

MRO

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Gaining Approval

For maintenance organisations

Engine Material
Costs

Q&A:
Caerdav

MRO News
from around the world

People on the Move
latest appointments





The focus is on market recovery

Since my last editorial comment in May, it's encouraging to see the return of some commercial air services as governments around the world ease some travel restrictions. The global aviation industry was one of the first industries impacted by the Covid-19 pandemic and will most likely be one of the last to fully recover.

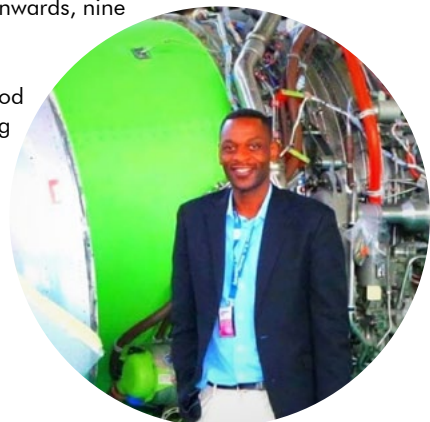
However, in the last couple of weeks we have seen some positive news coming from the airlines as they begin to reinstate services across their networks. We have seen carriers like Virgin Atlantic being saved by financial packages that should ensure it keeps flying through the turbulence. To minimise the knock-on effects of the outbreak, economies in Europe are starting to reopen while stimulating tourism to salvage the summer holiday season and limit the financial fallout from the pandemic. The pace of recovery by destination will vary and will depend on the extent to which they rely on international source markets and the revival of consumer confidence. Industry data released by the European Travel Commission this month indicates that travel to Europe is expected to be 54% lower this year than in 2019, not surprisingly.

It is also positively refreshing to see the airlines coming back to support the service sectors. Earlier this month Brussels Airlines announced the partnership with FLYdocs to support its end-of-lease (EOL) return services for a fleet of five Airbus A319 aircraft. In the cabin interiors sector, Middle East Airlines (MEA) selected Panasonic Avionics to upgrade the airline's IFE offering on its A321 fleet. Upon delivery from July 2020 onwards, nine A321neos will become the first connected aircraft to join MEA's fleet.

Speaking of cabin interiors, interestingly, Safran's new aircraft interior factory could be a good post-Covid-19 bet. An aerospace and defence analyst at GlobalData says with Boeing seeing cancellations of B737 MAX orders, Safran's surprising decision to invest in a new Mexico-based factory focusing on Boeing's commercial aircraft interiors is a step forward in what could be the future of commercial aviation. By betting on a renewed aircraft interiors output, as the Covid-19 pandemic still rages, Safran is already positioning itself for a post-crisis rebound!

Keith Mwanalushi
Editor

Virgin positions itself for a post Covid 19 future.
Photo: Virgin Atlantic





Cover image:
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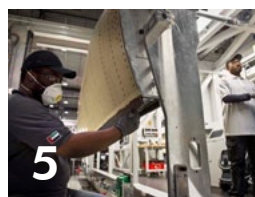
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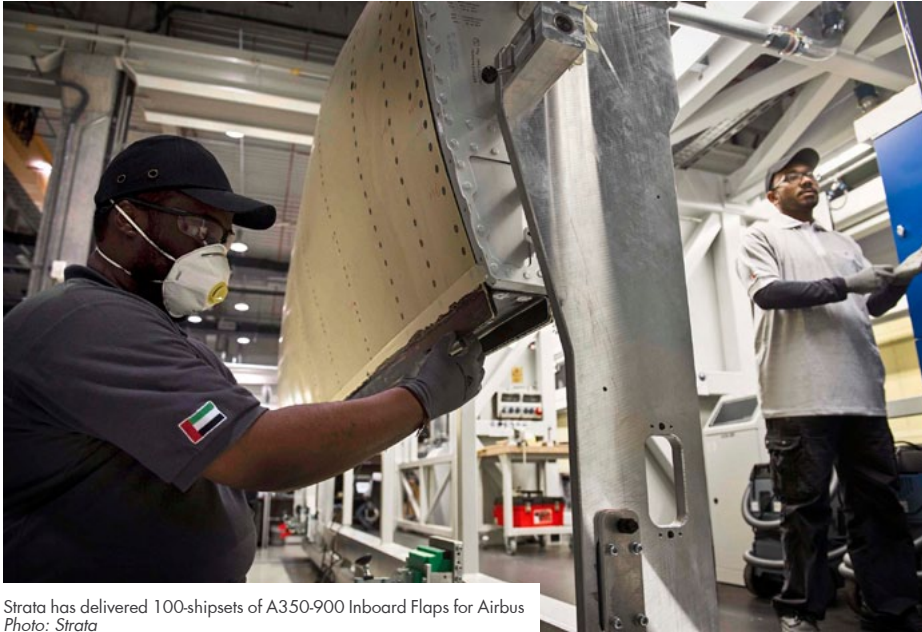
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Strata has delivered 100-shipsets of A350-900 Inboard Flaps for Airbus
Photo: Strata

Strata delivers 100-shipsets of A350-900 Inboard Flaps for Airbus

Strata Manufacturing (Strata), the advanced composite aero structures manufacturing facility wholly owned by Mubadala Investment Company PJSC, has successfully delivered 100-shipsets of the assembled A350-900 Inboard Flaps (IBF). Having completed the full first article inspection for the fabrication of six IBF components at its state-of-the-art facility in the Nibras Al Ain Aerospace Park, Strata now assumes fabrication and assembly duties in partnership with Airbus. To fully-automate the IBF manufacturing process, Strata will utilize Hot Drape Forming (HDF) and computer-controlled robotic Automated Tape Layup (ATL) machines, which gained first part qualification and first article inspection design and quality verifications early this year.

N3 becomes volume shop for Rolls-Royce Trent XWB-84k engine

N3 has delivered the last Rolls-Royce Trent 500 engine after a regular overhaul under the current business model. As the only remaining location in the Rolls-Royce network, the joint venture company of Lufthansa Technik and Rolls-Royce will maintain its capacity for the Trent 500 for the time being and continue to offer its services. Between 2007 and 2020 a total of 540 Trent 500 engines have been overhauled at N3. The future, however, belongs to the latest and most modern engine type, the Rolls-Royce Trent XWB-84k, powering the Airbus A350. The team is currently expanding its capacity for the overhaul and

repair of the Trent XWB and by next year the XWB is expected to form the majority of the overhauled engines at N3.

SR Technics introduces Remote Table Inspection for Engine Services

MRO service provider SR Technics has announced that table inspections at its engine shop in Zurich are now also offered remotely. The new service, which relies on a video streaming portal, can be selected for any engine type or shop visit. Remote Table Inspections (RTIs) at SR Technics help to minimize waiting times, significantly reduce travel costs and process time and eliminate bottlenecks. In addition, the flow of engine materials is

not affected by an RTI, since items do not need to be blocked as with a physical table inspection. Besides optimizing material flow and streamlining the inspection process, all results are documented and made available to the customer in real time. A dedicated SR Technics Innovation team had been working on this improvement project when the coronavirus pandemic broke out in March 2020, making this virtual solution urgent. Thanks to the team's impressive efforts, the remote inspection service went live at the end of April 2020. Now all SR Technics engine customers can follow the inspection work on their engines, parts, and modules conveniently and remotely from their home base.

Meggitt expands aviation repair capabilities in Asia

Meggitt, an international company specializing in high-performance components and subsystems for the aerospace, defense and selected energy markets, has received authority approval to repair over 80 new part numbers at its newly expanded Services & Support center of excellence in Singapore. The purpose-built site serves as the regional hub for aerospace aftermarket in Asia. At 42,000 ft², the facility has doubled in size to incorporate fire detectors, cable assemblies, actuators, sensors, valves and heat exchangers, adding several new capabilities to the current portfolio. Meggitt's Services & Support division established its site at Seletar Aerospace Park, Singapore, in 2012, and this latest expansion was driven by the significant growth in content Meggitt has secured on next-generation aircraft platforms including the A350XWB, A320neo, Boeing 737MAX and both GTF and Leap engines.



Meggitt Service & Support center Singapore
Photo: Meggitt



Emirates offers more cargo capacity with aircraft modification
Photo: Emirates

Emirates Engineering modifies 10 Boeing 777-300ER aircraft for expanded cargo service

Emirates has introduced additional cargo capacity by using Boeing 777-300ER aircraft with seats removed from the economy class cabin. The measure has been introduced in response to the strong air cargo market demand for the

rapid, reliable and efficient transportation of essential commodities such as Personal Protective Equipment (PPE), pharmaceuticals, medical equipment, food, machinery and other supplies around the world. Emirates SkyCargo will be operating 10 Boeing 777-300ER aircraft with economy class seats removed, allowing for up to 17 tons or 132 cubic meters of additional cargo capacity per flight on top

of the 40-50 ton cargo capacity in the belly hold of the widebody passenger aircraft. The modified Boeing 777-300ER aircraft are being deployed on routes to key production and consumer markets where Emirates SkyCargo sees maximum demand for movement of urgently required goods.

Thomas Global's TFD-7000 series LCD flight displays certified for Boeing 767 in Japan

Thomas Global Systems has received Japan Civil Aviation Bureau (JCAB) Supplemental Type Certificate (STC) approval for the company's TFD-7000 Series plug-and-play LCD flight displays for Boeing 767 CRT-equipped aircraft. JCAB approval of the TFD-7000 Series for Boeing 767 follows FAA Technical Standard Order (TSO) and STC approvals last year for Boeing 757/767 and 737-3/4/500, and more recent approvals from Transport Canada Civil Aviation (TCCA) and the European Aviation Safety Agency (EASA). Deliveries to a prominent operator in Japan are scheduled to begin later this year.



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Photo: MAC Aero Interiors production facility in Tallinn

MAC Aero Interiors' production facility receives Airbus approval to start producing aircraft interiors in Estonia

MAC Aero Interiors, a subsidiary of Magnetic MRO, a global provider of Total Technical Care for aircraft operators and lessors, has had Airbus-approved-supplier status for many years. As a new milestone, the Magnetic MRO facility has received approval from Airbus to start producing interior elements for Airbus aircraft in its production facility located in Tallinn, Estonia. MAC Aero Interiors has previously been producing parts for Airbus in the former plant in the U.K. before relocating the production facility to Estonia in early 2020. The manufacturing line in Tallinn has received the approval from Airbus for future production of literature pockets for A380 aircraft.

MTU Aero Engines to adjust personnel capacity by end of 2021

Due to the impact of the coronavirus pandemic on international aviation, MTU Aero Engines plans to adjust its personnel capacities. By the end of 2021, the company aims to reduce capacity at its German and international locations by a total of around 10 to 15%. This will be carried out largely through individual agreements such as the increased use of partial retirement, early retirement and other arrangements. The target figure will also be reached through measures that have already been initiated, such as an extensive hiring freeze or waiver to fill vacant positions, as well as a reduction in working hours. "As a result of the pandemic, the aviation industry will remain under pressure for some time to

come. It will be years before air traffic – which is the foundation on which our activities in series production and our maintenance business rest – returns to pre-crisis levels," said CEO Reiner Winkler. "We have no interest in compulsory redundancies or social plans and will coordinate our approach very carefully with the works council. We want to keep as many of our highly qualified colleagues on board as possible during and after the crisis. We will continue to offer our partners and customers the high level of quality and service they have come to expect."

Embraer Services & Support completes first Praetor 500 conversion

Embraer Services & Support has completed the first conversion of a Legacy 450 to a Praetor 500 for an undisclosed customer. The conversion was performed at the Embraer Executive Jets Service Center at Bradley International Airport in Windsor Locks, Connecticut. In order to generate the impressive range improvements synonymous with the Praetor 500, the level-sensing wiring in the fuel tanks were replaced, the over-wing gravity fueling ports were moved, the fuel measurement system was relocated, and the wing ribs were reinforced to hold additional weight. These adjustments entailed updates to the flight control systems, including a new avionics load for the acclaimed Collins Aerospace Pro Line Fusion flight deck. Most noticeably, the iconic swept winglets of the Praetor were installed, and the placards and logos were replaced to officially convert the Legacy 450 into a Praetor 500. The conversion was made possible by the expertise of structures and avionics specialists, A&P mechanics, logistics teams, and engineers from Embraer operations around the globe. The full process to convert a Legacy 450 (2,900 nautical miles range) into a Praetor 500 (3,340 nautical miles range) can be performed at the Bradley Service Center, as well as at Embraer-owned Service Centers in Fort Lauderdale, Florida, Sorocaba, Brazil, and Le Bourget in Paris, France.



Embraer has completed the conversion of a Legacy 450 to a Praetor 500 jet
Photo: Embraer

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North Berwick facility
Photo: P&W

Pratt & Whitney adds GTF MRO capabilities to North Berwick

Pratt & Whitney will invest US\$12.5 million into its North Berwick, Maine facility, expanding its Pratt & Whitney GTFTM maintenance, repair and overhaul (MRO) network. North Berwick will perform maintenance on high-pressure turbine and high-pressure compressor modules for the PW1100G-JM engine. This investment bolsters Pratt & Whitney's global GTF MRO Network and accelerates growth by utilizing the facility's already existing expertise. The addition of GTF high-pressure turbine and high-pressure compressor module maintenance at North Berwick benefits GTF operators by reduction of lead-time associated to compressor upgrade and repair. The transformation will consist of upgrades to the current space, increasing efficiencies to help minimize disruption to the current flow of operations and allowing for a seamless transition as the facility takes on a new role.

lead to a dual-engine power loss event and/or display of hazardous misleading data, which could result in a "forced off-airport landing." Boeing has confirmed that it supports "the FAA's airworthiness directive, which makes our recommended action mandatory" in addressing the potential impact of electrical energy on the 737 MAX. In December, Boeing said the issue affected airplanes built between February 2018 and June 2019 and that "the protective foil inside the composite panels may have gaps." Post inspection, airlines will replace any excessively reworked panels and modify an assembly, thus ensuring adequate electrical bonding.

Honeywell starts flight tests to refine sensor technology that will guide vehicles to land autonomously

Honeywell has begun in-flight testing of sensors that will guide urban air mobility (UAM) vehicles to land without pilot intervention.

Aircraft involved in the testing are outfitted with Honeywell sensors and include cameras that analyze visual markings resembling QR codes, which help guide the vehicle to a designated landing spot. This is a key first step for the future of flight as Honeywell adds sensors that support safer, autonomous urban air mobility operations. Testing of these sensors is currently underway to gather data and refine their capabilities to support future autonomous landing capabilities. Data collection was compiled in Arizona using Honeywell's AS350 helicopter, and additional testing is planned in collaboration with Honeywell's partners. This milestone in testing furthers the initiative to achieve cleaner, safer and smarter aircraft and signals important progress to the goal. As testing and data collection move from proof-of-concept prototypes to reality, there are many benefits to improving navigation and implementing features such as automatic landing. With more automatic features and processes, pilot workloads will ease and critical maneuvers during intense phases of flight will become easier and safer. Operations may also benefit from the strategic use of autonomous landing, making vehicle throughput more predictable and reducing turnaround time. Passengers can ultimately benefit from the improved reliability, safety and comfort of smoother autonomous landing practices along with more reliable transportation schedules. Honeywell's data collection work will continue for the rest of 2020, with the demonstration of fully automated landings taking place within roughly the next 12 months. When fully developed and tested, these solutions will be the latest addition to Honeywell's rapidly expanding UAM product portfolio.

U.S. FAA finalizes directive relating to 737 MAX potential engine power loss

The U.S. Federal Aviation Administration (FAA) has finalized its directive relating to the inspection of a key 737 MAX component that, if faulty, could result in engine power loss. The airworthiness directive was initially produced in February in response to a service bulletin issued by Boeing back in December 2019. The directive related to concerns that certain 737 MAX exterior panels on top of the engine may lack the electrical bonding necessary to ensure adequate shielding of underlying wiring from the electromagnetic effects of high-power radio frequency transmitters and other sources. The FAA warned that it: "could potentially



UAV landing
Photo: Honeywell



Photo: Inflight The Jet Centre, adds Bombardier Global 700 Series to its approvals

Inflight The Jet Centre adds Bombardier Global 700 Series to its approvals

Inflight The Jet Centre (ITJC), part of the Inflight group of companies, based at London Stansted Airport, will add base maintenance capability for the Bombardier Aviation Global Express (BD700 Series). Capability for both line and base MRO is now active under ITJC's Part 145 organization EASA rating. Further applications are in process to add the BD700 Series to all other NAA existing capabilities held by ITJC. "This is another important strategic step for Inflight The Jet Centre, following our acquisition of Bombardier MRO specialist Excellence Aviation early in 2019. This latest accreditation expands the portfolio of aircraft types we can support and we look forward to working with, and supporting more Global Express operators in Europe and the Middle East," commented Alan Barnes, General Manager, Inflight The Jet Centre. With the now concluded integration of Excellence Aviation businesses, (which include CAMO and its Part NCC aircraft management business) Inflight can offer solid expertise as a Bombardier Challenger and Global BD700 MRO business. "This equips us well to serve demands for maintenance support on Bombardier platforms in the region – and at our London Stansted home too," Barnes added. Inflight remains fully operational for both base and line maintenance, as does Inflight's fully integrated VVIP integrated award-winning FBO – available to all corporate services.

U.K. and Spanish employee furloughs extended by Airbus as COVID-19 lingers

Airbus has announced that it will be extending staff furloughs in various company sec-

tors in both the U.K. and Spain. In the UK, some 2,200 Airbus workers will have their period of furlough extended up until August 9, while in Spain, most of the company's SL employees will be furloughed until September 30, which extends to approximately 3,100 people. "Airbus Helicopters and Airbus DS employees in Spain are not impacted", a spokesman said. In France, 29,500 of Airbus employees are working at an approximately 30% reduced capacity and the company anticipates that once the furlough period is over, there will be "deep" job cuts because of the knock-on effects of the coronavirus pandemic. The company had advised senior staff it must be "resized" in plans to be set out

around end-June. Towards the beginning of the month, France announced a 15-billion-euro (\$16.76 billion) support package for its aerospace industry to protect a massive number of jobs were at stake amid a slump in air travel demand due to the coronavirus. According to the French government the total included 7 billion euros (US\$7.8 billion) of aid previously announced for Air France and an acceleration of existing orders for Airbus tankers and other military kit.

IAI secures contract with DHL International to convert additional passenger aircraft

Israel Aerospace Industries (IAI) will convert an additional three B767-300 passenger aircraft to cargo aircraft, with the potential for a fourth aircraft. This contract marks another major milestone for IAI's aircraft cargo conversions program and the broadening of business for IAI's Aviation Group. Over the last decade, converted B767 have been the backbone of the cargo aircraft market. To maintain IAI's future dominance in this market and to offer new solutions, IAI's Aviation Group signed a contract with GECAS to design, develop, and certify the B777-300 passenger-to-cargo conversion. IAI's Aviation Group was established in January 2019 by combining the company's commercial and military aircraft activities. IAI's Aviation Group is one of the world leaders in the design, development, and certification of passenger-to-cargo aircraft conversions.



DHL Cargo
Photo: IAI

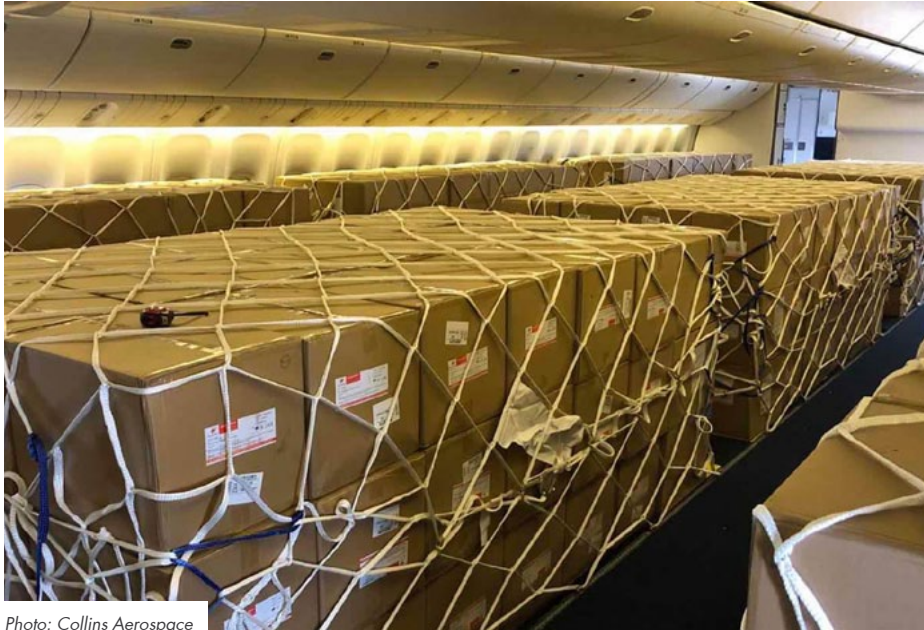


Photo: Collins Aerospace

Collins Aerospace's quick-turn changeover for passenger aircraft enables fleet flexibility

Collins Aerospace Systems has developed and implemented a multi-tiered solution that converts passenger aircraft into a cargo configuration, allowing airlines fleet flexibility to transport critical medical materials, goods and other freight in response to the COVID-19 pandemic. The quick-turn conversion, available for any passenger aircraft model, can be completed in as few as seven days and involves removing seats to allow a substantially higher volume of cargo carriage on the main deck floor. The aircraft can easily be converted back to a passenger configuration when the airline desires. Through its Integration Engineering facility in Everett, Washington, Collins Aerospace has an extensive history in aircraft modifications and is able to offer Engineering Order (EO) solutions for rapid conversion as well as Supplemental Type Certification (STC) for cabin modifications to carry greater weight and various cargo types for longer-term flexibility. Cabin reconfiguration solutions may be implemented with the FAA or EASA approvals.

DAS/FLITE combine capabilities

Dallas Aeronautical Services (DAS) and FLITE Components (FLITE) will now work in conjunction with one another as sister companies supporting a wide range of composite and aerostructure repairs. The joint efforts and capabilities shared between DAS and FLITE will provide a stronger foundation of

services available to all commercial, regional and corporate aircraft customers. This will also allow both companies to build on their favorable industry reputations within their specialized aviation markets. Both DAS and FLITE provide a wide spectrum of composite and aerostructure repair capabilities and are centrally located in the Dallas, TX area for the convenience of the customer. DAS (Dallas Aeronautical Services) and FLITE Components are affiliates of West Star Aviation. Both FAA- and EASA-approved Part 145 Repair Station locations are centrally located in Dallas, TX for customer convenience.

GAMECO launches 737-800 Boeing Converted Freightier (BCF) program

GAMECO (Guangzhou Aircraft Maintenance Engineering Company Limited) launched its 737-800 Boeing Converted Freightier (BCF) program on June 16, at its Guangzhou base, holding a door-cutting ceremony of its first 737-800 Boeing Converted Freightier (BCF), which commenced the production phase of the program. GAMECO and Boeing launched work on the new production line of the 737-800BCF last year in response to growing demand in the air cargo market. With sharp declines in passenger air travel, airlines have shifted some of their business toward air cargo, as freighter needs have increased in response to greater cargo demands during the COVID-19 pandemic. Amidst these circumstances, the air cargo market has embraced phenomenal challenges and opportunities and now plays an important role in both anti-pandemic relief activities and the reconstruction of supply chains. The 737-800BCF is built on the Next-Generation 737 platform, well known for its reliability, fuel efficiency, and lower operating cost. GAMECO's freighter-conversion program transitions these passenger airplanes into freighters, extending their service life. A converted 737-800BCF airplane carries up to 52,800 pounds (23.9 metric tons) of payload with excellent operating economics to maximize operator profits. Since entering service in 2018, the 737-800BCF has won more than 130 orders and commitments.

Door-cutting ceremony at GAMECO's Guangzhou base
Photo: GAMECO



FAI has completed "Project Pearl", the refurbishment of a Bombardier Global Express
Photo: FAI Technik

FAI completes stand-out "Project Pearl" Global Express refurbishment

Germany-based MRO, FAI Technik GmbH, part of the FAI Aviation Group, has completed its latest refurbishment, "Project Pearl", a pre-owned Bombardier Global Express – D-AFAL (MSN 9016). The multi-million-euro project represents one of the most extensive refurbishment projects for the type. The project, which took approximately 10,000 manhours to complete, includes 15/30/60, 120 and 240-month inspections. The Global features an all-new cabin with the latest cabin management and entertainment systems. This includes Collins Aerospace's VenueTM enabling passengers to watch HD movies and listen to enhanced digital audio throughout the cabin and Honeywell's Ka-Band broadband technology, delivering ultra-high-speed satellite connectivity. The aircraft's custom interior was designed by FAI's design partner, award-winning German design specialist, Tim Callies, who is well known for his work on Boeing BBJ's, Airbus ACJ's and Global Express business jets.

GAMECO breaks ground on component business and composite repair center

GAMECO (Guangzhou Aircraft Maintenance Engineering) celebrated the groundbreaking of its CBC (Component Business Center) and CRC (Composite Repair Center). With a total investment of about 600 million yuan (US\$85 million), the two facilities are expected to go into operation in early 2022. Ideally located at the northwest corner of Guangzhou Baiyun International Airport with easy access to the north extension of the airport highways, the new facilities will be close to GAMECO's

headquarter and replace the existing facilities 20 km away at downtown Guangzhou Baiyun district. A total construction area of 54,000 m², divided in 38,000 m² for the CBC and 16,000 m² for the CRC, will give ample space to integrate all critical processes under one roof and realize a highly advanced "one-stop total service" concept. With GAMECO's experienced staff and the support of China Southern Airlines, these two facilities will continue to be a leading force and benchmark in the Chinese MRO industry. Already today GAMECO, covers most of the common aircraft types with deep and comprehensive component repair capability. With the establishment of these two facilities, GAMECO will usher in a phase of accelerated development, leading to more comprehensive modification/refurbishment/out-of-manual repair capabilities of airborne components, such as avionics, electrics, instrumentation, IFE, pneumatics, hydraulics, mechanical, fuel, hot air and wheel brake, as well as composite structure parts, such as a

nacelle, inlet cowl, thrust reverser, fan cowl, nozzle, radome, slat, flap and rudder, etc. Beside our important A320/330 and B737/777 component business, GAMECO will also invest into the development of capabilities for new-generation aircraft, esp. the B787 and A350.

TARMAC Aerosave opens fourth aircraft storage site at Paris-Vatry airport

TARMAC Aerosave, an expert in the storage, transition, maintenance and recycling of aircraft and engines, has opened a fourth site at Paris-Vatry airport, in the Grand Est region, offering its customers a reception point in northern France. This site, in addition to the historic site at Tarbes and the Teruel (Spain) and Toulouse-Francalaz sites, brings the overall capacity of the aircraft storage group to 270 aircraft. The Paris-Vatry site can accommodate all types of aircraft, though for associated storage and maintenance service only. A former NATO base, known for its large reception capacity, a runway of nearly 4,000 m, 24-hour-a-day opening time and freight activities, the Paris-Vatry platform provides TARMAC Aerosave with a parking area of more than 60,000 m². TARMAC Aerosave can now accommodate 30 aircraft of all types, according to group standards: parking adapted to the tonnage, and maintenance exclusively carried out by TARMAC Aerosave staff based in Vatry. Rémi Paillassa has been appointed project manager for the Paris-Vatry site and has already commenced duties on site. TARMAC Aerosave is thus positioned in the immediate vicinity of the main European airports (London, Paris, Amsterdam, Frankfurt, Brussels) providing airlines with a "rear base" for short- or medium-term storage.



Photo: TARMAC Aerosave Paris-Vatry site



Photo: Strata Solvay Advanced Materials facility in Al Ain

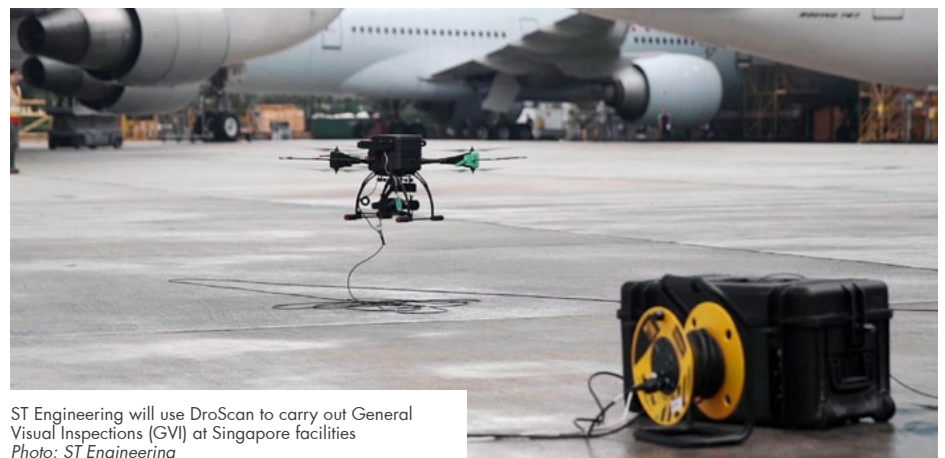
Strata completes construction of joint venture facility with Solvay in Al Ain

Strata Manufacturing (Strata), the advanced composite aero structures manufacturing company wholly owned by Mubadala Investment Company PJSC, has completed works on the Strata Solvay Advanced Materials (SSAM) high-tech facility in Al Ain, a joint venture with Solvay, Belgium's materials and chemicals company. The completion of the SSAM facility heralds the beginning of Strata's diversification journey, with the Al Ain manufacturer now the Middle East and North Africa (MENA)'s first supplier of aerospace-grade pre-impregnated carbon fibers and the fourth globally. The completion of the facility also marks a new chapter in Abu Dhabi's drive towards a sustainable home-grown manufacturing sector. The 8,500 m² SSAM facility is currently being equipped with the latest technology and machinery prior to the testing and qualifying of processes designed to supply carbon fiber prepreg materials for primary structure applications in Boeing's 777X program. Key positions have already been assigned to UAE nationals. Khalid Al Nuaimi, a Strata engineer, will head the Strata Solvay project and manage communications between the two companies, as well as execute the business plan, budget and purchasing of equipment for the facility. Ghubaisha Al Ameri, currently a quality engineer at Strata, will also transition to the new team.

Magnetic MRO conducts first virtual aircraft inspection

Magnetic MRO, a Total Technical Care and asset management organization, has announced the recent successful completion of its first virtual inspection of an aircraft, as part of pre-lease preparations. This inspection signifies the industry's resilience and ability to adapt to the changed norms in the aviation industry. Since the global COVID-19 hit the globe and para-

lyzed air traffic, the aviation industry became one of the hardest-hit industries. As many countries imposed lockdowns, asset sales are almost frozen – this also includes some procedures that were previously deemed as routine for MROs. The process of asset liquidation is just one of the areas that have been challenged by the restriction of movement; however, modern tools and innovative solutions can be adapted in order to proceed with such tasks, at least to a certain extent. That is the approach taken by Magnetic MRO – the company has recently completed its first virtual inspection as physical inspection was not possible during the given times. Performed by the company's engineering department, the inspection was executed with the preparation of video material of both the airframe and interior. During the virtual inspection, a structured file system was implemented, allowing a potential customer to efficiently locate and analyze any aircraft section. As a company representative stated, this test inspection allows clients to receive all needed information without physically being present and will be used for future inspections both when travel restrictions are in place and in other cases when physical inspections are not possible.



ST Engineering will use DroScan to carry out General Visual Inspections (GVI) at Singapore facilities
Photo: ST Engineering

ST Engineering receives first authorization from CAAS to perform aircraft inspection using drones

ST Engineering will be using its in-house developed drone solution, DroScan to carry out General Visual Inspections (GVIs) during aircraft maintenance at its maintenance, repair and overhaul (MRO) facilities in Singapore after its aerospace sector received authorization from the Civil Aviation Authority of Singapore (CAAS). This is the first-ever authorization granted by CAAS for the use of unmanned aerial systems to perform GVI on Singapore-registered aircraft. With this authorization, ST Engineering can apply its DroScan solution on approved aircraft models such as the Airbus A320 family. An end-to-end aircraft external general inspection solution, DroScan leverages automation and smart analytics capabilities to bring about higher efficiency and greater workplace safety during aircraft maintenance work. The Group had, over the past one year, demonstrated the solution's capabilities and benefits through a number of successful trials with participating airline customers including Air New Zealand. By using drones to physically carry out visual inspections, DroScan eliminates the need to set up bulky ground equipment such as boom-lifts and work stands for inspectors to climb up and down during manual inspections. Inspectors can, instead, conduct indirect GVIs using live video feed and post-flight images captured by the drones. Captured images can be fed through algorithms that detect and classify defects to assist the inspectors in the review process. In addition to smart analytics capability, DroScan is incorporated with safety features that could allow for future operations within Singapore's civil aerodromes. These features include a precise localization system to navigate in GPS-denied environment, power tethered system for extended flight duration and controlled safety template, multiple sensors for obstacles detection, and geo-fencing to prevent the drone from straying out of flight template.



Chapman Freeborn has signed an agreement to acquire Arcus Air Logistics
Photo: AirTeamImages

Chapman Freeborn acquires Arcus Air Logistics

Chapman Freeborn, a global aircraft charter specialist and company of the Avia Solutions Group (ASG), has signed an agreement to acquire Arcus Air Logistics and Arcus Air OBC from the Arcus Air Group. Offering ad-hoc air cargo charter and on-board courier services pri-

marily to the automotive industry, Arcus Air Logistics is a respected and established supplier with a brand history of over 45 years. The company provides cargo charter services with its own fleet of two Dornier 228-212 aircraft, and a variety of additional aircraft. Over the 2015-2019 period, Arcus Air Logistics' average annual sales were €22 million (US\$24.6 million). Arcus Air Logistics is a valuable addition to Chapman Freeborn's service portfolio. It brings significant synergies in the emergency cargo logistics space where Chapman Freeborn is a leading player with ambitious plans for future growth. "We are proud to welcome the highly experienced teams of Arcus Air Logistics to our growing family. This is an opportune time to join forces given the trends in the global cargo logistics space. I believe Arcus Air Logistics will further strengthen our group's business as we continue our strategy of growth through diversification in the niche aircraft charter industry", says Russi Batliwala, CEO of Chapman Freeborn.

AerCap raises US\$3 billion of funding in second quarter 2020

AerCap has announced its major business transactions during the second quarter of 2020: it has raised funding of US\$3 billion, including US\$2.5 billion of unsecured bonds during the second quarter. The company purchased two new aircraft, Airbus A320neo

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A321-200PCF

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Family aircraft, and executed sale transactions for nine owned aircraft, including three Airbus A320 Family aircraft, five Boeing 737NGs and one Boeing 757 aircraft. AerCap has signed lease agreements for ten aircraft, including one widebody-aircraft and nine narrow-body aircraft.

DAE provides first-half 2020 business update

Dubai Aerospace Enterprise (DAE) has released the following updates on business activity, liquidity and customer deferral requests:

DAE's owned, managed and mandated-to-manage fleet stayed stable at 400+ aircraft. During the first half of 2020, DAE sold or novated 17 aircraft, acquired five aircraft, transitioned or extended leases on 23 aircraft, and negotiated 41 lease extensions subject to documentation. Since the onset of the COVID-19 pandemic, DAE has transitioned 11 aircraft with 18 ferry flights to and from nine countries. Portfolio lease utilization remained high and is above 99%. The managed aircraft portfolio grew to 73 aircraft. DAE ended the first half of 2020 with total available liquidity of US\$2.8 billion which comprised of approximately US\$600 million of unrestricted cash and US\$2.2 billion of long-term committed available lines of credit. The company repurchased US\$187 million of its own bonds in the first-half 2020. Over the next 12 months, DAE has only one bond maturity of US\$430 million in August 2020. DAE continues to receive rent deferral requests; to date the company has granted 29 rent deferral requests totaling aggregate rent of approximately 12% of annual reported revenue. The company is currently evaluating an additional 28 rent deferral requests totaling aggregate rent of approximately 6% of annual reported revenue and expects to provide additional assistance to its clients and also expects arrears to climb as clients continue to refine their operating models.

Textron ceases flight simulator production in Canada – up to 2,000 jobs to go

Textron Inc (Textron) has announced that its plant in Montreal, Canada, which manufactures flight simulators is to suspend production until further notice, endangering approaching 2,000 jobs across a number of business units. The suspension of operations is as a result of the effect the coronavirus pandemic has had on the travel industry. Textron also anticipates fewer sales for its Cessna business jets and ground support equipment for the foreseeable future. "There has been a substantial decline in demand and order cancellations for flight simulators in light of the expected long-term impact of the pandemic on the commercial air transportation business," the company said in a filing. Textron also said it would record pre-tax charges of US\$110 million to US\$130 million in the second quarter related to the restructuring. According to Reuters news agency, Textron will continue to produce flight simulators for other fixed-wing aircraft and rotorcraft at its Tampa, Florida, U.S. factory. Textron also manufactures Bell helicopters and anticipates 2020 cash outflow in the range of US\$80 million to US\$95 million. The expected job losses will amount to approximately 6 percent of Textron's employees, having already furloughed some 7,000 U.S.-based workers in March.



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Gardner Standard acquires Shadin Avionics

Gardner Standard has announced the acquisition of Shadin, L.P. d.b.a Shadin Avionics (Shadin Avionics) from The Wright Group. Based in Eden Prairie, Minnesota, Shadin Avionics maintains a rich history of designing, manufacturing, and providing support services for fuel flow systems, engine trend monitoring, altitude management systems, air data computers and other instrumentation for turbine, piston and rotor aircraft for the military, general and corporate aviation markets. More recently, Shadin has redefined itself as a global leader in aviation electronics (avionics) integration and data management solutions with its Avionics Interface Systems (AIS) and new Volta product lines. These products simplify aircraft modernization and will support future generations of conventional and electric aircraft. Led by CEO Daniel Nelson, Shadin Avionics is growing rapidly and is well-positioned to continue that success with its recent move to a state-of-the-art 20,000 ft² design and manufacturing facility in Eden Prairie. Terms of the transaction were not disclosed.

Air Lease Corporation announces pricing of public offering of US\$850 million of senior unsecured medium-term notes

On June 17, 2020, Air Lease Corporation has announced the pricing of its public offering of US\$850.0 million aggregate principal amount of 3.375% senior unsecured medium-term notes due July 1, 2025 (the Notes). The sale of the Notes is expected to close on June 24, 2020, subject to satisfaction of customary closing conditions. The Notes will mature on July 1, 2025 and will bear interest at a rate of 3.375% per annum, payable semi-annually in arrears on January 1 and July 1, of each year, commencing on January 1, 2021. The Company intends to use the net proceeds of the offering for general corporate purposes, which may include, among other things, the

purchase of commercial aircraft and the repayment of existing indebtedness. BofA Securities, Inc., J.P. Morgan Securities LLC, MUFG Securities Americas Inc. and Wells Fargo Securities, LLC are acting as joint book-running managers for the offering of the Notes.

Rolls-Royce burns through £3 billion in first half of 2020

With the effects of the COVID-19 pandemic seeing flight hours of Rolls-Royce engines halved, the British company has advised that it has already burned through £3 billion (US\$3.8 billion) and anticipates that a further £1 billion (US\$1.3 billion) of outflow will transpire in the second half of the year.

For the months of April through June, flying hours for its engines fell 75 percent. While still having £8.1 billion (US\$10.5 billion) available, Rolls-Royce is now looking at options to strengthen its balance sheet, according to Warren East, the company's CEO. He told reporters this Thursday that: "The COVID-19 pandemic has created a shock across the entire civil aviation industry," adding: "Across the first half of this year, widebody engine flying hours, which we get paid for under our servicing contract, were half of what they were last year."

The company has already announced that 9,000 jobs will go, predominantly from its civil aviation sector, but East warned that there may also be a need to close sites. He further cautioned that though engine flying hours may recover by up to 70 percent in 2021, engine delivery numbers would remain suppressed, indicating that the restructuring target would be to create free cash flow of approximately £750 million (US\$975 million) by 2022. While some analysts believe that if the COVID-19 pandemic rages on or a recovery in the industry is delayed then Rolls-Royce may need to turn to the government for help, East was more pragmatic: "The number one thing governments all around the world can do to help this industry is to get people flying again."

Information Technology



Sault College soaring to new heights with WinAir Version 7
Photo: Sault College

Sault College and **WinAir** have partnered together to fully implemented WinAir Version 7 – the latest and fully web-based release of WinAir's aviation management software – for the College's School of Aviation. The software provides an aviation maintenance solution

for supporting the daily operations at the College's flight school. This decision to collaborate with WinAir led to a remarkably simple product implementation with WinAir's software implementation team, which took place in mid-January. Since WinAir's software workflow and proven training methodology adheres to aviation maintenance best practices, Sault College was able to quickly take charge of the solution and go live with the product in early February. Now that the software has been in place, the College is realizing operational gains and envisioning ongoing success with the product. Sault College School of Aviation was established in 1974 at Sault College in Sault Ste. Marie, Ontario, Canada. It operates with 14 fixed-wing aircraft, comprised of 12 Zlin Z-242L single-engine trainer aircraft, and two Piper PA-44 Seminole twin-engine light aircraft.

Embraer has signed a contract for a capital investment in **Tempest Security Intelligence**, resulting in a majority interest in the company. The largest cybersecurity company in Brazil, Tempest, positions itself as a provider of complete solutions for business protection in the digital world. With offices in Recife, São Paulo, and London, it serves more than 300 clients in Brazil, Latin America and Europe. Founded

in Recife in 2000, Tempest is one of the companies to receive an investment from the Aerospace Investment Fund (Fundo de Investimento em Participações Aeroespaciais – FIP) created by BNDES, FINEP, São Paulo Development Agency (DESENVOLVE SP) and Embraer, the goal of which is to strengthen the aerospace, aeronautical, defense, and security production chain. Through the Aerospace Fund, Embraer has enjoyed indirect participation in Tempest since 2016. Brazil has the second-highest rate of cybercrime in the world, second only to Russia. As a consequence, Brazilian companies lose up to US\$ 10 billion a year to cybercrime, which includes financial theft, as well as that of intellectual property and confidential information.

This month **ILS** and **CCI** launched SalesEdge, along with multiple new solutions for their Aviation Aftermarket customers across the globe. All solutions were announced and demonstrated at the ILS/CONNECT and Component Control virtual conference on July 9, 2020. This event attracted 1,000+ aviation professionals and had featured various leading aviation industry aftermarket executives, including multiple airlines as well as OEMs like Embraer.

DELIVERING SIX NEW SOLUTIONS TO THE AVIATION AFTERMARKET IN 2020

SalesEdge is an intelligent RFQ and smart quoting management tool, designed for sellers who want to prioritize and quote with intelligence all incoming requests from potential buyers. Using AI and ML, customers can recognize the highest-value RFQs quickly, benefit from advanced filtering and sorting, and leverage RFQ consolidation from multiple marketplaces incl. ILS, StockMarket.aero, and PartsBase. SalesEdge maximizes time and effort and allows sellers to quote with all available information at their fingertips. SalesEdge can be deployed by ILS customers, as well as in combination with CCI's Quantum (QC) ERP software providing unique functionality sets in real-time, e.g. enabling users to quickly quote via a streamlined browser interface that extends the existing ILS and QC experience, apply company policy based warnings and restrictions (e.g. preventing a quote/transaction), and much more. **SalesEdge** integration

with **CORRIDOR** will be available in the fall, and customers can subscribe to SalesEdge via any CAMP Systems owned software company.

AutoQuote allows sellers to automatically quote anything they set a price on, allowing sales organizations to be 'always-on' and free valuable time to focus on more complex sales opportunities. In addition, AutoQuote allows customers to set their own pricing limits, progressing their e-commerce capabilities.

Customers can use **IPC Analyzer Libraries** specific to Airframes and/or Engines to search by part catalog, part numbers and applicability, by ATA chapters, price, and other critical variables, to determine what combination of airframe and/or engine parts can deliver the most profit to their business. Using ILS' AI and Machine Learning driven Market Intelligence, customers can leverage insights from nose-to-tail to find those parts most demanded and valued to substantiate their plane and/or engine part-out purchase decision. Currently the IPC Analyzer Library includes a wide variety of Airbus, Boeing, Embraer planes as well as IAE V2500 and CFM engines, with many more added each month.

ILS and Component Control also announced solutions available for customer preview in 2020 e.g.; – **ADW – ILS' Aviation Data Warehouse**, which is the underlying Big Data repository for ILS, provides customers in the aerospace and defense industry business intelligence across commercial/ military airframes to support several business processes, and includes e.g. over 300M price points captured. – **QC RESPONSE MANAGER** or **QRC** – reacting to the status that orders are set to, QRC automates the process by sending an e-mail from Quantum Control to the person that needs to give it attention to, allowing those users to approve, reject or update orders remotely, simplifying processes while improving data integrity. – **QC MOBILE WAREHOUSE** or **QMWH** – supporting the various personas in a warehouse, e.g. receiving (launched earlier) physical inventory counting and stock movements, as well as stock picking. Mobile Warehouse is a suite of applications that support these personas providing the ability to move from one order requirement to another without coming back to the Desktop PC.

Other News

StandardAero has completed the successful consolidation of the company's Winnipeg, Manitoba, Canada Helicopter Center of Excellence (COE), after accelerating the final phase of integration of helicopter MRO engine operations into one site. In addition, the company's transition program included the integration of two additional COEs located in Langley, British Columbia, and Summerside, Prince Edward Island, Canada, to support helicopter airframe/component MRO services and turboprop engine MRO services, respectively. The two-year COE restructuring program was originally expected to be completed by the end of 2020. "The early completion of our COEs was a key element to ensure organizational efficiency and increase our capability to respond more effectively to the dynamic and uncertain market conditions that currently affect customers' operations anywhere in the world," said Claus Eisenschmid, Vice President and General Manager, Winnipeg Helicopter COE. To further support customers, the company also invested additional resources in facility improvements and acquired a brand-new test cell supporting Rolls-Royce M250/RR300 helicopter engines

Panasonic Avionics (Panasonic) has been selected by **Middle East Airlines-Air Liban** (MEA) to provide inflight entertainment and connectivity (IFEC) solutions for 15 of its Airbus A321 Family aircraft. Upon delivery from July 2020 onwards, nine A321neos will become the first connected aircraft to join MEA's fleet. They will be line fitted with Panasonic's eX1 seatback IFE solution, designed specifically for narrow-body aircraft. eX1 offers elegant full HD seatback monitors, complete with touch displays and handsets, and an intuitive, personalized interface. Passengers will have access to USB and laptop charging power points at every seat as well. MEA's A321neos will also be fitted with Panasonic's inflight Wi-Fi service, with a host of next generation connectivity benefits from fast internet to video streaming, all powered by its new satellite modem which offers bandwidth up to twenty times greater than previously available. Panasonic's high-performance connectivity is a powerful way for airlines to build brand loyalty by delivering new and personalized content to passengers inflight.

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Certification of Approval

Developing MRO competency requires essential approval.
Photo: Caerdydd

Maintenance organisation approvals are essential in demonstrating capabilities for MRO services. **Keith Mwanalushi** looks at the critical systems involved in obtaining authorisations.

The approval of organisations that perform maintenance on aircraft and aircraft components is a rigorous process and vital to ensure MRO and support services meet specific requirements. Developing MRO competencies requires essential approvals. Securing EASA Part 145 was a natural progression for AerFin to build on and complement their already existing extensive engine disassembly and storage capabilities. "It was an essential procedure to demonstrate to the market and specifically our preferred airline, lessor and OEM partners that we can deliver a scope of MRO services that are fully aligned with the highly audited quality standards set by the EASA regulation authorities," states James Bennett, Director Sales and Marketing at AerFin.



James Bennett, Director Sales and Marketing, AerFin

As Bennett observes, the market has faced significant engine MRO capacity challenges and, whilst some of this constraint will be eased because of the Covid-19 pandemic, pressures on operators to conserve cash will be significant. "One key area for

cost reduction is more cost-effective maintenance solutions. So, this EASA 145 accreditation is not only a lever for growth but also supports operators' need for flexible, tailored MRO services," he says

As AerFin was building its breadth of services within the MRO sector, it was clear that, in order to support and develop long-term strategic MRO partnerships with airlines, lessors, OEMs and MROs – securing EASA Part 145 approval would be critical to satisfy the quality systems of the business partners who set this as a mandatory approval requirement.

EASA Part 145 is the European standard for the approval of organisations that perform maintenance on aircraft and aircraft components that are registered in EASA member states. The EASA 145 accreditation sets a precedent for quality and safety standards, that must be adhered to carry out MRO activities.



Simon Bayliss, Director of Operations at AerFin



Interviews and assessments are critical elements.
Photo: TRAX

Simon Bayliss, Director of Operations at AerFin explains saying a maintenance organisation exposition document is developed that contains material specifying the scope of work deemed to constitute approval and showing how a 145 approved maintenance organisation intends to comply with EASA Part 145 requirements. He says any requested MRO service that is not currently in their MOE would not be EASA P145 approved – additional MRO service approvals could be added to their MOE by demonstrating competency to EASA by desktop / onsite audit.

Bayliss takes us through audit process and says firstly, they submitted their EASA P145 application to the UK Civil Aviation Authority (CAA), who then allocated AerFin an accredited auditing surveyor to scrutinise technical documentation, quality management systems, their MOE as well as AerFin personnel.



Raja Mohan Ravi, QHSE & ERP Manager, Aero Norway

This was then followed up by an onsite visit by the surveyor, who carried out a full audit of AerFin's 150,000 sq. ft. facility in Bedwas, Cardiff. "The audit consisted of a review of our MOE, an assessment of the processes and procedures that we have implemented at the facility, as well as interviews and assessments with key stakeholders within the business such as the quality manager, the accountable manager as well as the Form 4 holder – who has overall oversight of ensuring that the

required standards are satisfied.

"Once the auditor was satisfied that these requirements have been met and that the business operates in accordance with the required standards set by the EASA regulation authorities, the EASA P145 accreditation was awarded to AerFin," Bayliss tells.

At Aero Norway, they have regulatory approvals to perform overhauls and repairs on engines. "This can be full engines all the way down to the release of piece parts," says Raja Mohan Ravi, QHSE and ERP Manager at Aero Norway. "If we need to add anything new to that capability list, it has to follow the process given by the regulatory body we have approval with. The primary objective of any regulatory authority [and of Aero Norway] is that the aviation industry meets the highest safety standards. Therefore, those standards are crucial to everything we do and everyone in Aero Norway is aware of this."

The last significant approval at Aero Norway was the ANAC Argentina Part 145 - new applicant for foreign repair station approval audit and the company followed pre audit, actual audit and post audit process. "The pre-audit looked at things such as gap analysis in terms of documentation and training requirements relevant to regulations, preparation of necessary documentation and manuals. The post audit was



Peter Hary, Head of Quality Systems and Administration, MTU Maintenance



Approvals can take several months to obtain.
Photo: S7 Technics

on-site over four days where Aero Norway had to demonstrate compliance with regulatory requirements to auditors and review the audit report," Ravi continues.

MTU Maintenance holds 32 authority approvals worldwide as well as an EASA design license for the development of repairs. "Each authority has its own application process for this," indicates Peter Hary, Head of Quality Systems and Administration, MTU Maintenance in Hannover.

Hary says the application form usually requires the signature of the responsible and accountable MRO shop manager. "This form is then sent to the respective authority with any other relevant documents – which again varies according to authority. The authority's own inspector will check the documents and then plan an audit of the MRO shop. Audit duration ranges from two to ten days, depending on specific regulations. After the audit is performed, the inspector will write a report. If everything is compliant with the relevant regulations, the renewed approval certificate is sent to the MRO facility. Some authorities require the certificate to be available and accessible for inspection by the public or the authority."

MTU Maintenance have an internal, Wiki-based system in which they track all their approvals. Hary explains that this system is accessible for all employees and is maintained and updated by the quality department. "Within this system you can see which approvals MTU Maintenance holds, when the approval expires, and which regulations are valid for each authority. These regulations are checked on a frequent basis by those responsible within the quality system department." MTU not only tracks approvals within this system, each user is also able to see current TCDSs (Type Certificate Data Sheets) and ADs (Airworthiness Directives) as issued by the different authorities.

Last year, Vallair were approached to perform maintenance on an Airbus A320 NEO Leap, until then, they were approved for Airbus with CFM56 and V2500 engines. "To be approved to maintain A320 NEO, we had to train

a number of our certifying staff to know the differences between the CEO and NEO aircraft," explains Malcolm Chandler, Head of Commercial and Marketing at Vallair. "For this, we sent staff to a Part 147 training organisation for 10 days to learn the theoretical and practical difference between these aircraft. Once the staff have successfully passed their training, we update the individual's technical folder to add the NEO on their licence Part 66 (CAA approval process). In addition, we identify tools specific to the NEO maintenance."

Once staff and tooling are in place, Chandler says an internal document is used to update the scope of approval. "Quality will audit the proposed new capability, facilities, etc and send this form signed by our quality manager to our CAA to be assessed and approved."

Vallair are a French MRO under EASA regulation in first the first instance and others, such as FAA, second. To be conform with the EASA rules, they have developed an audit programme overseen every two years covering all the scope of the approval and reviewed by the CEO. Chandler: "EASA has to audit us on all our scope to ensure we continue to perform the work in accordance with the EASA rules. Moreover, depending on their CAA, our customer can also audit us before sending us a contract to perform maintenance."

"The capability list must be strictly in accordance with the limitations specified in the approval certificate," comments Margus Keerman, Quality Manager at Magnetic MRO. He says the capability list depends on demand, ability to meet certification requirements and profitability. Therefore, it may change from time to time.

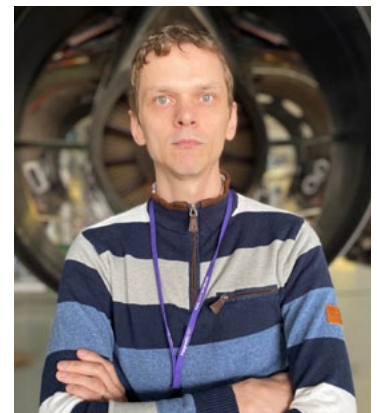
Taavi Ilvest, Quality Inspector at Magnetic MRO adds that approvals limitations and scope of work are directly linked. "Approval limitation is usually more general [in EASA system], and it's described in more detail in MOE [our maintenance organisation manual] under the scope of work. So, all regulations are essential for us."

Magnetic MRO are currently working on obtaining the EN 9110 aviation standard for maintenance and Keerman reports that the process is ongoing but not completed due to travel restrictions for foreign auditors caused by Covid-19. "The certification audit is like a comparison task. The relevant clause in the standard must be covered by the company's procedures and evidence that it is complied with. It means learning the main core of standard, creating the procedures manual, implementing it, teach the personnel and demonstrating to auditors. Sometimes it is quite tricky because if you have many certificates, multiple changes in different procedures need adjustment. In the end, all shortcomings must be remedied."

The last significant certification at Magnetic MRO was to get Chinese Maintenance Organisation Approval (CAAC). Ilvest explains the process: "It started with requesting access to their online application portal (FSOP) and making ourselves familiar with all the requirements (including mandatory regulation training in China). After uploading all the required documentation



Malcolm Chandler, Head of Commercial and Marketing at Vallair



Taavi Ilvest, Quality Inspector at Magnetic MRO

(manuals, different procedures, the scope of work, etc) Chinese CAA carried out an initial check for these and issued an invoice. The last step was the onsite audit and managing related findings. After that, we got the certificate. This process took over a year."

To ensure continued compliance the maintenance organisation have a quality assurance system to monitor compliance with the approved procedures to ensure compliance with regulation (i.e. EASA Part 145) and any additional standards or procedures specified by maintenance organisation itself, adds Keerman. "Internal auditors are keeping an eye on it annually. Continuous improvement lasts all the time and all staff are responsible for compliance."

FL ARI Aircraft Maintenance & Engineering, based at Harbin Taiping International Airport in China, recently had a chance to become the first CAAC approved aircraft disassembly organisation within China. "FL ARI management team and CAAC representatives showed their exceptional professionalism for this significant approval which was audited for the first time. Our efficient disassembly operational processes, warehouse and tool management together with our quality systems were audited and accepted as fully compliant for the disassembly activities which will become important as the long term impact of Covid-19 on the aviation industry is realised," says Donatas Dockus, CEO at FL ARI.

For continued compliance, FL ARI have a robust training management system for all applicable standards. Dockus says the quality division ensures that independent periodical checks are carried out and suggests the improvements to the FL ARI operational and administrative processes for standard compliance, continuous improvement and efficiency.

In Russia, the significant approval for S7 Technics is the EASA approval. The recent EASA intermediate audit was carried out in August last year. Based on S7 Technics' compliance with EASA Part-145 requirements the assigned inspector made a recommendation to EASA to extend the EASA Part-145 approval.

In April, S7 Technics received EASA Part-21 G approval for aircraft cabin carpet production. The aircraft cabin carpets production shop, which is located at S7 Technics base in Novosibirsk, received EASA Part-21 G approval. Previously the aircraft carpet production was under EASA Part-145 approval.

"Fabrication of aircraft cabin carpets under the EASA Part-145 approval has not only certain advantages, but also a number of limitations. Therefore, recently, airlines representatives have increasingly expressed their wishes to obtain new carpets with the certificate EASA Form 1, in order to organise a more rapid replacement" - said Mikhail Golovanov, EASA.21G.0029 - Quality Assurance Manager at S7 Technics back in April.



Donatas Dockus, CEO at FL ARI

In tandem with the development of the MOE, at AerFin they implemented a stringent set of procedures and processes that ensure the service offerings are always aligned with the required standards set by the EASA regulation authorities.



Team participation is crucial in the assessment process.
Photo: Patrick Delapierre - AFI KLM E&M

According to Bayliss, these procedures and processes are regularly audited internally by the AerFin quality department, ensuring that their practices do not slip below minimum EASA regulations, guaranteeing that they are able to deliver a best-in-class MRO service offering. "In addition to this, we have regular external audit visits from EASA, where a designated EASA auditing surveyor will visit our facility and audit our procedures and processes to ensure we are compliant with our approval."

Bayliss says all these stringent processes are documented and structured within the quality management system (QMS), which closely monitors the competency and compliance of operations policies as well as personnel. "This is critical for ensuring that AerFin is able to satisfy EASA standards and thus continuously able to meet customer service levels."

Interestingly, in Australia, the Civil Aviation Safety Authority (CASA) introduced exemptions to help MROs during the Covid-19 crisis by extending certifications, authorisations and permissions to allow MROs to maintain operations and seek new business opportunities.

Ravi from Aero Norway observes that several other regulatory authorities are and have put in place measures to support MROs and he feels consistency across regulatory authorities in a set of approved deviations from regulatory requirements is helpful for MROs in these times.

Dockus from FL ARI concurs saying most authorities have introduced some measures regarding the Covid crisis to support certification, authorisations, internal audit plans and others. "Due to the fact that different authorities control different aviation markets, the wider global approach might be only within a generic point of view. Worldwide aviation organisations are acting with the support of the most affected aviation areas which will affect the MRO's indirectly."

Counting the cost?



Fluctuations in engine material costs are anticipated.
Photo: WinAir

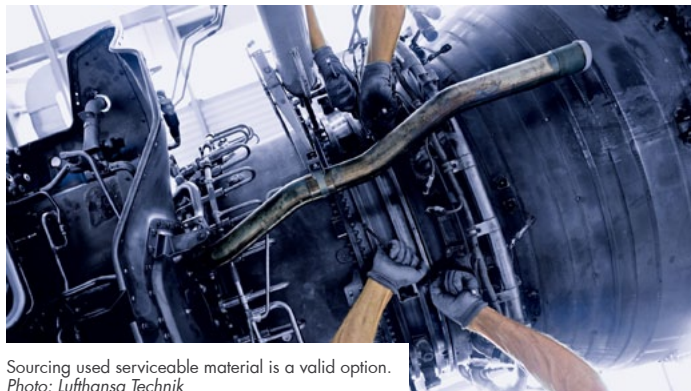
Fluctuations in engine material costs are anticipated in the current environment. **Keith Mwanalushi** looks at the options and solutions.

With the anticipated increase in the availability of 'green-time' engines and used serviceable material (USM) as a result of COVID-19-related aircraft retirements, Roger Ross, President - Airlines and Fleets at StandardAero reckons that the industry will see intensified pricing pressures in the market, especially when compared to the parts supply challenges witnessed in recent years. "That said, StandardAero already has a well-established philosophy of 'repair rather than replace,' meaning that we already minimise our customers' costs with our extensive in-house component repair capabilities. We also have a dedicated in-house engine trading team, which we will continue to utilise to minimise our customers' outlays, where permitted by our OEM license agreements."

It's worth noting that while USM may offer a low 'sticker' price, its usually the lack of warranty coverage associated with new parts or approved repaired parts, thereby risking a higher total cost when the cost of non-quality is considered, Ross feels. "For this reason, StandardAero will remain focused on delivering our customers with reliable quality MRO services, ensuring operational availability, passenger safety and optimised total lifecycle cost."

At MTU Aero Engines, they have been observing the supply chain to monitor any issues in supply, delivery and price fluctuations. As the situation is still evolving, Martin Friis-Petersen, SVP MRO Programmes at MTU Aero Engines admits it is hard to know exactly how this will pan out. "Nonetheless, we of course offer alternatives to customers, such as sourcing used serviceable material or providing creative work scopes to support budget driven MRO decisions. Going forward, we are likely to see an increase in engine retirements and improved access to used material. Such options also help mitigate any supply chain fluctuations."

Michael Grootenboer, Senior Vice President AFI KLM E&M Engines Product says the COVID crisis will see an increased number of engines available for teardown. He says the influx of USM, coupled with a near-term drop-in MRO demand, will result in better USM availability at lower prices. "At AFI KLM E&M we are well positioned to take advantage of this market development with our wide supplier network and our engine teardown joint venture Bonustech Inc, in Miami. This will allow us to offer our top-notch MRO services to our customers at even more attractive prices," he states.



Sourcing used serviceable material is a valid option.
Photo: Lufthansa Technik



There has been a significant fall in material demand.
Photo: AerFin

Over recent months, at AerFin, they have seen a significant fall in material demand, this is expected to slowly recover as aircraft return to service and passenger demand increases, observes Oliver James, AerFin Trading and Leasing Manager. "As we come out of this pandemic asset owners will no doubt be looking for innovative ways of cost saving and reducing engine maintenance events whilst maintaining engine reliability and performance. Assuming there continues to be an industry wide acceptance of USM, there is every possibility that this may lead to further opportunities for lessors and airlines to reduce engine shop visit costs through the supply of lower cost material."

James Bennett, Director, Sales and Marketing adds that the potential acceleration in aircraft retirements will likely cause an influx of USM into the aftermarket. He explains that rules of supply and demand suggest that this will likely drive USM pricing down. "However, this is also assuming a broader acceptance of used serviceable material by end users – a solution that can vary from platform to platform."

"Another element to also consider is how the OEMs will react to the influx of USM – we may potentially see a drop in catalogue list pricing (CLP) on new components, in an effort to maintain market share."

However, all considered, and by all indications, AerFin sees an upsurge in USM demand, creating an opportunity for engine maintenance costs to decrease.

David Rushe, Sales and Marketing Director EMEA at Magellan Aviation Group reminds that there were already supply-chain challenges across the MRO industry prior to the impact of COVID-19. He says a reduction in global MRO demand may give some OEMs time to catch-up and realign any bottlenecks. Conversely, social distancing measures and travel restrictions may put more pressure on manufacturing and component repair processes, pushing up costs.

"With the likelihood of some oversupply in engine parts in the short-term, those engine MROs that are back on the market should be able

to take advantage of cost savings across shop visit material inputs.

"In terms of Magellan's engine lease pool maintenance costs, shop visit turnaround times will be the main issue in the coming six to 12 months as the industry recovers, even for minor worksopes," Rushe indicates.

Alike, on the CFM56 platform, Magnetic MRO expect that in six to 12 months there will be more USM on the market for -5 / -7 engines since several engines are expected to head for teardown and therefore availability of this material will increase. Alexey Ivanov, Executive Sales Director at Magnetic MRO continues: "And this may also decrease the price, and subsequently, the price for the engines repair might decrease due to cheaper material available."

"Moreover, engine shops will be forced to compete severely with the lease market as availability of the spare engines will grow up significantly (therefore, the price will decrease) and a number of potential customers will decide to lease engines instead of repairing their own engines."

According to Neil Russell, Chief Operating Officer at Aero Norway, he feels safe to assume there will be fluctuations in engine material cost but when and by how much is difficult to predict. "Also, this may affect specific parts more than others and different engine types more than others too. Ultimately, we hope this drives more availability of -5B/-7 used material over the next few years at a good price. Obviously, the price and availability of used material makes an impact on the cost of engine maintenance. For the -3 market it's difficult to tell how this will go, perhaps in the next year or two this may be the last peak of -3 overhauls and those hanging on to material, especially new material, may miss out."



Major customers like easyJet have returned says Jones.
All photos: Caerdav

In the hot seat.....

Joachim Jones, Group CEO, Caerdav

AviTrader MRO: What attracted you to this business?

Jones: I have been working in the aviation industry for almost 26 years. I love to fly. I started as a pilot, flying Lear and Citation jets, and from there I was founder and CEO of a regional airline which operated a couple of SaaB 340s – which unfortunately paid the price of the global financial crisis in 2011. At that point I decided to utilise my experience as a consultant, taking several CEO positions at aviation businesses around the world where I was tasked with implementing significant restructuring and turnaround strategies to drive improvement. I have an entrepreneurial spirit; I want to help companies achieve their goals and their potential – which is what eventually led me to Caerdav.

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

Jones: Caerdav is undergoing a significant

group restructuring programme, covering both the ATO and MRO sides of the business. To get the company to where I believe it should be can mean some early starts and late finishes! We have embarked on a complex process, which creates different and exciting challenges every day – but we have the team in place to meet those challenges and it is great to all be working toward the same goal. I like to be heavily involved with the day-to-day running of the business and am the Accountable Manager for the Caerdav MRO and will soon hold that position for the ATO side of the business as well. I really enjoy the extra responsibilities that entails.

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

Jones: Perhaps finding time to sleep! I think the main challenge involves moving the company culture forwards, incorporating a change to management processes that instils a different way of doing things. The plan is to

cohesively bring the two sides of the business together under one umbrella.

AviTrader MRO: Briefly, tell us about the range of MRO services that Caerdav provides.

Jones: We are an independent EASA and FAA approved MRO, with our own modern, four-bay hangar. Our capabilities include line and base maintenance services for the Airbus A320 family, as well as the Boeing 737 CL and NG, 757 and 767 – this is where our expertise lies. We are also set up with full engine change capabilities for these aircraft types, alongside landing gear replacement, avionics work, cabin reconfigurations, and structural modifications and repairs. Our plan is to make Caerdav a centre of excellence for the Boeing 737 and Airbus A320 series. With the growth in the air cargo market the need for MROs specialising in the 737 CL grows with it – and work on this aircraft is something we do very well.

AviTrader MRO: What has been the market response to the name change from Cardiff Aviation to Caerдав?

Jones: The market response has been extremely positive and the rebrand was central to our desire to restructure. In fact, many of our customers have seen for themselves the changes we have already made and fully endorse the plans we have in place moving forward. Major customers like easyJet have returned and we are consistently getting RFQs from old and new customers alike who appreciate the new look of Caerдав.

AviTrader MRO: How has Covid-19 affected the business?

Jones: We are in the middle of a restructuring programme which is designed to revitalise the business, so when faced with a global pandemic that process becomes infinitely more difficult – but not impossible. We have had to focus even harder on what we are aiming to achieve. This has meant re-evaluating this year's financial forecasts, streamlining the business and carefully selecting the right work at the right time. We are being cautious, but we are confident we have the right strategy in place to find the right opportunities and keep the business moving forwards – proven by the fact we have recently taken on two new senior members in our commercial team whose job it is to find those opportunities.

AviTrader MRO: What is the key priority at Caerдав as aircraft operators begin to resume operations?

Jones: For us, it is especially important that we



Caerдав has full engine change capabilities including on the 757.

carefully select the right opportunities to grow the business and therefore put us in a strong position to supply the services required by the market. We constantly monitor the market and analyse the situation, talk to the airlines and work with our customers to offer both what they require and what works for us as a business – for example, this could be supplying temporary storage solutions, or focusing on engine changes or modifications.

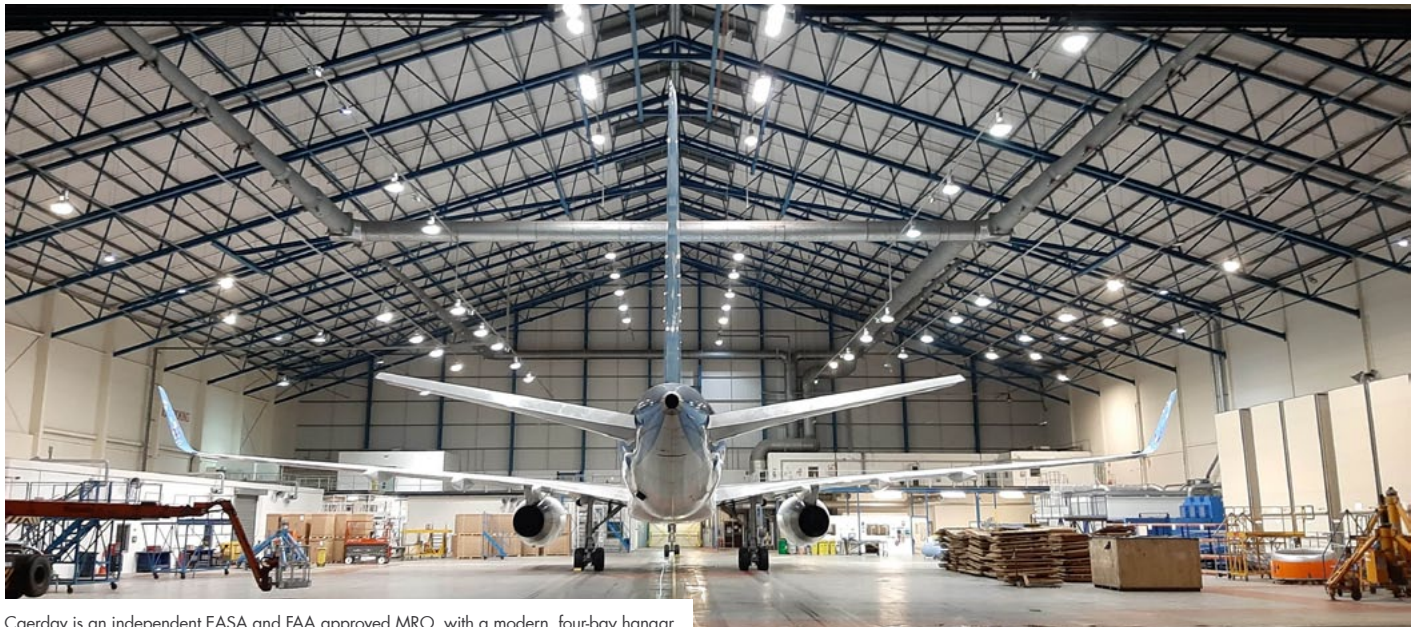
AviTrader MRO: Last year Caerдав announced an MoU with MOBH Group for the development of new training and maintenance facilities. Is this still on track?

Jones: As the agreement was signed before the Coronavirus pandemic, the project is being held temporarily, but it is still very much

in our plans. What we are doing now is focusing on our current ATO, which includes investing in two new full flight simulators – firstly a 737 CL this year and then a 737 NG or MAX to follow in 2021. These will replace our 747-400 sims.

AviTrader MRO: What opportunities in the market do you anticipate with your most recent FAA Part 145 repairs approval?

Jones: We have always held a Part-145 approval, so there has not been any real change there. But we will continue to look closely at the markets, we're very happy to accommodate N-registered aircraft and our commercial team is structuring a plan to grow organically as a business in the next two years, using our expertise to fulfil the right work for the right customers.



Caerдав is an independent EASA and FAA approved MRO, with a modern, four-bay hangar.



Karim Grinate

APOC Aviation has promoted **Karim Grinate** to the position of VP Component Sales. Previously Manager – Sales and Business Development, Grinate has been with APOC for just over a year. His new position recognizes the processes and structures he has put in place to streamline the sales team and his focus on enlarging the customer base across targeted ATA Chapters and global regions. Grinate is responsible not only for the commercial success of the component sales division at APOC Aviation, but also for the stock breakdown and compatibility with customers worldwide.

Klaus Eberhardt will continue to lead the Supervisory Board of MTU Aero Engines AG. This was decided unanimously by the Supervisory Board at its meeting on June 17. Maintaining continuity at the helm of the Supervisory Board is a response to the special challenges presented by the coronavirus crisis. The Supervisory Board has also decided unanimously to raise the previously valid age limit for Supervisory Board members in general to 75. Given a general increase in life expectancy, this step will contribute to being able to secure valuable expertise and experience, especially in MTU's long-term business model.

Embraer has named **Arjan Meijer** as the new President and CEO of Embraer Commercial Aviation, succeeding **John Slattery**. Arjan will report directly to Embraer President and CEO **Francisco Gomes Neto**, and the move will be effective immediately. Arjan has been Chief Commercial Officer of Embraer Commercial Aviation since Jan-

uary 2017. In his role as CCO at the company, he has been responsible for the global Marketing and Sales functions across six different regions, helping the company to achieve 35 airline deals. He joined the company in April 2016 as Vice President of Commercial Aviation for Europe, the Middle East, Africa, and Russia. Prior to joining Embraer, Arjan spent 15 years in various executive roles at the KLM Group. His last two roles were Vice President of Technical Services and Fleet Development at KLM's regional subsidiary KLM Cityhopper and Managing Director at KLM UK Engineering in Norwich. Arjan earned a Master's in Aeronautical Engineering from Delft Technical University in the Netherlands and a Master's in Business Administration from Purdue University in the United States.



Rob Holmes

Advanced surface coating technology company, Hardide Coatings has appointed **Rob Holmes** as VP Aerospace as the company targets strategic growth in the aerospace and defense sectors. Holmes joins from Nasmyth Group where he spent ten years in senior business development positions in the global aerospace industry. Most recently he was Aerospace Development Executive responsible for the long-term development of global aerospace markets, specializing in the U.K., EU, and Asia Pacific. Rob will be responsible for developing business opportunities in the aerospace and defense sectors for Hardide Coatings' range of nanostructured tungsten carbide/tungsten metal matrix composite coatings.



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