Frontier Airlines operates 100 A320 family aircraft and has the larg-

est A320neo fleet in the U.S. Matthew Davies, General Manager at Airinmar tells this publication that the adoption of electronic monitoring and technologies with new aircraft types bring a great deal of opportunity to enhance the efficiency, accuracy and predictability of component repairs. "In theory, flight and predictive maintenance data can be made available to give advance notice to the repair provider of an equipment failure, the data could be provided in advance to diagnose the likely failure mode and replacement spares could be picked prior to the failed component arriving. The industry isn't at this mature stage yet."



Matthew Davies, General Manager at Airinmar

Understandably, Davies says airlines have generally focused on what they can control first, linking up the aircraft electronic monitoring to their own maintenance control and materials management to enable proactive or scheduled LRU replacements.

Ironically, he adds that the electronic monitoring equipment comprising system components such as sensors, data acquisition units, quick access recorders and data management units can also be subject to unscheduled removal, therefore creating their own demand for component repair.

“We are excited to provide our services and deliver results to the largest A320neo operator in the U.S.”

*Matthew Davies,
General Manager, Airinmar*



Component repair.
Photo: Airinmar

To ensure consistency in terms of repair quality for aircraft components, AAR implements agreements with its suppliers, including their own internal shops, which set out the standards expected based on internal quality policies, the World Airlines Supplier Guide (WASG) and their own empirical experience. This includes quality policy on such topics as workscoping, DER, PMA and release certificates, as well as product quality assurances such as No Fault Found, rogue unit, reliability guarantees and warranty.

“In most cases, setting the standard and agreeing them in contractual terms is enough to ensure consistency. Nevertheless, once we have set the standard we need to measure and audit performance. These include proactively measuring operational performance, traditional supplier quality audits and supplier score-carding based on our standards. It is the supplier score-carding that often drives performance and identifies an inconsistency before it becomes an operational issue. By regularly measuring the performance of repair providers against our standards, we

are quickly able to identify adverse trends and implement corrective actions,” Davies explains.

With the early retirement of many mature fleets due to the Covid crisis, perhaps the market will see a greater focus on new generation aircraft component repair services. Davies suggests that the strategy and focus relating to new generation aircraft component repair is likely going to be different between narrowbody and widebody aircraft. “With the A320neo and 737Max sharing so much in common with their predecessors, repair capability development is anticipated to evolutionary in an incremental fashion. Furthermore, the retirement of the mature fleets has the potential to create a large supply of surplus material on the market that will not only benefit operators but also those looking to develop new capabilities.”

Davies feels the widebody component repair market has a vastly different outlook, as there is not only little commonality between generations, there is also a larger technology gap affecting almost every part

of the aircraft. “Those repair providers that have not already established capabilities in the latest generation of widebody component repairs are facing an ever-increasing barrier to entry.”

As a repair management services provider, Airinmar’s business unit has a unique market view across the generations of aircraft delivered by all the major manufacturers. “The demand for other component repairs services, such as management software, PMA/DER development, sourcing, warranty management and make versus buy strategies are increasing in demand as the market competition intensifies and cost reductions get a greater focus.”

Meanwhile, Frontier hopes to benefit from Airinmar’s effective warranty management and value engineering services, combined with its ability to customise solutions – “We are excited to provide our services and deliver results to the largest A320neo operator in the U.S. With 100 aircraft in service and a further 160 on order, we are proud to contribute to Frontier’s growth and success over the coming years,” states Davies.

AMOS. AGAIN.



"AMOS, which is already used as a standard tool by many LH group airlines, will also help us at Lufthansa to make our Technical Fleet Management processes even more transparent and, above all, even more efficient. Among other things, we are relying on the already very broad AMOS know-how of our sister companies. We chose AMOS because of its 30 years of success in the industry, but also because of its continuous product innovations, which help us to establish state-of-the-art processes in Technical Fleet Management at Lufthansa as well."

says CEO Lufthansa German Airlines
Hub Frankfurt

Lufthansa and Lufthansa Cargo take off with AMOS, the world-class M&E software solution.

Both carriers will implement AMOS including AMOSmobile, enabling paperless maintenance operations from the beginning.

The close cooperation of the Lufthansa group members will be further promoted by AMOScentral, which enables the exchange of data between AMOS instances while nevertheless allowing each group member to keep control over their individual AMOS environments.



Velescu welcomes the first aircraft to the Iasi MRO facility in Romania.
All photos: AEROSTAR

Star of Romania

Romanian aerospace company AEROSTAR just opened a new MRO facility at Iasi International Airport adding to its current capabilities for narrowbody maintenance. **Keith Mwanalushi** reports.

Back in 2015 we visited and reported directly from AEROSTAR's flagship MRO facility in Bacau, Romania. Fast forward five years, and amidst COVID market challenges, the company has opened the hangar doors to a brand-new facility in Iasi northeast Romania.

On September 1st, 2020 AEROSTAR unveiled the new MRO investment to the media and during August the necessary approvals were received from the airworthiness authorities for the management and execution of commercial aviation MRO activities for Airbus 320 and Boeing 737 aircraft families.

The new three-bay MRO hangar is part of

AEROSTAR's EASA Part-145 maintenance base and is a new work location for the company. The new hangar has an area of 8,400 sqm and will be the workplace for more than 100 engineers and technicians.

Speaking exclusively to *AviTrader MRO*, Loan-Dan Velescu, Director of AEROSTAR's Maintenance Base for Commercial Aviation says heavy base checks during this pandemic and the outlook for the coming months, at global level, the number of aircraft scheduled for maintenance in this winter season will be considerably smaller than in previous years. "However, most of our traditional customers have already resumed their flight schedules and even advanced or submitted a plan for their

maintenance work activities scheduled for this year."

Velescu admits the season ahead will be challenging but remains hopeful- "We are sure that by proving our flexibility and increased competitiveness we will be successful in confronting all the challenges."

The new facility at Iasi International Airport is located 130km north of Aerostar's existing business operations at Bacau where the two existing dedicated hangars provide seven aircraft bays. It is based on the second hangar in Bacau but AEROSTAR has used its experience to optimise the design further, with three doors for easy aircraft movement and back shops



Inauguration of Aerostar's MRO hangar in Iasi.

attached to the hangar along with a small machine shop.

During 2019 Aerostar worked on Boeing 737 and Airbus A320 heavy checks with more than 100 aircraft passing through its Bacau facility for 'C' and 'D' checks.

The first aircraft arrival at the Iasi facility is an Airbus A320neo (LEAP-1A) aircraft, registration TC-NBC operated by long-standing customer Pegasus Airlines of Turkey. Pegasus Airlines has a growing presence in Romania and, in 2018, AEROSTAR performed Europe's first base maintenance inspection on an A320 Neo (LEAP 1A) aircraft.

Clearly, next-gen aircraft like the A320neo's have become increasingly "digital" bringing with them new possibilities or perhaps challenges. AEROSTAR is familiar with this aircraft type, being the first MRO in Europe to execute a C-check for the NEO (Leap-1A). "It is correct that this

new aircraft model comes with state-of-the-art equipment which supports the licensed personnel to correctly identify the failures or defects and set the required corrective actions. Currently, we have not faced any significant technical challenges specific for this new aircraft model beyond the necessary investments for base maintenance."

AEROSTAR has also increased its capabilities and experience for the installation of STC modifications, including the Airconnect Global Satellite Connectivity System from Global Eagle and ACARS Datalink Systems Installations.

In parallel with the hangar development, AEROSTAR is continuing to provide training courses to licence the personnel under Part-145 and to complete the Part-66 au-

thorisations that will allow them to certify the release to service of an aircraft after maintenance, both for Bacau and the new centre in Iasi.

The integration of upcoming technologies such as Artificial Intelligence (AI) in MRO services will likely increase. Other technologies like the use of drones for inspection and defect checks are already in use as is Augmented Reality (AR).

Velescu agrees saying AI technology will certainly become a part of this industry and it will bring multiple benefits in the years to come – "Currently we are working on a better digitisation of our MRO activities and processes and certainly going through to the new technology will be the subject of thorough reviews and studies."

Since entering the commercial aviation

“By proving our flexibility and increased competitiveness we will be successful in confronting all the challenges.”

*Loan-Dan Velescu, Director,
AEROSTAR Maintenance Base
for Commercial Aviation*

MRO market in 2004, Aerostar has built a strong customer portfolio drawn from both Western and Eastern Europe, Africa and the Middle East.



A320neo (LEAP-1A) registration TC-NBC was the first at the Iasi facility.

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Satair will now oversee a wide range of value-adding activities for the A220.
Photo: Airbus

Integrated MRO solutions for new generation aircraft will ultimately grow but for now, **Keith Mwanalushi** examines the digital possibilities and how incoming technologies will shape MRO processes.

Developing an integrated aircraft MRO platform model which will combine the ability to manage, control and plan MRO activities with hangar and workshop facilities and the supply chain is an area of great interest especially with the arrival of new next-gen aircraft.

In early September for instance Satair announced that Airbus Canada had officially transferred the overall A220 material management services offer to Satair, as part of the integration of the programme into Airbus.

A press release issued by Satair said the transfer represented a key milestone for Airbus and a significant step in the overall integration of the A220 programme. "All A220 customers will now benefit from the same level of service and global network offered by Satair on all other Airbus plat-

forms", said Rob Dewar, Senior Vice President, A220 Customer Services, Customer Satisfaction and Product Policy. "This will be a significant contributor to improving the overall satisfaction of our growing A220 customer base worldwide."

The official A220 material management services have smoothly been transitioned to Satair over the summer. Overall, Satair will now oversee a wide range of value-adding activities including planning and inventory; purchasing; quality inspection; certification; warehousing and distribution; customer order handling; 24/7 AOG handling; initial provisioning and tool lease. Over time, Satair will also develop the areas of parts lease, repair and exchange for the A220. More than 100 A220s are in the fleets of seven operators flying on routes in Asia, America, Europe and Africa.

At Magnetic MRO, one of the solutions they have developed is a browser-based inspector tool which is a simple webpage where the user can log in, select the aircraft being worked on and access the layout of the aircraft, including rows etc. "The user can easily click on the item and receive all data associated with a particular interior element. Such a solution connects airline workers and maintenance teams in logging damages found in the passenger cabin of a commercial airliner and makes the work more efficient for all parties," tells Pärtel-Peeter Kruuv, Interior Project Manager at Magnetic MRO.

At AFI KLM E&M they developed their Prognos predictive maintenance solution in 2017 with these issues in mind. Prognos is based on the collection and analysis of technical data generated by the thousands of sensors installed on the aircraft's

INTERGRATED MRO SOLUTIONS FOR NEXT GEN AIRCRAFT

“We started to operate Prognos on the A350 based on algorithms already existing on the A380.”

*Marie-Caroline Lecomte,
AFI KLM E&M Engineering Support*



Next-gen aircraft like the Neo bring new possibilities in MRO.
Photo: Lufthansa

systems. “This continuous stream of flight data is extracted and analysed by the application and transmitted to our maintenance control centres, where our specialists regularly receive alerts about defective components. This exercise is made possible by the very great amount of data – up to Gb – supplied by new-generation aircraft and our extensive engineering knowledge,” says Marie-Caroline Lecomte, AFI KLM E&M Engineering Support.

Lecomte further says this solution has been initially developed on the A380 platform and now extended on legacy fleets (A320 family, 737, 747, 777) but also on next-gen aircraft such as the A350 and 787. “We started to operate Prognos on the A350 based on algorithms already existing on the A380. The idea, because the technologies are similar, was to Plug and Play from a part of the A380 modules. We focused on ATA penalising the operational availability and the algorithms are continuously improved based on the data provided by the aircraft (such as electrical power, speed, angle of attack, or temperature) but also feedback on the shop, which allow continuous improvement based on new failure cases.”

Lecomte observes that the next-gen air-

craft data volume is 10 times greater than the one provided by legacy fleets and more precise.

Going digital and the opportunities for MRO

Kruuv from Magnetic MRO sees that digitisation with next-gen aircraft is advancing but he reminds that simultaneously, the average fleet age in Europe is still over 10 years and most of these aircraft and their components were designed well before that – “The key in my opinion is to be able to find ways to integrate the available data into a common system no matter the age of the aircraft. In terms of the MRO business, I can already see that some of the norms are changing – slowly but surely. For example, the possibility where an MRO can 3D-print a spare part based on data they receive digitally from an OEM would have been unthinkable a decade ago. This clear segregation of business models between an MRO, OEM, parts trader etc is becoming less strict and this is a wonderful platform to start managing digital data in a more end-to-end way,” Kruuv notes.

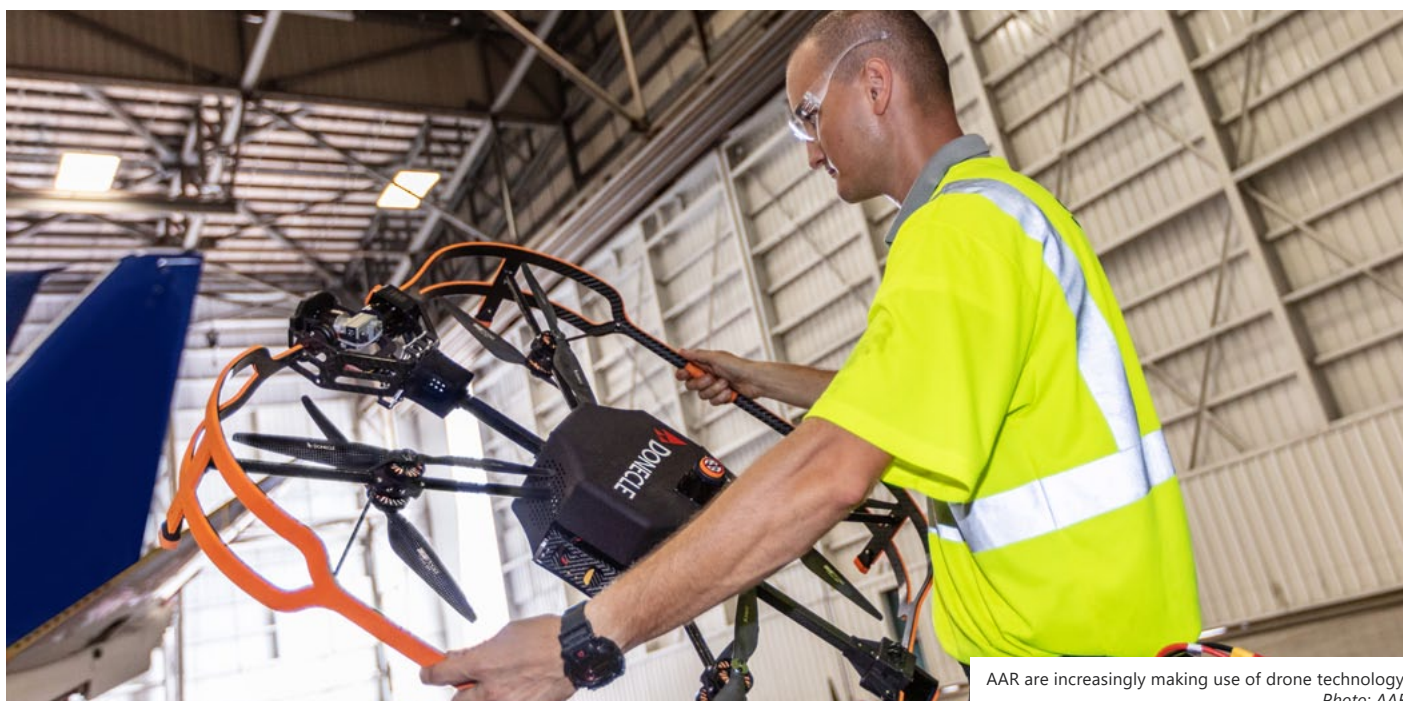
At AAR Corp in the United States, they tend to work mostly on the current generation

of aircraft versus the next-gen but clearly they are jumping onto the technology to gather data as the data becomes one and more accessible and secondly, getting back to the debate of who owns the data which is where the industry is today.

AAR are starting to use more modern technology for instance the combination of drones technology as well as Augmented Reality (AR) and Virtual Reality (VR) not specifically on the aircraft itself but the operation around the aircraft. – “These are now new data sources that we want to be able to combine with historical data for these aircraft that we’ve had coming to us for many years with the data that will start to associate with the aircraft showing up in the future as well,” says Rahul Ghai, the Chief Digital Officer at AAR. He sees great potential on the idea of having a data platform that allows the combination



Rahul Ghai, Chief Digital Officer at AAR



AAR are increasingly making use of drone technology.
Photo: AAR

of these different data sources and become the digital signature of that aircraft moving forward.

However, Ghai notes that the MRO sector is still at the early stages compared to some of the more advanced OEMs. For instance, the likes of Airbus and Boeing are trying to look towards association with conglomerates that have a common data pool. "I think a lot of it is forward

looking because no one has yet solved or had the true predictive capabilities. I would argue that most airlines are using the connected aircraft real time data that is coming off the aircraft more for operational purposes than for predictive maintenance forward looking purposes."

From a digital MRO perspective, AAR are keen and focused on any form of automation. "I think there are a range of technologies. The biggest and most broad initiative that we are working on with our MRO team is the idea of paperless."

Ghai says technicians largely work in a paper-based environment today but at AAR they have some ability to do some tasks electronically, but the vision is to eventually have a technician with a mobile device. "The mobile device becomes more than just a piece of hardware, it becomes the hub through which the technician will obviously access the information that they need but also as we combine these data sources we can start to

push proactively intelligent information to the technician to make their job easier and more efficient."

As Ghai states, the exiting element with these devices is how they communicate with the technician – "Tools such as AR and wearables, like the data coming out of drones, like historical data coming off of connected aircraft as well as the older-gen aircraft can be crunched to predictive model. We can start to push information to the technician based on the task they are doing. In today's world that technician may have to go and look certain information up. Everything improves as we start to provide the technician with more real time insight."

The goal at AAR is to get 100% of their MRO sites working digitally including visual work assignments and visual signoffs all of which require a significant technology investment but also regulatory approval. "Currently, a great deal of signoffs the FAA requires are physical signatures and we want to move more towards electronic signatures which will obviously be required as part of a digital environment."

Ghai is adamant that the industry sees the potential for digital and that everyone understands why this should move



Pärteel-Peeter Kruuv, Interior Project
Manager at Magnetic MRO

INTERGRATED MRO SOLUTIONS FOR NEXT GEN AIRCRAFT

“The key is to be able to find ways to integrate the available data into a common system no matter the age of the aircraft.”

*Pärtel-Peeter Kruuv,
Interior Project Manager, Magnetic MRO*

Mobile devices are becoming critical elements.
Photo: TRAX

ahead. “I think everyone is onboard with the idea of doing it but obviously now given COVID and in a low margin business we have to justify the investment. I believe that the efficiencies as well as the

quality of work for these investments are justified.” He reckons the challenge will be to get other partner companies also onboard but also the regulatory approvals. He says to go from a paper-based

environment to fully electronic requires regulatory and FAA oversight.

Kruuv echoes those sentiments saying digital AI and AR/VR driven solutions are indeed earning their place in aviation, and at Magnetic MRO they are keeping up with this trend, looking for possible ways to integrate such technologies into their services. “Also, we have already developed some pieces of software that show the possibilities such as the VR tool for the cabin interior design and others.

“I believe that adopting such solutions will increasingly become a new reality as it allows us to optimise services by delivering necessary information to decisionmakers in a more rapid fashion. Teams working remotely are also important these days where physical interaction is not always possible,” Kruuv concludes.



Efficiencies for technicians will include wearable technologies.
Photo: AAR



In the hot seat.....

James Bennett

Director of Sales & Marketing, AerFin

What attracted you to this business?

Bennett: First and foremost, it was the ambition of the business. I had previously worked with the CEO, Bob James, and with his illustrious track record knew that this was a company heading places. When I joined in 2016, the AerFin story was already making waves in the industry so to be part of that upward trajectory was a no-brainer! That, coupled with what is a unique aftermarket service offering underpinned by technical expertise as distinct from being just another parts provider, was instrumental in my coming on board.

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

Bennett: Being responsible for both the group sales and marketing and the P&L of the engine division makes for a hugely varied set of responsibilities.

Operationally, departmental meetings are held daily to review the team's objectives, from updates on business opportunities being progressed, proposal reviews and contract discussions. We also have a daily leadership forum with the CEO to discuss key departmental highlights and ensure communication flow to and from all areas of the business is clear and consistent.

From an engine division customer centric standpoint, we have a series of metrics that are reviewed on a daily, weekly and monthly basis all around ensuring optimum customer satisfaction. These include but are not limited to quality, on time delivery of repair and customer orders, RFQ response timelines and quotation/documentation accuracy. These are regularly reviewed with

our customers to ensure that a) we're delivering to expectations and b) that the criteria we're using meets their requirements. In addition, revenue and margin forecast reviews are undertaken to ensure we're meeting our commitments to our shareholders.

Away from the operational and into the strategic, a company that grows from strength to strength in the way AerFin has can only be successful with a clear vision. In the leadership team our role is to ensure we have a coherent, achievable strategic plan for future growth. Our marketing plan has to reflect that strategy. From market positioning to new product / market identification and associated campaigns, there's a huge amount of day to day work that goes into ensuring AerFin retains and grows its brand.

What is the most challenging part of your job?

Bennett: The AerFin business model looks very different today than it did in 2010. Any business that has grown at the rate that AerFin has will naturally have to manage a lot of change. Not always an easy task. Which is why it's critical to bring your team with you on the journey and have them fully invested. As I've already mentioned, clear communication across the business is vital, and ensuring everyone has challenging yet achievable KPIs is key both in terms of motivation and company expectation. I'm delighted that both retention of colleagues and attracting talent to the business has been made a lot easier using this approach. Of course, as we work through 2020, navigating the challenges of COVID has added another set of challenges but



James Bennett, Director of Sales & Marketing, AerFin

Briefly, tell us about the range of aftermarket support AerFin provides.

Bennett: AerFin is an aftermarket solutions specialist, focussed on delivering cost-saving sustainable solutions to our global airline, MRO, OEM, as well as asset management and leasing customer-base. We deliver a complete breadth of nose-to-tail solutions to our customers, which ranges from flight-hour-agreement programmes, engine material supply programmes, engine leasing and trading as well as an array of inventory pooling and exchange programmes.



AerFin recently entered into the engine MRO segment.

This is of course not withstanding our recent expansion into the engine MRO segment, where we work with our preferred partners to deliver a scope of engine MRO services from our 150,000 Sq. Ft EASA P145 facility in the UK, underpinned by our EASA P145 accreditation.

How has COVID-19 affected the business?

Bennett: The immediate impact has been on supply of material into our MRO partners, noting that the majority of operators have been looking to avoid all but essential repair activity as part of efforts to preserve liquidity. However, we have seen an uptick in RFQ activity as these MROs start to ramp-up operations and airlines begin returning to the skies. In addition, conserving cash is going to be critical for all so the medium to long term outlook is extremely positive for increased used serviceable material consumption.

Engine green-time leasing demand has been buoyant as operators seek cost-efficient short-term lease solutions to help support aircraft fleets return to service, whilst also avoiding potentially costly maintenance events.

As mentioned, demand for engine MRO service solutions and storage programmes has also remained strong throughout the pandemic. AerFin has been working with a number of our preferred partners to develop

comprehensive engine MRO and storage solutions out of our 150,000 sq. Ft. EASA 145 accredited UK facility.

Lastly, we also work with a number of cargo operators. That market has been very buoyant during the periods of lock-down, and that demand looks set to continue. So overall, though we've seen some short-term challenges, the medium to long term forecast looks strong for us given our platform focus, embedded relationships with airlines, MROs, OEMs and lessors alike, and our flexible technical solutions.

Embraer E-Jet aftermarket support has been an important area for AerFin. Are you looking at opportunities to progress to the E2?

Bennett: Although there is a long-term strategy for the business to transition towards supporting next-generation product lines such as the E2, our current focus lies with supporting current product lines across the E-Jet, narrow body as well as wide body segments. This is where our technical and commercial expertise is focussed. It is where we are able to deliver the most value to our customers and partners through our continued experience of maximising asset residual values and delivering the most commercially and environmentally sustainable solutions to our global customer base.

AerFin recently expanded its U.S. business development team. What is the key focus now for business development in the Americas?

Bennett: The Americas is a key strategic growth area for the business. With over 30% of the global fleet operating in North America it is clearly a very mature and competitive marketplace with many aftermarket and MRO players as well as a much more consolidated airline customer base than Europe or APAC.

However, AerFin is approaching the market with a long-term strategy in mind, bringing a new range of services to the airline customer-base which focusses on reducing airline's maintenance costs, whilst ensuring we maintain a world-class level of customer service.

Whilst the narrow body market will of course be a huge focus for AerFin, it goes without saying that the significant E-Jet customer base in the region will be a particular focus for AerFin, especially when you consider that almost 70% of all global E-Jets are operating in the Americas.

One of our key investments in 2017 was the acquisition of 15 E175s from Saudia. Not only does this make AerFin the largest stockist of E-Jet inventory outside of Embraer themselves but it's proven to be the springboard for a long term airframe component support service offering (Beyond.Pool™), engine and



Great Dane Airlines CEO, Thomas Hugo Moller (L) and Chris Hooley, AerFin's Director, Airframe

major asset lease services, repair management and engine component solutions.

The E-Jet product is less mature than the A320ceo and 737NG market, with fewer alternative solutions for airlines looking to minimise airframe and engine maintenance costs. However, with this vast volume of inventory, coupled with our extensive experience of delivering technically and commercially bespoke solutions to our existing E-Jet operator-base, AerFin is bringing to the region a range of alternative maintenance solutions for E-Jet and CF34 operators.

What are the key benefits for airlines looking for a tailored component flight hour solution, especially smaller regional carriers?

Bennett: The extent to which an airline benefits from a component Flight Hour (FH) solution is largely down to the component support partner that it selects for the programme. Although the headline benefits of a flight hour programme such as delivering cost certainty, avoiding heavy investment in inventory and reducing strain on internal airline resources, are fairly consistent throughout the market – the true benefits of a FH solution are very much in the operational and commercial detail of each individual partnership.

AerFin's leadership and senior management team have extensive experience of working in technical and supply chain divisions for airlines across the world. They therefore know first-hand the frustrations

of selecting the wrong component solution partner and therefore perfectly positioned to understand which FH solution is optimally tailored to the airline on both a commercial and operational level.

AerFin's Beyond.Pool™ FH component solution focusses on delivering a customised solution that is entirely bespoke to the airline and its budgetary and operational requirements. These factors are becoming increasingly important for airlines, not least as we try to navigate the unpredictable nature of the COVID landscape.

Beyond.Pool™ is also proving to be a particularly appealing solution for both start-up E-Jet operators as well as existing operators who are introducing the E-Jet aircraft into their fleet as evidenced by AerFin's recent Beyond.Pool™ agreement with Danish op-

erator Great Dane Airlines.

What is next in the pipeline at AerFin?

Bennett: AerFin announcing CataCap as the business' new majority shareholder last year was a real milestone for the business, not least as we welcome a majority shareholder with a long-term strategic vision that is fully aligned with the AerFin management team. This is paramount for not only helping the business to continue growing its market share on existing aircraft and engine platforms but also helping the business expand its services across different market segments, platforms and in different geographical regions. This last point of course, is evidenced by the recent expansion of our North American presence.

Addressing the "Elephant in the room", the immediate focus for the business lies with how to navigate the COVID storm and the new environment that it is being caused by COVID. We are already noticing new trends of behaviour throughout different segments of the industry as key stakeholders seek technical and commercial expertise to help drive efficiencies in their businesses. This applies to our entire customer base; airlines, MROs, lessors and investors.

Expanding our MRO services is and will continue to be a particular long-term focus for the business. Pre-COVID, the MRO segment was experiencing particular capacity challenges. Although we anticipate that COVID will offer some respite to these challenges, demand for specialised engine MRO solutions as well as additional technical consultancy services will be of fundamental importance as airlines seek innovative, bespoke solutions that will help avoid significant investment and mitigate cost exposures.



The E-Jets remain an important platform for AerFin.
Photo: Keith Mwanalushi

**ABOVE AND
BEYOND**

EVERYTIME.

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



Enabling the aftermarket

Since the 1970s, Kellstrom Aerospace has diversified its business into one of the premier global aftermarket service providers. The company offers a full range of aftermarket services including asset leasing solutions, technical and on-wing services, and OEM distribution service. It also provides USM supply agreement and 24/7 AOG support to OEMs, airlines, leasing companies, air transport operators and MROs worldwide. Investment from AE Industrial Partners provided the company with the financial strength to implement a strategic growth plan that works with the vision of President and CEO, Jeff Lund to transform the business from an aftermarket supplier to a full-service aftermarket organisation.

Today, Kellstrom Aerospace Group includes multiple business units that offer one of the most comprehensive portfolios of services to the commercial aircraft sector. The strategic combination of these business units enables cost-saving solutions across all value-based platforms.

A timeline of Kellstrom business units

Kellstrom Aerospace expanded in 2013 through the acquisition of Airliance Materials to become a global leader in aftermarket inventory solutions. The company actively supplies material across all major commercial platforms and offers 24/7/365 AOG services.

Kellstrom Aerospace Distribution Services

- Kellstrom diversified into new distribution solutions by partnering with OEMs and manufacturers to market and supply their equipment. Distribution services were strengthened through the acquisition of Transaero Commercial Distribution, which added 35 OEM lines to the business. Kellstrom's OEM Distribution delivers Just-In-Time (JIT) cost savings solutions to over 2,000 airline and MRO customers in 90 countries. This includes a worldwide inventory of 4.9 million Part Numbers with over 300,000 PNs in their New OEM Product Distribution business across all ATA chapters.

Kellstrom Aerospace Technical Services (KATS)

- KATS was established in 2017 to provide technical and commercial consultancy services to owners, lessors and operators of aircraft engines by providing third-party access to technical and commercial experts. KATS was launched because of market demand for solutions that combined technical and commercial expertise to manage asset portfolios through technical, commercial and risk management. This service meets the needs of lessors with unbiased technical support coupled with the knowledge of the aftermarket end-of-life value process. KATS also works with operators to optimize their fleet management solutions, including maintenance, remarketing and consignments, ultimately providing value to customers as a cost-saving platform.

Kellstrom Aerospace Asset Management (KAAM)

- KAAM was established in 2019 to manage aircraft portfolios that would be on a longer-term lease and help optimize and manage the lifecycle risk of



Vortex Aviation facilities provide operators and lessors with engine repairs by avoiding heavy shop visits.

assets on behalf of owners or financial institutions. KAAM provides full-service asset management, including asset sourcing, evaluation, lifetime management and end-of-life solutions. This is particularly beneficial to those looking for experts who are capable of protecting the value of an asset whilst maximising the revenue potential over a medium-term lease and the asset's lifecycle.

The Aircraft Group - The Aircraft Group is a world-leading supplier of technical consulting and advisory services focusing on identifying and mitigating technical and financial risk. Core services include aircraft and asset transition, lease return and delivery, unscheduled early returns, repossession and records recovery, acquisition due diligence, maintenance oversight and P2F, regulatory compliance and technical records.

Vortex Aviation - Vortex Aviation is a global "on-wing" and "off-wing" turbine engine support company operating around the clock with facilities in the US, Europe and Asia. All locations are FAA Part 145, EASA Part 145 and/or AS9110 approved facilities with certified skilled technicians and quality managers. These facilities help operators and lessors with engine repairs by avoiding heavy shop visits.

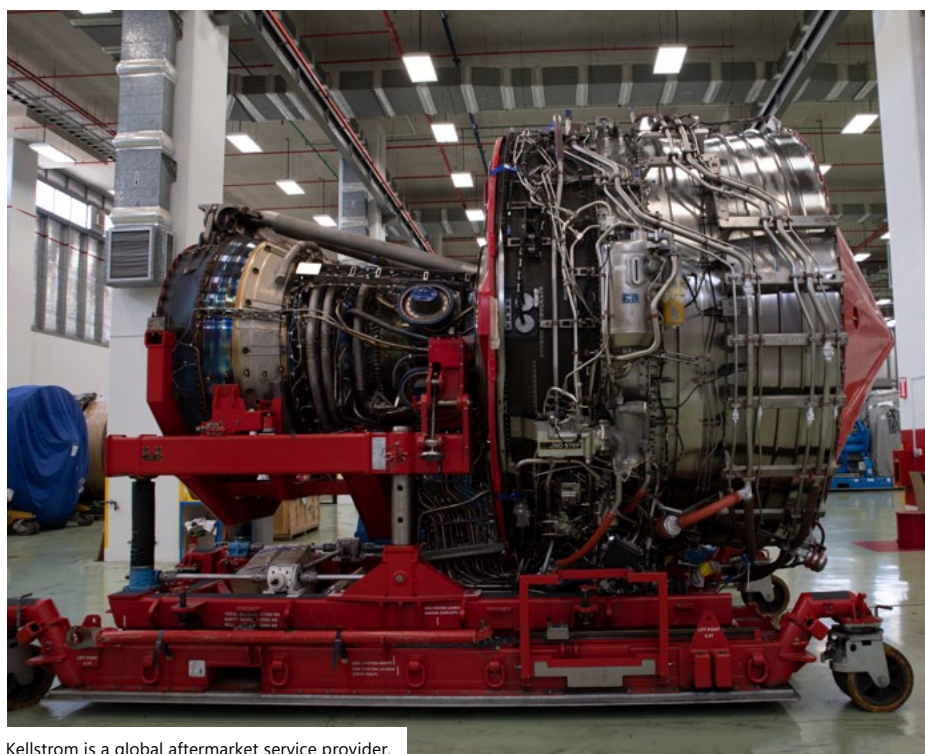
Meeting the changing needs of customers

Kellstrom Aerospace has the history of a large organisation with the agility of a startup. The company's success is based on the experience and expertise of a

team spanning across leasing companies, OEMs, airlines, MROs and consultancies who thrive at rapidly reacting to changing demands in the industry. Kellstrom continues to use a service and technology-led approach to aftermarket services, which is seen in the creation of its business units. From reacting to the needs of lessors with KATS to providing a comprehensive asset management solution with KAAM, Kellstrom Aerospace aligns its services with industry demand.

Kellstrom continues to increase the asset portfolio of lease assets to ensure that the availability of part out equipment is ready to meet the demands of customers who require long term and reliable partners. In addition to the used aftermarket business, Kellstrom is growing into an exclusive global distributor for lines supporting airlines and MROs around the world on almost every commercially available aircraft and engine at each lifecycle stage.

Global expansion has also been key to Kellstrom's success over years. The company's global reach and inventory spans worldwide with locations in Asia, Europe, and North America. Kellstrom added a new 55,000 sq. ft. facility in Singapore and a new 42,100 sq. ft. facility in Dub-



Kellstrom is a global aftermarket service provider.



Kellstrom Aerospace Group includes multiple business units including teardowns.

lin. Other locations include a primary inventory warehouse in Chicago with more than 160,000 lines and 2.8 million parts in stock. It also occupies international stocking locations in England, Ireland, Singapore, U.A.E. and China PRC. Most recently, Kellstrom Aerospace and Vortex Aviation relocated its joint headquarters to a state-of-the-art 65,000 sq. ft. facility in Davie, Florida. This was an important milestone for the company.

Key areas of business

Kellstrom Aerospace provides a variety of exclusive and innovative integrated platform solutions for every stage of an aircraft lifecycle, including emerging, mature and sunset cycles. The company supports leading OEMs, airlines, leasing companies, financial institutions, air transport operators and MROs around the world. As a diversified aftermarket service provider, Kellstrom's core foundation is bringing value to the customer.

Key areas of business include:

- Robust supply chain solutions to airlines

and MROs for quality new or used aftermarket parts. Kellstrom maintains several agreements with OEMs and manufacturers to distribute new products and support using a serviceable material business.

- Green time lease to part out model and hold a portfolio of serviceable assets including CFM56-5/7, V2500-A5, CF6-80C2 and PW4000 that align with inventory strategies.

- Strategic acquisitions with The Aircraft Group and Vortex Aviation that creates unrivalled access to technical expertise. This advantage provides unbiased support aimed at reducing the total cost of ownership of an asset whilst protecting the commercial residual value.

- High-quality standards and first-class professionalism, which is instilled in all aspects of Kellstrom Aerospace and what customers have come to expect of their business. The company is highly regulated and has a rigid ISO 9000 quality process in place.

- A workforce that is its greatest asset, de-

livering the highest level of customer service and commercial value to customers. Kellstrom leverages their team's diverse background of industry professionals who have experience in airline service, military service, and engine MRO functions while holding positions as mechanics, quality inspectors and powerplant engineers.

Investing in the future

Kellstrom Aerospace is a forward-thinking company that continuously searches the industry for new opportunities to expand and grow through mergers and acquisitions or organically. As part of AE Industrial Partners, Kellstrom is committed to providing customers with nose to tail aftermarket solutions. Their investment strategy is driven by the needs of customers.

While the industry is adjusting to the realities of a post-COVID-19 world, Kellstrom Aerospace and the Board of Directors see an opportunity to continue strategic expansion into new verticals that add value to their customer base.



Mastering the paint job

André Eisele, aircraft design artist and owner of Aircraftstyle, and **Rihards Priedkalns**, Aircraft Paintshop Manager at Magnetic MRO share their insights on the art of aircraft painting.

Tell us about the most exciting projects you've worked on: what were the main challenges? How did you cope with these challenges? Why are these projects special for you?

André Eisele: For me, each task is a great challenge, as the enormous time pressure does not allow for mistakes. There is only a "routine" for tasks that are always the same, such as the Thomas Cook logo, the Sunny Heart and similar. However, even such tasks pose their challenges, like keeping the production time as short as possible, and every element had to be absolutely identical. Taking the Sunny Heart example, it took us 3 days for the first Sunny Heart job, but I was able to reduce the time to 9 hours for 2 Sunny Hearts. And in the end, I have painted about 28 of these.

In terms of technical challenges in my line of work, since an aircraft fuselage is no different from an XXL pipe, you have to think three-dimensionally when designing the side surfaces. One of the greatest technical challenges is to adapt animal heads to an aircraft nose. On the other hand, colour gradients that run over the entire fuselage are a team task and relatively easy. You need an excellent paint team for this. I can only intervene through the choice of colour and positioning.

What also excites me is the interaction of the entire painting team with the result at the end, standing in front of a unique paint job is a great experience every time. For example, painting the head of a Tiger/Leopard on the nose of a B747 or a B777, even though the shape of the airplane doesn't allow this, is really fun. To make such a portrait look perfect from all angles, to meet the gaze (the position of the eyes) 100% correctly, plays an extremely important role and is really exciting. Nobody tells you how to do it, so I let myself be carried on the wave of my 40 years of experience.

Rihards Priedkalns: I have worked on more than 450 painting projects in my 10-year aviation career, and nearly every project has been interesting, and nearly all of them have contained some challenges.

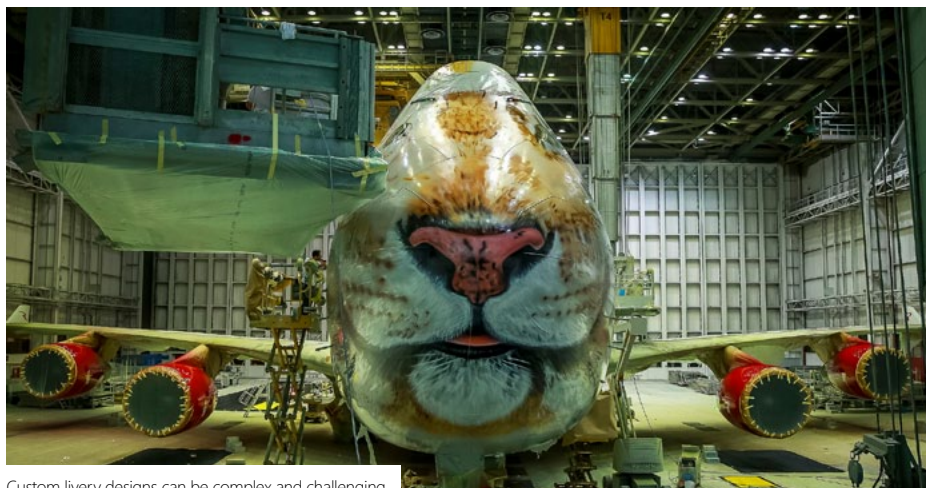
It was at the beginning of 2014, we were painting a Boeing 777 for Qatar Airways. André was subcontracted to perform Barcelona FC flag on AFT section of the fuselage, and it took around 5 days to complete this artwork. I was involved in supervising and assisting with all livery decals and paintings and we were working together to achieve this awesome result. The biggest challenge in this project was the time to perform this custom Barcelona FC flag painting: back then, basecoat maximum overcoat time was around

130 hours what with only 5 days time to paint artwork before you need to apply clearcoat and this is a window that can't be extended or postponed. If clearcoat is not applied in this window, then you can face clearcoat delamination issues afterwards. Fortunately, under pressure and a lot of hours and coffees – everything was completed in time, and the result was outstanding. This is why this project was special to me. I met André, and I had to see and participate in the creation of this artwork!

What are your favourite liveries of all time (not necessarily you've worked on)? Why do you like them?

RP: My favourite liveries are the Brussels Airlines Tomorrowland and Belgian Red Devil liveries. It is pure artwork with hundreds of different colours, and you can really see the work going into it. As a former painter myself, I can feel and appreciate the workmanship that has gone into these liveries — beautiful pieces of art.

Of course, from the Magnetic MRO portfolio, I can mention 3 AirBaltic A220 aircraft painted into Baltic state colours. For me, it was pure joy to participate in such a project as a manager. A lot of hours went into planning this project, and the result is something we can really be proud of.



Custom livery designs can be complex and challenging

AE: In the last 10 years I was lucky enough to be able to work exclusively with great teams, and the tasks were so varied that I cannot make any reasonable comparisons and therefore have no real favourites!

What are the key requirements and preparation actions to keep in mind when considering custom design? What do clients have to keep in mind?

RP: Key to success and quality work is not to speed! I always say that customers need to consider that painting of aircraft is quite hard and a time-consuming. Custom airbrush livery application is not the easiest job on aircraft purely because of its size. Additionally, I would advise customers to think about further heavy maintenance tasks that is done quite often and requires stripping of aircraft parts or changing engine thrust reversers or fan-cowls. There is just some locations for

every aircraft type where custom artwork could be a problem when the restoration of artwork is required.

AE: From my experience and point of view, the most important thing is to exceed the customer's requirement - the "happy customer" is always in the foreground. And it is very helpful to be involved with customers in the early phase of the design development, as commercial graphic designers in agencies and graphic departments often do not understand that they have to design on a XXL pipe and that they do not have a flat 2-dimensional surface in front of them as is usually the case.

However, I can really appreciate that my reputation is so well established that my customers give place sufficient trust in me and given me sufficient freedom – and that's very important when making a custom design!

Rihards, can you take us through the latest innovations?

RP: Painting of aircraft is still in the stone age if we are talking about innovations! Its still a hard and time-consuming process that involves a lot of time and manpower. Paints and chemicals have changed a lot, though. Now due to REACH, a lot of Chromate products are replaced by more eco-friendlier chemicals. There is still a lot of work in future, but it is getting better. And taking innovative actions by Magnetic MRO, we have purposely built a paint hangar that has a automatised ventilation and heating system; also, the hangar is equipped with LED lighting all around, and we are using the latest electrostatic painting equipment.

André, what techniques you are using for your artworks?

AE: I mainly work in a freehand airbrush technique. I don't have too many stencils, and we don't celebrate dramatically elaborate tape orgies!

And how long does it take on average to paint an aircraft?

AE: I usually get 8-10 days for an A320 / B737 and 4-5 days for a B747 or B777: this is due to the enormous grounding costs.

However, it is different from private jets - here the time factor is not really relevant, and I get almost every time all the time I want. This means that such a task can take 3 to 4 weeks.

airBaltics 'Latvia' livery



PEOPLE

»»»»→ *on the move*

Safran has named **Olivier Andriès** as Executive Vice President, effective September 10, 2020. He is a member of the Group's Executive Committee. As initially announced, Andriès will succeed **Philippe Petitcolin** as Chief Executive Officer of Safran on January 1, 2021. **Jean-Paul Alary** has been appointed Chief Executive Officer of Safran Aircraft Engines, effective September 10, 2020. He succeeds Andriès and is a member of the Group's Executive Committee. **Cédric Goubet** has been named Chief Executive Officer of Safran Landing Systems, effective September 10, 2020. He succeeds Alary and is a member of the Group's Executive Committee. **Vincent Caro** has been named Chief Executive Officer of Safran Nacelles, effective September 10, 2020. He succeeds Goubet and becomes a member of the Group's Executive Committee.



David Power



Paul Naylor

Aergo Capital (Aergo) is expanding its aviation platform by significantly developing its Structured Products capabilities. These enhanced customer services will be provided by senior strategic new hires complementing existing expertise. Aergo's bold expansion highlights its confidence in the future of aviation, despite the ongoing impact of COVID-19 on the industry and further positions the company to take advantage of opportunities going forward. Additional or enhanced client services include capital and financial structuring; joint ventures using its platform strength and lease management capabilities; remarketing assets; acquisition; disposal; technical advisory; and restructuring services. Joining the Aergo team are **David Power** as Executive Chairman (Structured Products) and Board Director Aergo Holdings and **Paul Naylor** as Chief

Commercial Officer (Structured Products), each of whom have over 30 years of relevant experience. The Structured Products team will be enhanced by the appointment of **Martin Browne** as Chief Operating Officer, **Jasmine Chan** joins as Operations Manager, and the addition of several new team members, both internally and externally.



David Goring-Thomas

Stratos Aero has added three senior industry professionals to its team: **David Goring-Thomas** joins as Senior Advisor on various strategic initiatives, **Paul Goodfellow** as Head of Risk & Restructuring and **Jamie Carter** as Marketing Director. Goring-Thomas has more than 30 years' experience in Aviation Finance, including over 20 years at DVB Bank, for the larger part as Global Head of Aviation. Good-

fellow has over 12 years' experience in the aviation sector across banks, airlines and lessors: most recently, he held risk and restructuring roles covering repossession and debt/arrears management at Aer-Cap and ALAFCO. Carter is an airline professional with over 30 years

of experience with top-tier airlines in both Europe and Asia.



Paul Goodfellow



Jamie Carter

Immediately prior to joining Stratos, he was Head of Aircraft Procurement and Trading at Cathay Pacific Airways.