

MRO

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Q&A:

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MRO News
from around the world

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latest appointments



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Registration

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Opinion

Please send your comments
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All praises for Singapore

The trade segment of the Singapore Airshow 2020 concluded on an optimistic note with more than two-thirds of its key exhibitors committing to participate in the next event in 2022.

Over the four days, the show witnessed announcements in new areas of development including JTC's signings with aerospace companies to bring in \$500 million worth of new investments that will expand the aerospace ecosystem and supplier networks and ST Engineering's five-year contract to provide nacelle maintenance services to Qantas Airways' Boeing 737-800 and Airbus A330 fleet. Showcase of new products and innovation such as Dassault's Falcon 6x and Air-

bus unveiling its blended wing body technology demonstrator which could potentially provide up to 20% lower fuel consumption.

New concepts and breakthrough ideas to transform the future saw a total of 32 companies from eight countries pitched on topics in digital solutions, artificial intelligence and cybersecurity, automation and smart transport, smart manufacturing and marketplace and sustainability and energy.

Close to 30,000 trade attendees from more than 110 countries convened at Singapore Airshow 2020.

Editor



Photo: Joramco

Contents

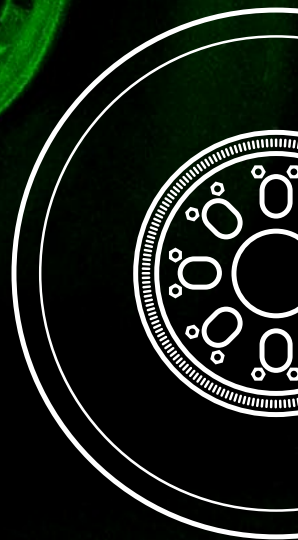
MRO and Production News	4
Finance News	14
Information Technology	18
Other News	19
Cover story: Wheels & brakes	21
Industry Interview: Boris Wolstenholme, Chief Strategy Officer, AJW Group	24
Cargo conversions	26
Industry One on One: Jeff Wilkinson, Chief Executive Officer, Joramco	29
People on the Move	31

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Boeing signs multiple supply chain agreements at the Singapore Airshow
Photo: Boeing

Boeing signs supply chain agreements at Singapore Airshow with multiple airlines and operators

Boeing has signed supply chain agreements at the Singapore Airshow with multiple airlines and operators. The agreements will enable Asia-Pacific carriers to leverage Boeing's global supply chain to streamline maintenance, repair, and operations.

Supply chain services agreements include:

All Nippon Airways, the largest airline in Japan, has expanded an agreement for consumable and expendable services to its entire fleet. **Cathay Pacific**, the home carrier of Hong Kong, renewed a multiyear agreement for consumable and expendable services building on a long-standing partnership for spare parts inventory management. **Evergreen Aviation Technologies Corporation (EGAT)**, an MRO with a long-standing partnership between **EVA Air** and **General Electric**, reached a multiyear Tailored Parts Package agreement. The customized agreement provides comprehensive part coverage from Boeing's network of global distribution centers to support EGAT's maintenance, repair, and overhaul operations to a host of global airlines in its service portfolio. **HAECO**, a leading MRO, has reached an expanded agreement for consumables and expendables parts support to include additional supply chain solutions.

Xiamen Airlines has reached a three-year agreement for a Tailored Parts Package to support its full fleet of Boeing Next Generation 737 and 787 Dreamliner airplanes. **KAEMS** signed an agreement with Boeing for its first integrated inventory management solution for consumables and expend-

ables parts in support of its growing MRO capability.

DAES Group announces new business partnership at Singapore Airshow 2020

DAES Group, a global aerospace solutions provider, has announced a new business partnership with MDS Aero, a supplier of turnkey test solutions for engine and engine components. The agreement was signed on February 12, during a private

meeting at the Singapore Airshow. MDS Aero designs, builds, and upgrades aero engine test facilities all over the world. Leveraging 35 years of industry experience and in-house technical expertise, MDS has been the solution partner of choice for aviation industry leaders such as Rolls-Royce, Pratt & Whitney, GE, Airbus, Air France, Air Canada, Snecma, and more. MDS Aero adds value to its customers by maximizing test operation uptimes, integrating state-of-the-art technology, and project managing the execution of complex projects. In fact, MDS Aero is currently constructing the largest aviation engine test facility for Rolls-Royce, which is scheduled for completion this year.

LHT and Vistara sign 12-year component support agreement

TATA SIA Airlines (Vistara) and Lufthansa Technik have signed a twelve-year component support agreement for the Boeing 787 fleet to be operated by Vistara. The Indian carrier has six firm orders and four options for this aircraft type. The agreement covers a wide range of aircraft components for the Boeing 787. Service provision will start as early as the first quarter of 2020. Lufthansa Technik already supports the Indian airline with single component services, ad hoc composites repairs (Airframe Related Components, ARC®), consumables supply and AOG (Aircraft on Ground) support for the carrier's Airbus A320 and Boeing 737 fleets



Vistara Boeing 787-9 aircraft
Photo: LHT



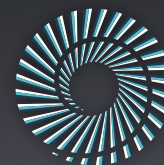
Boston Med Flight has signed HCare Smart support contract with Airbus Helicopters
Photo: Airbus Helicopters

Airbus Helicopters adds 250 more helicopters to global support contracts

Airbus Helicopters added 250 helicopters to HCare Smart and Infinite contracts in 2019, increasing to 2,250 the number of aircraft now covered by a global HCare material management contract. This means 19% of Airbus Helicopters' worldwide fleet is now covered by HCare. New aircraft added at Heli-Expo 2020, all with HCare Smart, were from Papillon (21 H130s) and Heliportugal (9 H125s). Papillon's entire fleet of H130s will now be covered by HCare. Also at the show, DRF Luftrettung signed an eight-year extension of HCare Smart for its entire fleet of nearly 60 helicopters. Other customers added in 2019 include PHI Health (H125s), Boston Med Flight (HCare Smart), Superior Helicopters (HCare Infinite), and STARS air ambulance (HCare Smart), among others. In North America alone, 78 helicopters joined HCare last year, and of the 58 H225s repurposed in 2019, more than 75% of those already in operation are covered by HCare.

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Jazeera Airways signs US\$1.3 billion LEAP-1A engine services agreement

Jazeera Airways has signed a long-term Rate Per Flight Hour (RPFH) agreement with CFM International to support the LEAP-1A engines that power the airline's fleet of 20 Airbus A320neo aircraft. The agreement, which is valued at approximately US\$1.3 billion U.S. at list price, also covers five spare engines. RPFH agreements are part of CFM's portfolio of flexible engine service support packages. Under the terms of the agreement, CFM Services guarantees maintenance costs for Jazeera's LEAP-1A engines on a dollar per engine-flight-hour basis. Jazeera Airways became the first LEAP-1A-powered A320neo operator in the Middle East in May 2018 and currently operates four A320neo aircraft. The fleet has since logged more than 6,000 flight hours. The airline also operates nine CFM56-5B-powered A320ceo aircraft.

Jazeera Airways
Photo: AirTeamImages

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Honeywell is developing a line of lighter-weight, electro-mechanical flight controls to bring agility and safety to a new breed of urban air vehicles
Photo: Honeywell

Honeywell's new line of actuation systems to bring safety and maneuverability to Urban Air Mobility vehicles

Honeywell is developing a line of lighter-weight, electro-mechanical flight controls to bring agility and safety to a new breed of urban air vehicles that can take off and land vertically. These actuators use small amounts of electricity to move control surfaces on the aircraft and are specially designed to withstand the vibrations and power requirements of urban air mobility vehicles, many of which will use multiple propellers or fans to stay aloft. The Honeywell actuators can accept hundreds of tiny adjustments and commands per second from fly-by-wire computers, enabling precise navigation and allowing aircraft designers to challenge the limits of aerodynamics. "Nearly 200 companies worldwide are developing urban air mobility vehicles, which are very different from anything that's flown before and will navigate in pretty challenging urban environments," said Becky Sidelinger, President, Mechanical Systems & Components business unit, Honeywell. "These vehicles will have a significant number of takeoffs and landings in lower-altitude urban environments, where they may encounter things like unusual winds and updrafts from thermals. When navigating these challenges in a busy city, precision control is key." The Honeywell actuators use electricity to move control surfaces, eliminating the need for heavy hydraulics, cables or pushrods typically found in larger, more traditional models of aircraft. They are small but mighty — able to withstand harsh weather and the vibrations caused by multiple rotors operating together.

ST Engineering's Aerospace arm signs new contracts with T'way Air and CFM International

ST Engineering's Aerospace arm has signed an agreement with CFM International* (CFM)

to provide MRO support for its LEAP-1B engine. Through the agreement, ST Engineering will have the right to use technical data to perform MRO work on the LEAP-1B engine, the exclusive powerplant for the Boeing 737 MAX. ST Engineering has a longstanding relationship with CFM as a licensed service center for its CFM56-5B and -7B engines. The latest agreement builds on that relationship, expanding the group's suite of MRO offerings in CFM engines to better support the global fleet. MRO infrastructure and capabilities for LEAP-1B engines, estimated to be ready by the end of 2020, will be set up at the group's aerospace facility in Singapore.

Furthermore, ST Engineering's Aerospace arm, has secured two multi-year MRO contracts from South Korean airline T'way Air which will see the extension of an ongoing partnership in component and engine MRO between the two companies. Both contracts will take effect from March 2020. Under the component contract, ST Engineering will continue to provide comprehensive component Maintenance-By-the-Hour (MBHTM) services to the airline's entire fleet of 28 Boeing 737-800. The group will also support the 25 Boeing 737Max aircraft

that the airline plans to add to its growing fleet. Under the engine contract, ST Engineering will continue to provide an integrated suite of CFM56-7B engine MRO solutions that include off-wing maintenance support, on-wing services, engine health monitoring and technical support to the airline's Boeing 737-800 fleet.

Philippine Airlines selects Airinmar's new aircraft warranty and value engineering services

AAR) subsidiary Airinmar, the leading independent global provider of component repair management and new aircraft warranty solutions, has signed a three-year support services agreement with flag carrier Philippine Airlines (PAL). Working in conjunction with PAL's Aircraft Material Management team, Airinmar will provide a full suite of support services covering both new aircraft warranty and value engineering. The services will supplement PAL's current activities and focus on maximizing the recovery of PAL's new aircraft warranty entitlements and reducing the cost of component repair.

MTU Maintenance and BA CityFlyer extend CF34 contract

MTU Maintenance and long-term partner BA CityFlyer have extended their exclusive CF34-8E and -10E MRO contract to year end 2023. BA CityFlyer is a wholly owned subsidiary of British Airways. It flies 24 E190 and E170 aircraft from London City airport to destinations across the United Kingdom and Europe. When business destinations are reduced on weekends from London city, the airline serves leisure routes from other UK airports such as London Stansted and Manchester to European destinations such as Greece, Portugal and Spain.



BA CityFlyer's Embraer aircraft
Photo: MTU



GKN Fokker Elmo to supply electrical wiring interconnection systems (EWIS) for the new Boeing 777X family
Photo: Fokker

GKN Aerospace signs EWIS contract for Boeing 777X wiring

GKN Fokker Elmo has signed a contract to supply electrical wiring interconnection systems (EWIS) for the new Boeing 777X family. Production will start at the end of the first quarter 2020. The 777X EWIS will be delivered out of a number of strategic global locations, such as China, the Netherlands, and the new state-of-the-art wiring facility in Pune, India. GKN Fokker Elmo has supplied EWIS to Boeing for more than a decade for the 777, 737 and P-8A. The new contract reaffirms GKN Fokker Elmo's position as a strategic EWIS supplier to Boeing.

ST Engineering's Aerospace arm secures five-year nacelle maintenance contract from Qantas

ST Engineering's Aerospace arm has secured a five-year nacelle maintenance contract from Qantas Airways. Under the agreement, ST Engineering will provide nacelle maintenance services starting from 2020 to the airline's Boeing 737-800 and Airbus A330 fleet. ST Engineering's solutions for aircraft engine nacelles cover both aftermarket services and original equipment manufacturing, which are supported by a network of distribution centers, satellite stores and repair shops across the globe. In Stockholm, the Group has a Nacelle MRO facility that covers a wide range of engine nacelles including the latest Boeing 787 Trent 1000 and GenX engine nacelles. In Middle River, U.S., the Group has a facility specializing in the design and production of thrust reversers, engine na-

celle components and other aerostructures. The Middle River facility will, starting in early 2020, have the MRO capabilities to provide nacelle component maintenance services. Through such new capability set-up, customers will get to enjoy integrated solutions in both manufacturing and aftermarket care across a range of nacelle systems under one roof.

Japan Airlines signs GENx service agreement

Japan Airlines (JAL) has signed a nine-year TrueChoice™ flight hour agreement that covers the airline's GENx-1B engines on its Boeing 787 international fleet. The agreement is valued at

US\$1.3 billion over the life of the contract. JAL and GE have a longstanding relationship that began with the CF6 engine. Today, JAL operates an extensive fleet of aircraft powered by GE's CF6, CF34, GE90, GENx and CFM International's CFM56 engines.

Collins Aerospace to invest US\$225 million in landing systems facility expansions

Collins Aerospace Systems plans to open a new landing systems facility in Fort Worth, Texas, and to expand its carbon brake manufacturing facility in Spokane, Washington. An expansion of the company's carbon brake manufacturing facility in Pueblo, Colorado, is already underway. The announcement reflects the growth of the company's landing systems business in recent years, driven by increasing demand for its wheels, brakes and landing gear from commercial, military and business aviation customers. Key to the company's success has been its ability to provide customers with innovative solutions to improve operational performance. For example, Collins Aerospace's patented DURACARB® carbon friction material delivers an average 35% longer brake life over competing carbon materials, enabling airlines to decrease maintenance time and realize additional cost savings. At its new 110,000-ft² facility in Fort Worth, Collins Aerospace will perform wheel & brake maintenance, repair and overhaul (MRO) operations as well as landing gear assembly. The addition of wheel & brake MRO capacity in Fort Worth will put the company closer to key airline customers in the region. The new facility will also combine the company's current Fort Worth landing gear operations, while increasing shop floor space 30% over its existing landing gear facility. The company expects to create 40 new jobs at the site.



Fort Worth wheel and brake MRO shop floor
Photo: Collins Aerospace



CAVU employees presenting FAA
Photo: CAVU

CAVU Aerospace receives FAA approval for CAVU Component Repair in Mesa, Arizona

CAVU Aerospace has received FAA Air Agency Certificate, SR6R638D, for its CAVU Component Repair station based in Mesa, Arizona. With this approval, CAVU Component Repair will have the capability to repair airframe components, accessories and landing gear in accordance with its operation specifications. CAVU's 80,000 ft² facility is equipped with state-of-the-art tooling and machinery. It will offer quality repair on flight controls, flap tracks, flap carriages, and landing gear for most Boeing, Airbus, Bombardier and Embraer aircraft types. Its repair capabilities will be expanded in the future.

Honeywell and Leonardo upgrade AW139 with navigation system powered by synthetic vision

Honeywell is providing Leonardo's helicopter division with a significant cockpit upgrade — Honeywell's innovative Primus Epic 2.0 — for its AW139 helicopters. Primus Epic 2.0 will deliver innovative and intuitive features that provide better maps, improved situational awareness at night and in marginal weather, and easier access through wireless connectivity, improving safety and saving time. For the first time in the industry, it is track-based, meaning navigation follows the actual path of the helicopter and accounts for wind and other environmental factors. "Technology innovations are crucial to reducing pilot workload and making flights safer for crew and passengers," said Mike Ingram, Vice President and General Manager, Cockpit Systems, Honeywell Aerospace. "With the Epic 2.0 Phase 8 upgrade, AW139 pilots will not only reduce the time and cost of some operations, especially those in weather and around challenging terrain, they will also experience some of the best safety features available anywhere in the helicopter market."

AEI receives order for two MD-83SF freighter conversions for Aeronaves TSM

Aeronautical Engineers, Inc. (AEI) has signed a contract to provide Saltillo, Mexico-based Aeronaves T.S.M. S.A. de C.V. (TSM) with two additional AEI MD-83SF freighter conversions. The first MD-83 (MSN 49945) will commence modification in March 2020, followed by the second MD-83 modification beginning in November 2020. Touch labor for both modifications will be performed by Commercial Jet's Miami, Florida facility, which is an authorized AEI Conversion Center. These two additional MD-83SF freighters will represent the 13th and 14th AEI MD-80SF series freighters in the TSM fleet. TSM currently operates 11 AEI MD-80SF series freighters and is AEI's largest operator of the platform. The 12th conversion commenced modification at the end of November 2019 and is scheduled to be re-delivered by the end of March of this year.

StandardAero completes 3,000th GE CF34 engine MRO workscope

StandardAero has completed its 3,000th workscope on the GE Aviation CF34 turbofan engine, which is widely used on regional jet airliners around the world. StandardAero was first appointed as a GE Aviation Authorized Service Provider (ASP) for the CF34-3 and CF34-8 in 2001. The milestone 3,000th engine workscope shipped was a CF34-8C5B1 powering a CRJ700 regional jet operated by SkyWest Airlines. SkyWest, headquartered in St. George, Utah, is a longstanding customer of StandardAero, which has been supporting the airline's

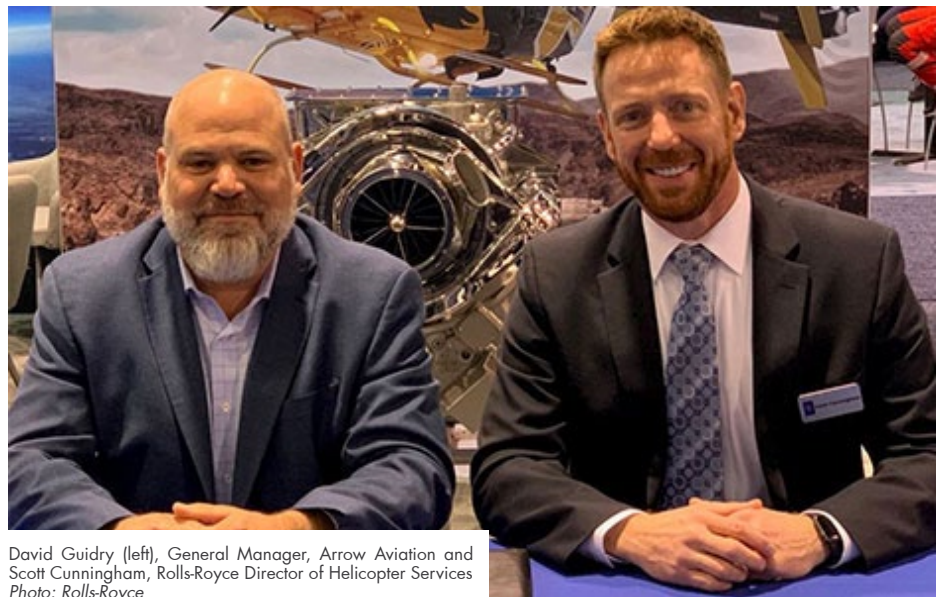
CF34-3 and -8 engine fleet since 2004.

Panasonic Avionics signs A330-800neo IFE deal with Kuwait Airways

Panasonic Avionics (Panasonic) will be providing inflight entertainment (IFE) for Kuwait Airways' new fleet of eight Airbus A330-800neo aircraft. Kuwait Airways will become the first airline to operate the A330-800neo aircraft, starting in the second quarter of 2020 when it joins the airline's existing fleet of Airbus A320 and Boeing 777-300ER aircraft, which are already equipped with Panasonic's X series IFE experience. With Panasonic's full HD touch screens, touch video handsets, electronic device charging facilities, both universal and USB charging and more, together with comfortable seats and space, both business- and economy-class passengers will have a pleasant experience on-board Kuwait Airways.

Rolls-Royce appoints Arrow Aviation as latest authorized maintenance repair overhaul center

Rolls-Royce has appointed Arrow Aviation as the newest FIRST network Authorized Maintenance Repair & Overhaul Center (AMROC). Headquartered in Broussard, Louisiana, Arrow Aviation will provide certified MRO services for M250 and RR300 engine customers. Previously, as a Rolls-Royce M250 Authorized Maintenance Center, Arrow Aviation provided comprehensive in-house component repair reworks capabilities to customers worldwide. As a new AMROC member, the team will add overhaul capabilities to its portfolio of certified services.



David Guidry (left), General Manager, Arrow Aviation and Scott Cunningham, Rolls-Royce Director of Helicopter Services
Photo: Rolls-Royce



SWISS A340 Business Class
Photo: SWISS

SWISS concludes cabin refurbishment on Airbus A340 fleet

Swiss International Air Lines (SWISS) has concluded the cabin refurbishment program for its Airbus A340 aircraft fleet. All five fleet members have now been provided with a totally new cabin and a new inflight entertainment system. As a result, SWISS now offers its passengers internet connectivity on board throughout its long-haul fleet. The airline has newly equipped the cabins of its five Airbus A340 aircraft with First, Business and Economy Class seats, which already feature on its Boeing 777s, together with a new inflight entertainment system. "With the completion of our Airbus A340 cabin refurbishment program we are further underlining our quality commitment, and now offer all our customers the same premium air travel experience, including inflight internet connectivity, on all our long-haul flights," says SWISS Chief Commercial Officer Tamur Goudarzi Pour. SWISS operates its Airbus A340s on services between Zurich and Boston, Johannesburg and Shanghai. The A340 will also be deployed on SWISS' new Zurich-Osaka (Japan) route, starting March 1.

Willis Lease Finance and key industry partners launch MRO Blockchain Alliance

Key industry partners have come together to launch the MRO Blockchain Alliance, the air transport sector's first industry-wide investigation into the use of blockchain to trace, track and record aircraft parts. The new alliance is made up of leading organizations covering every aspect of the commercial aviation maintenance, repair and overhaul (MRO) chain, from parts manufacturing and repairs to logistics and smart contracts. The alliance members so far include Bolloré Logistics, Cathay Pacific, FLYdocs, HAECO Group, Ramco Systems, SAFRAN, SITA

and Willis Lease Finance Corporation, all supported by Clyde & Co. "In order to build a valuable product utilizing blockchain technology, we will need the industry leaders, represented in this alliance, to lend their respective expertise and to build upon the work already completed by Willis Lease Finance Corporation and FLYdocs in this field," explained Austin Willis, Senior Vice President, Business Development, Willis Lease Finance Corporation. In the coming months, the alliance will launch a proof of concept to explore how it can use blockchain to digitally track and record the movement and maintenance history of parts across a wide number of players. These include airlines, lessors, original equipment manufacturers (OEMs), logistics suppliers and maintenance providers. The MRO industry processes 25 billion parts every year, while adding three billion new parts each year. There are 20,000 suppliers, covering 144,000 flights every day for an overall industry market representing around \$100 billion per year. The alliance will spend the next six months in a continued planning phase, with the aim of going live with the first proof of concept in the third

quarter of 2020.

Airbus expands European A321 production capacity to now include Toulouse facility

With production of the wide-body A380 jet coming to a close in the near future and just five remaining aircraft due for delivery, Airbus has turned its attention to expanding production facilities for the increasingly popular A321 Family narrow-body jet. The European planemaker has revealed plans to convert its Toulouse A380 line into a 'digitally-enabled' production line for the more popular A321 range of aircraft. At the present moment Airbus produces A321s at both Hamburg, Germany and Mobile, Alabama, USA. The A320neo Family is the world's best-selling single aisle with over 7100 aircraft sold to over 110 customers. Within this Family, the A321XLR is the latest evolutionary step which has been developed to meet market needs for even more range and payload, creating more value for the airlines. From 2023, it will deliver an unprecedented Xtra Long Range of up to 4,700nm and a 30% lower fuel burn per seat compared with previous-generation competitor aircraft. By mid-2022 the current A380 Lagardère facility in Toulouse will accommodate a digitally-enabled A321 line as a step to modernize the A320 production system in Toulouse. The new facilities will provide more flexibility for A321 production, while keeping the overall single aisle industrial capacity in Toulouse flat. "We are enjoying an unprecedented high demand for our winning A320neo Family and especially its A321 Long Range (LR) and Xtra Long Range (XLR) derivatives," said Michael Schoellhorn, Airbus Chief Operating Officer. "In order to optimize the industrial flow, we have decided to increase our global A321 production capacity and flexibility as well as to establish a next-generation Final Assembly Line in Toulouse."



Airbus A321XLR
Photo: Airbus

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Aventure Aviation acquires two Bombardier CRJ200 airframes for teardown
Photo: Aventure

Aventure acquires two CRJ200s for teardown

Aventure Aviation has acquired two Bombardier CRJ200 airframes (MSN 7344 and MSN 7397) for teardown from Beatech Power Systems. The dismantling is currently underway in Kingman, Arizona, USA. "This purchase continues Aventure's strategic support for our CRJ200 customers," said Aventure Vice President, Talha Faruqi. "This workhorse aircraft continues to be a key part of the U.S. legacy airlines' network, as a substantial number of CRJ200 flights are still operated through their feeders," he added. All harvested parts will be inspected on-site and shipped to Aventure's main facilities in Peachtree City, Georgia, U.S.A., located near Atlanta's Hartsfield-Jackson International Airport.

WeatherTech becomes launch customer for Advanced Autopilot System for H125/AS350

StandardAero and Thales have announced WeatherTech as the launch customer for their advanced 4-axis Compact Autopilot System for the Airbus Helicopters H125/AS350 platform. Derived from certified transport category solutions, the Lightweight Compact Autopilot brings advanced, state-of-the-art 4-axis capability, performance and enhanced levels of safety to the light helicopter market, while eliminating the need for a traditional dedicated flight control computer. David MacNeil, Founder and CEO of the well-known automotive accessories company WeatherTech, has decided once again to confer his aircraft upgrades to StandardAero by selecting Thales Compact autopilot for his fleet. "I have been pleased with the support received from StandardAero in modifying our H125 helicopters, and as we look to make additional safety and avionics upgrades to enhance these machines, the decision to include the Thales unique Compact Autopilot technology was an easy one to make," said MacNeil.

Pattonair's Zero-Lead-Time Agile Vending solution deployed for UMW Aerospace

Aerospace and defense supply chain provider, Pattonair, has successfully deployed its Zero-Lead-Time Agile Vending solution for UMW Aerospace at the Malaysian aerospace engine component manufacturer's site at Serendah, Selangor, which produces fan cases for the Rolls-Royce Trent 1000 engine. Agile Vending is an innovative Zero-Lead-Time product developed by Pattonair, building on its expertise in supplying C-class parts, to optimize efficiency and reduce operational disruption and downtime. Pattonair has a strategic relationship with UMW Aerospace under a five-year agreement signed in 2016 for supply chain services. The introduction of Agile Vending is part of a key service development focusing on innovation and technology for site-based inventory. Agile Vending can be customized to each user's requirement with optional levels of automation. The UMW system is connected via an Intelligent Inventory Management System to provide real-time inventory allocation and replenishment.

TP Aerospace Technics moves into new facility in Orlando

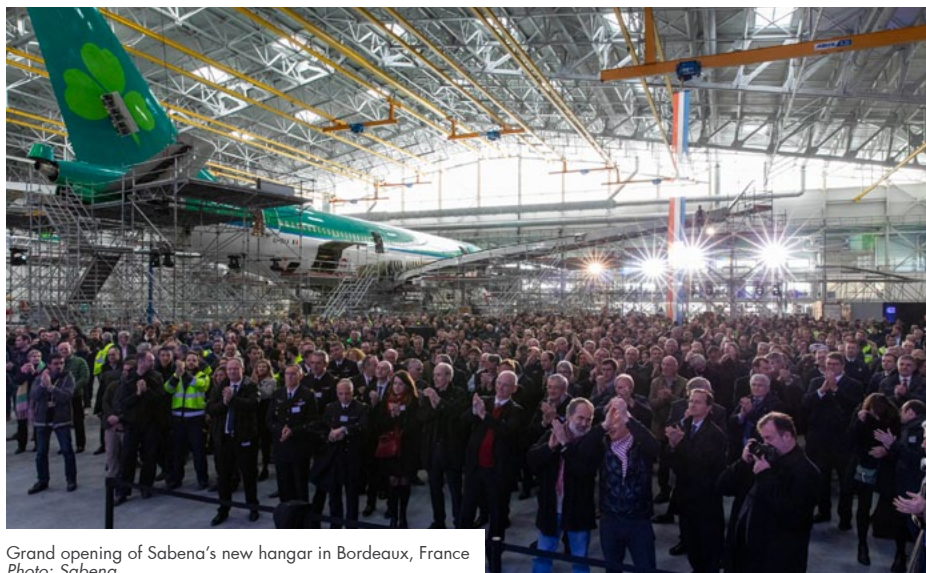
During the end of 2019, TP Aerospace moved into a brand-new facility of MRO services and warehousing in Orlando, Florida. The new 60,000 ft² facility is conveniently located only six miles from Orlando International Airport and like all TP Aerospace MRO workshops, it has been installed with new machinery specific to repairing and overhauling airlines wheels and brakes. The facility is modern with an open layout for easy configurability to meet ever-changing customer demands. The facility received approval to operate from the city of Orlando in December 2019 while finalizing the driveway construction and landscaping are still underway. After receiving final approvals from the FAA, the facility is now officially open for business.

ST Engineering secures more than SG\$1.5 billion of new contracts in fourth-quarter 2019

Singapore Technologies Engineering (ST Engineering), a global technology, defense and engineering group has released that for the fourth quarter of 2019, its business sectors secured more than SG\$1.5 billion of new contracts, bringing the full year 2019 contract value to SG\$7 billion. Including the contract for one unit of Polar Security Cutter, the Group's total announced contract value for 2019 was about SG\$8 billion. About SG\$1.1 billion of new contracts were secured by the Group's Aerospace sector, across its spectrum of aviation manufacturing and MRO service businesses including nacelle component, floor panel manufacturing, as well as airframe and engine maintenance services. This brings its total contract wins in 2019 to about SG\$4.2 billion, compared to SG\$2.1 billion the year before. New MRO contracts included heavy maintenance service for a line of Boeing 757s for an America airline from the second half of 2020; transition checks for a freight operator's MD-11s; and landing gear overhaul service for Japanese domestic airline, Solaseed Air's Boeing 737-800 fleet over a four-year period. The MRO contracts also covered a number of maintenance-by-the-hour (MBHTM) agreements, including the 15-year engine MBHTM program to support Japan Transocean Air's Boeing 737NG fleet, as announced in November 2019. Another SG\$449 million were secured by the Electronics sector for products and solutions in smart mobility, satellite communications (satcom), Internet of Things (IoT), cybersecurity, public safety and security, and defense. This brings its total contract wins in 2019 to about SG\$2.8 billion, compared to about SG\$2.2 billion the year before. US\$1.00 = SG\$1.36 at time of publication.)

Spirit AeroSystems reaches 737 MAX production agreement with Boeing

Spirit AeroSystems has reached an agreement with Boeing relating to the 737 MAX production rate. Under the agreement, Spirit will restart production slowly, ramping up deliveries throughout the year to reach a total of 216 MAX shipsets delivered to Boeing in 2020. Spirit does not expect to achieve a production rate of 52 shipsets per month until late 2022. The parties are continuing to negotiate other terms. The rate agreement is based on several assumptions including Boeing's expected production rate and the successful return of the 737 MAX to service. As previously disclosed, the 737 MAX contractual agreement is a requirement contract between Boeing and Spirit and the rate may change at any time.



Grand opening of Sabena's new hangar in Bordeaux, France
Photo: Sabena

Sabena Technics opens new maintenance hangar and confirms strategy

Sabena technics, a French independent player in the aeronautical maintenance and modifications (MRO) sector, opened its brand-new hangar in Bordeaux, France, on January 21. Confident in its model in the face of the increase in the European fleet, Sabena technics has decided to invest €25 million (US\$27.75million) in the 10,000 m² facility, offering more capacity to its civil and military customers. "The rapid evolution of the markets in which we operate require constant adaptation of our capabilities and know-how. Aware of these developments, we decided to invest in order to offer our European customers more availability with this new hangar capable of accommodating, as part of maintenance or modifications, large aircraft types such as [the] A350-1000, B777-9X or up to six A320 aircraft simultaneously", says Philippe Rochet, CEO of Sabena technics. To support its growth, Sabena technics is also strengthening its recruitment strategy in order to welcome more than 250 new talents each year.

AJW appoints TTC as sole sales representative in Japan

AJW Group is expanding its presence in the Japanese aviation market with the appointment of Toyota Tsusho Corporation (TTC) as its sole sales representative. This partnership will enable AJW Group to expand and increase its capacity to support Japanese customers. TTC will act as a partner to supply aircraft components, support contracted services, including PBH, engine services, and deliver maintenance, repair and overhaul (MRO) related activities in Japan. This partnership is also aligned with

AJW Technique's growth strategy and bolsters the Group's growing presence in the Japanese aviation market. AJW Technique was the first independent component MRO to achieve Japan Civil Aviation Bureau (JCAB) approval under the Bilateral Aviation Safety Agreement (BASA) between Transport Canada (TCCA) and JCAB. This was awarded on January 24, 2019 and has made AJW Technique the best fit for the Japanese MRO market in compliance with JCAB regulations. This partnership will enable AJW and TTC to establish a new global MRO network hub whilst supporting the expansion of the Japanese aviation market. It allows AJW to leverage TTC's global network and logistics know-how to expand its presence in Japan.

AeroControlex names AAR exclusive global distributor for APU lube pump products

AAR has signed a multiyear agreement with AeroControlex, under which AAR will be exclusively stocking and selling auxiliary power unit (APU) lube pumps and all related piece-part components worldwide. "This is a meaningful growth opportunity for our business serving as a value-added extension of an original equipment manufacturer," said Darren Spiegel, AAR Vice President and General Manager of OEM Solutions – Commercial.

HAECO ITM extends inventory technical management support to NokScoot's Boeing 777 fleet

HAECO ITM, a member of the HAECO Group, has reached an agreement with NokScoot Airlines (NokScoot) to provide inventory technical

management support for the company's six Boeing 777 aircraft. The scope of the agreement includes access to HAECO ITM's component pool, component exchange, repair management, engineering and AOG support in accordance with its guaranteed delivery time and service level. NokScoot will benefit from a tailored inventory management program, allowing it to focus on its operations, thanks to HAECO ITM's commitment to providing customized and cost-effective solutions.

CDB Aviation and Atitech agree on business relationship

Full-service lessor CDB Aviation has agreed to work with MRO provider Atitech, located in Napoli Italy, in developing a mutually beneficial business relationship, that will begin with maintenance check work to be scheduled on two Airbus A330-300's at Atitech's MRO facility in Naples. CDB Aviation offers a wide array of valuable services to airlines, from traditional operating leases, to fleet renewals, to structured financings.

Liebherr Aerospace Brasil signs contract with PTI Technologies

Liebherr Aerospace Brasil, Guaratinguetá (Brazil), has entered into a new partnership with PTI Technologies, based in Oxnard, California (USA) and has signed a contract to become the supplier of hydraulic manifolds for Embraer's latest aircraft. Liebherr Aerospace Brasil welcomed several PTI senior leaders to its facility in Guaratinguetá (Brazil) in the fall of 2019 for the celebration of the first strategic collaboration between the two companies. PTI will begin placing orders with Liebherr for three different kinds of manifolds to support the Embraer E2 during the first quarter of 2020.

U.S. Federal Aviation Administration certifies update to Garmin G5000 avionics suite

Bombardier has released that the U.S. Federal Aviation Administration (FAA) has certified the latest update to the Garmin G5000 avionics suite aboard Learjet aircraft. The upgrade will be incorporated on new Learjet aircraft deliveries. In a few months' time, the new Garmin G5000 avionics suite will also be a standard feature on Bombardier's newest Learjet, the Learjet 75 Liberty, which is expected to enter service in mid-2020. A retrofit for in-service Learjet 70 and Learjet 75 aircraft will be available in early 2020.

Airbus posts full-year 2019 net loss of €-1,362 million

Airbus' net commercial aircraft orders increased to 768 aircraft (2018: 747 aircraft), including 32 A350 XWBs, 89 A330s and 63 A220s. At the end of 2019, the order backlog reached 7,482 commercial aircraft. Airbus Helicopters achieved a book-to-bill ratio by value above 1 in a difficult market, recording 310 net orders in the year (2018: 381 units). This included 25 helicopters from the Super Puma family, 23 NH90s and 10 H160s. Airbus Defence and Space's order intake by value of € 8.5 billion was supported by A400M services contracts and key contract wins in Space Systems. Consolidated order intake in 2019 increased to €81.2 billion (2018: €55.5 billion) with the consolidated order book valued at €471 billion on 31 December 2019 (end December 2018: €460 billion). Consolidated revenues increased to €70.5 billion (2018: €63.7 billion), mainly driven by the higher commercial aircraft deliveries and a favorable mix at Airbus, and to a lesser extent the favorable exchange rate development. A record 863 commercial aircraft were delivered (2018: 800 aircraft), comprising 48 A220s, 642 A320 Family, 53 A330s, 112 A350s and eight A380s. Airbus Helicopters recorded stable revenues supported by growth in services, which offset lower deliveries of 332 rotorcraft (2018: 356 units). Revenues at Airbus Defence and Space were broadly stable compared to the previous year. Consolidated EBIT Adjusted increased to €6,946 mil-

lion (2018: €5,834 million), mainly reflecting the operational performance at Airbus, partially offset by Airbus Defence and Space's performance and additional ramp-up costs. Airbus' EBIT Adjusted increased by 32% to €6,358 million (2018: €4,808 million), largely driven by the A320 ramp-up and NEO premium, together with good progress on the A350. Consolidated EBIT (reported) was €1,339 million (2018: €5,048 million), including Adjustments totaling a net €-5,607 million. These Adjustments comprised €-3,598 million related to the penalties; €-1,212 million related to the A400M charge; €-221 million related to the suspension of defense export licenses to Saudi Arabia by the German government, now prolonged to March 2020; €-202 million related to A380 program cost; €-170 million related to the dollar pre-delivery payment mismatch and balance sheet revaluation; €-103 million related to Premium AEROTEC's restructuring plan launched to improve its competitiveness; €-101 million of other costs, including compliance costs partially offset by positive capital gains from the Alestis Aerospace and PFW Aerospace divestments. Consolidated reported loss per share of €-1.75 (2018 earnings per share: €3.94) includes a negative impact from the financial result, mainly driven by the revaluation of financial instruments. The financial result was €-275 million (2018: €-763 million). The consolidated net loss was €-1,362 million (2018 net income: € 3,054 million). (€1.00 = US\$1.08 at time of publication.)



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AW169 helicopter

Photo: Leonardo

Helicopter lessor LCI seals new partnerships with two financial institutions

Helicopter lessor LCI, the aviation division of the Libra Group, has sealed new partnerships with two leading financial institutions as it continues to grow its fleet. The lessor has just taken delivery of a Leonardo AW169 helicopter with financing arranged from new partner, Investec. The state-of-the-art aircraft is being placed with a leading European provider of B2B helicopter services on a long-term lease. LCI has also concluded an asset-backed financing arrangement for one of its fleet of Leonardo AW189 helicopters in a transaction with new financial partner Grupo Santander for an aircraft valued at over US\$15 million. The aircraft is currently on a long-term lease to a European operator. This start to the new decade follows 2019 in which LCI concluded over US\$400 million of financing and re-financing arrangements. LCI's fleet now comprises of approximately US\$1 billion of assets in service, on order and under management, focused on the latest technology medium and super medium helicopters manufactured by leading helicopter OEMs including Leonardo, Airbus and Sikorsky.

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Héroux-Devtek reports fiscal 2020 third-quarter financial results

Héroux-Devtek has reported that consolidated sales grew 8.8% to CA\$157.3 million, up from CA\$144.5 million last year, including a 1.4% organic growth and a contribution of CA\$10.8 million by the Corporation's recent acquisitions. Commercial sales grew 11.8% from CA\$65.5 million to CA\$73.2 million, while defense sales were up 6.3%, from CA\$79.0 million to CA\$84.1 million. Operating income increased to CA\$13.5 million, or 8.6% of sales, up from CA\$11.9 million, or 8.2% of sales last year. Adjusted EBITDA, which excludes non-recurring items, stood at CA\$24.6 million, or 15.6% of sales, compared with CA\$22.9 million, or 15.8% of sales, a year ago. Foreign exchange fluctuations had an unfavorable net impact of CA\$1.1 million year-over-year, or 0.7% of sales. The Corporation's funded backlog increased to CA\$839 million as at December 31, 2019, compared to CA\$769 million as at September 30, 2019, mainly due to increased demand for defense products under long-term contracts. (US\$1.00 = CA\$1.33 at time of publication.)

Boeing supplier CAM being sold to Stanley Black & Decker for US\$1.5 billion

North American toolmaker Stanley Black & Decker has announced it is to acquire Consolidated Aerospace Manufacturing LLC (CAM) for up to US\$1.5 billion. CAM is a major supplier of Boeing Co and approximately US\$200 million of the purchase price is contingent on Boeing obtaining certification for the still-grounded 737 MAX from the U.S. Federal Aviation Administration enabling it to return to service, and Boeing production figures for the beleaguered jet reaching an agreed level. CAM makes fasteners and other components for the aerospace industry and is presently owned by the investment firm Tinicum. "Growing and diversifying our industrial business through M&A is a key priority for the company and a focus of our strategic capital deployment," Stanley Black & Decker Chief Executive James Loree said in the statement.

Textron reports fourth-quarter 2019 results

Revenues at Textron Aviation of US\$1.7 billion were up 11%, primarily due to higher volume and mix, largely reflecting the Longitude's entry into service. Textron Aviation delivered 71 jets, up from 63 last year, and 59 commercial turboprops, down from 67 last year. Segment profit was US\$134 million in the fourth quarter, down from US\$170 million a year ago, primarily due to the mix of products sold and an unfavorable impact from inflation, net of pricing. Textron Aviation backlog at the end of the fourth quarter was US\$1.7 billion. Bell revenues were US\$961 million, up 16% from US\$827 million last year, primarily on higher commercial volume. Bell delivered 76 commercial helicopters in the quarter, up from 46 last year. Segment profit of US\$118 million was up US\$10 million, largely on the higher commercial volume. Bell backlog at the end of the fourth quarter was US\$6.9 billion. Revenues at Textron Systems were US\$399 million, up 16% from US\$345 million last year, primarily due to higher volume. Segment profit of US\$33 million was down from

US\$37 million last year, due to unfavorable performance, partially offset by higher volume and mix. Textron Systems' backlog at the end of the fourth quarter was US\$1.2 billion.



Gediminas Ziemelis, Chairman of the Board of Avia Solutions Group
Photo: Avia Solutions Group

Avia Solutions Group to acquire Bluebird Nordic

On January 24, Avia Solutions Group signed an agreement with the BB Holding ehf., advised by Barons Capital Partners, to acquire 100% of the shareholdings of Bluebird Nordic. Gediminas Ziemelis, Founder and Chairman of the Board of Directors of Avia Solutions Group expressed his contentment, "I am utterly pleased to have had an opportunity to acquire such a competent and reputable company. With this new acquisition, Avia Solutions Group steps into the narrow-body ACMI cargo business. "Cargo-airline Bluebird Nordic, headquartered in Iceland, uses a fleet of six Boeing 737 freighters – one Boeing 737-300 and five Boeing 737-400s, and operates scheduled as well as charter flights under its own brand. The airline also offers cargo export and import services from and to Iceland, serving more than 100 locations worldwide. As a part of Avia Solutions Group, Bluebird Nordic is expected to develop further, expanding its existing service portfolio and improving its operation.

Astronics reports fourth-quarter revenue and 2020 guidance

Astronics Corporation, a provider of advanced technologies for global aerospace, defense, and other mission-critical industries, has provided an update on various projects and events impacting 2019 results and expectations for 2020. The Company ended 2019 with un-audited preliminary revenue of approximately US\$198 million in the fourth quarter, slightly exceeding the high end of guidance that was issued on November 5, 2019. Preliminary bookings were US\$156 million in the fourth quarter and preliminary backlog at year-end was US\$359 million. Bookings were negatively impacted by uncertainty in the

market, which the Company believes is related to the ongoing 737 MAX grounding. In addition, the Company cancelled orders of approximately US\$7 million related to the restructuring and refocusing of its antenna business. Un-audited preliminary revenue for the full year totaled approximately US\$773 million. Given the uncertain 2020 production schedule for the 737 MAX and timing of its return to service, along with the related impact on aftermarket spending by commercial airlines, the Company is rescinding its initial 2020 revenue guidance issued in November 2019. Astronics expects to issue revised revenue guidance as the outlook becomes clearer. Peter Gundermann, Astronics Chairman and CEO, said, "The ongoing 737 MAX grounding affects our business both because of the production pause and because it leaves many of our airline customers short of capacity. This makes them reluctant to take planes out of service to install the types of products they buy from us. The situation is likely to persist until the 737 MAX returns to service. We will publish revenue expectations when we have more insight on the situation. In the meantime, we have taken actions to align our cost structure, anticipating a lower level of production and an extended disruption in the market." Astronics has line fit content of approximately US\$95,000 on each 737 MAX as well as buyer-furnished equipment, such as passenger power and connectivity hardware, that varies depending on aircraft configuration.

Boeing posts annual loss as 737 MAX costs approach US\$19 billion

Boeing has posted its first annual loss since 1997 as originally forecast losses of US\$8 billion resulting from the grounding of its 737 MAX jet are now approaching US\$19 billion, a sum which does not include any likely compensation payout to the families of the 346 victims of both fatal crashes involving the jet. The North American planemaker had originally anticipated it would return to the skies with full FAA approval by the end of last year, but that has now been rescheduled for June this year. Current costs incurred extend to US\$14.6 billion and Boeing has adopted a cautious tone through its indication that a further US\$4 billion in charges will likely be incurred in 2020. There is also the possibility Boeing will have to face a number of U.S. criminal investigations into 737 MAX-related. To make matters worse, Boeing is also cutting back further on its production of its current principal source of airplane revenue, the 787 Dreamliner. In October last year it announced it would be reducing production levels from 14 units to 12 units per month in late 2020, which will now fall to 10 units per month in the early part of 2021. Boeing has reported negative free cash flow of US\$2.67 billion for the fourth quarter of 2019, which ended on December 31, as opposed to a positive free cash flow of US\$2.45 billion for the same quarter in 2018.

BAE invests US\$2.2bn on two acquisitions to strengthen U.S. electronic systems foothold

BAE Systems plc (BAE), the British multinational defense, security and aerospace company, has announced that it is to make two major purchases in the U.S. – the military Global Positioning System (GPS) business belonging to Collins Aerospace, and the Airborne Tactical Radios (ATR) business belonging to Raytheon.

The opportunity to acquire two sector-appropriate businesses has come about through the antitrust requirements set out for the impending merger of Raytheon, and United Technologies Corporation which is the parent company of Collins Aerospace. Both acquisitions comprise asset transactions with tax benefits with BAE paying US\$1.925bn in cash for Collins Aerospace's GPS business which will have an expected tax benefit of US\$365m, and US\$275m in cash for Raytheon's ATR business, which will have an anticipated tax benefit of US\$50m. "As militaries around the world increasingly operate in contested environments, the industry-leading, battle-tested products of these two businesses will complement and extend our existing portfolio of solutions we offer our customers," said Jerry DeMuro, CEO of BAE Systems, Inc. "This unique opportunity to acquire critical radio and GPS capabilities strengthens our position as a leading provider of defense electronics and communications systems, and further supports our alignment with the modernization priorities of the U.S. military and its partners." According to BAE's announcement, these proposed acquisitions are subject to the successful closure of the Raytheon-UTC transaction, as well as the satisfaction of other customary closing conditions, including receipt of the required U.S. regulatory approvals. Upon closure, both business lines would be integrated into the company's Electronic Systems sector. "These are strong businesses with talented employees who share our focus on quality and technology innovation," said Tom Arseneault, President and COO of BAE Systems, Inc. "We are confident of a smooth transition that will accelerate our future together and look forward to welcoming these new employees to the BAE Systems team once the transactions are approved."

StandardAero acquires TRS Global Services subsidiary, TRS Ireland

StandardAero has acquired TRS Global Services subsidiary, TRS Ireland, a highly specialized provider of component repair and manufacturing processes for a large range of industrial, aeroderivative and aircraft gas turbines. The acquisition will continue to expand StandardAero's Components, Helicopters & Accessories (CH&A) division and its worldwide portfolio of MRO and component repair services. TRS Ireland is a privately held company operating from Cork, Ireland, with nearly 70,000 ft² of MRO operations and more than 100 employees. The company has a large installed base of current customers that includes Siemens, GE, Rolls-Royce, MTU, Safran, ITC, Doncasters and many others. TRS Ireland has extensive experience as an OEM-approved specialty coating provider of engine component repair and MRO services on blades, vanes and other hot section components for both new engines and a rising number of mature engines and a variety of applications. The company has more than 180 OEM approvals/licenses and unique FAA and EASA certifications.



Julian Stourton, CEO at Rusada (L) and Kevin Lansdowne, Senior VP of Airborne Solutions at Leidos (R)
Photo: Rusada

Leidos, a FORTUNE® 500 science and technology leader, has signed a partnership agreement with **Rusada** to become a systems integrator for ENVISION, Rusada's Aviation Maintenance Repair and Overhaul (MRO) and Flight Operations software. ENVISION is used by aircraft operators, MRO providers and manufacturers to efficiently manage their maintenance and airworthiness activities. The web-based software utilizes the most up-to-date technologies to empower aviation decision-makers, providing them with helpful and informative data that adds value to their organization. Under the agreement, Rusada will continue to be the software product developer. Leidos' Airborne Solutions Operation (ASO) will serve as the systems integrator providing services to install, configure, operate and apply the software for its customer's aviation business.

Swiss-AS has released that 2019 has been a very successful year for the company. 17 new customers have joined the AMOS community, amongst them, renowned carriers such as **Air Arabia**, **Gulf Air**, **Gulf Helicopters**, **SunExpress**, **Air Vistara** and **HK Express**. Swiss-AS was able to further extend its footprint among MRO providers by closing deals with **HAECO**, **TAP M&E**, **Sapura Technic** and **Nayak LM**. The continued success allows Swiss-AS to press ahead with its expansion path and further invest in the future of AMOS. As part of this investment, Swiss-AS welcomed close

to 60 new employees (around 30% of its overall manpower) to the company, thereby reinforcing every team and department. The company will continue to substantially increase its workforce in 2020. To accommodate this growing number of employees, Swiss-AS will double its office space at its headquarters in Allschwil / Switzerland. The extensive renovation work is scheduled to be completed in the second quarter of

2020 and will offer Swiss-AS' staff modern workplaces and state-of-the-art facilities including a large lounge area, activity-based creative zones and relaxation space. In 2019, Swiss-AS were able to announce that tier-one Lufthansa German Airlines – operating close to 300 aircraft – and Lufthansa Cargo had signed for AMOS. This now brings all members of the Lufthansa Group together using AMOS. Both carriers will implement AMOS including AMOSmobile for their line maintenance and CAMO activities. With a strong focus on driving innovation within the group, we are confident that this complex digital transformation project will be successfully completed and will have its positive effect on the whole group.

Wizz Air has introduced **Lufthansa Technik's** digital line maintenance planning solution available on the AVIATAR platform as a launching customer. Being a partner of AVIATAR since its introduction in 2017, Wizz Air uses the new tool to improve productivity, maximize aircraft availability and to reduce the manual planning effort. The integration of data from various different IT systems on AVIATAR is used by the algorithm-based solution to adapt plans for each maintenance location and for every aircraft in the fleet instantaneously. Every



Line maintenance planning
Photo: LHT

change in the flight schedule or maintenance requirements results directly in an updated plan, which can be transferred to the maintenance information system with a single click. Designed as a decision support tool, planning conflicts are made transparent, allowing the planner to manually intervene and focus on issues where their knowhow is required. The easy-to-implement solution is compatible with every common flight scheduling system and requires no additional authority approval.

Pakistani start-up **K2 Airways** has signed an agreement for **Rusada's** MRO and Flight Operations software, ENVISION. K2 Airways will begin scheduled passenger flights later this year from its base at Karachi's Jinnah International Airport. It

will serve numerous destinations across Pakistan including Islamabad, Skardu and Chitral. The airline also plans to fly to international destinations in the near future. Rusada will begin implementing six of ENVISION's modules immediately so that the system is fully live in time for the airline's maiden flight. Modules selected include Fleet Management, Line Maintenance, Flight Operations and Human Resources.

Dassault-owned ExecuJet MRO Services is to roll out several software applications from **Ideagen** across its global operations to standardize a series of processes as it prepares for a three-year growth project. Q-Pulse, Q-Pulse Risk and Academy will handle processes associated with quality, safety, risk and training across Execu-

Jet MRO Services' global sites. Ideagen's software will play a central part in ExecuJet MRO Services' digital transformation program as it looks to grow the business following its recent acquisition by Dassault Aviation. Graeme Duckworth, President of ExecuJet MRO Services and the company's remaining founder, said: "This is an exciting project and one that will play a significant part in our growth strategy for the foreseeable future."

Other News

Boeing has announced that it will retire the **Aviall** brand name. Parts, equipment and supply chain solutions previously sold by Aviall will be offered directly by Boeing through its portfolio of aerospace aftermarket supply chain service offerings. The change is part of the company's plan to integrate and align its businesses under the Boeing brand and systems. Aviall and its predecessor companies have provided aftermarket parts, equipment and services for the aviation industry since 1932. The company was acquired by Boeing in 2006 and has operated as part of Boeing's supply chain capability since 2017.

MTU Maintenance has opened an office in the heart of the aviation leasing community birthplace, Dublin, Ireland. Located in the Victorian quarter, the office is being run by leasing experts Eileen Guerin, Vice President Commercial Ireland and Des Clarke, Vice President Technical and Strategy Ireland, on behalf of **MTU Maintenance Lease Services B.V.**, the group's leasing arm headquartered in Amsterdam. They will be responsible for growing and intensifying MTU Maintenance's leasing and asset management activities in Ireland. "This move is a natural next step in our global yet local growth strategy and gives us immediate proximity to the well-established aviation and leasing scene in Dublin," says Martin Friis-Petersen, Senior Vice President MRO Programs, **MTU Aero Engines**. "This in turn enables us to efficiently and directly serve the community with the customized, lessor-oriented MRO solutions the industry requires as lease durations shorten, and the overall number of lease transactions increases."

Brazil's **Administrative Council of Economic Defense** (CADE) has approved **Boeing's** acquisition of Brazilian planemaker **Embraer's** commercial aviation division without placing any restrictions on the deal, though CAD's principal administration council could still reconsider the situation and settle the case through a vote. It follows clearance from jurisdictions such as the USA, China, Japan, South Africa, Montenegro, Colombia, and Kenya so now, Boeing only has to wait for approval from the European Commission. After halting the process in November 2019, the European body resumed its work on the probe on January 6, 2020, setting April 30 as the deadline for the decision. However, on January 21, 2020, the investigation was suspended once again. The Boeing-Embraer joint venture has two elements to it. One will comprise commercial aircraft and services, with Boeing holding 80% and Embraer 20%. The other joint venture will develop markets for Embraer's C-390 Millennium tactical transport, in which Embraer will own 51% and Boeing 49%.



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

please visit www.gameco.com.cn.



Putting the brakes on

The Wheel and Brake Industry is approximately 1% of the overall MRO Market.
Photo: AAR

The global aircraft wheels and brakes market has experienced significant growth in line with expanded aircraft fleets. With new advances in braking technologies coming online, the sector is poised for change as **AviTrader MRO** investigates.

Take-off, landing and taxing operations require robust maintenance and repair systems and procedures in place for aircraft wheels. Markets and Markets, a research firm, projected that the wheel and brake industry would grow from \$6 billion in 2017 to \$8.4 billion by 2022 at a CAGR of 6.7%.

The primary driving force for the industry is the increase in the number of aircraft in recent years. A strong demand is expected for the next 20 years due to strong economic growth, and an increase in the middle class in emerging markets.

Speaking to *AviTrader MRO* about the market forces influencing this sector Allan Arjut Sales Manager at Magnetic MRO says with modern technologies entering the sector older versions of brakes, for instance, are becoming increasingly hard to find on the aftermarket. "This, in turn, drives the prices up as a lot of airlines are still using brakes that were made 15 to 20 years ago. This presents challenges for every MRO in the market as the search for some components is challenging."



Allan Arjut, Sales Manager, Magnetic MRO

Greg Coffield, Vice President and General Manager at Aircrafters, Inc. observes that the aftermarket sees more brokers and MRO's offering overhauled

units – "In many cases an operator can save 50% over a new unit," he states.

Also, Coffield feels PMAs continue to influence the ageing aircraft marketplace providing cost effective options to OEM materials; he says in certain instances of sole source OEM positions, PMA is influencing pricing on current platforms such as the Q400 and in certain dual source platforms (i.e. 737NG). "PMA is presenting a third more cost effective product that smaller operators might be more inclined to consider."

Alex Lara, Director for Wheel & Brake Services at AAR says it is important that the repair facility maintains adequate parts inventory to expedite the overhaul and repair process of the wheels and brakes. "With some parts taking from 30 to 60 days to receive, understanding current and future requirement is vital for providing a quick turnaround of the wheels and brakes and satisfying the day-to-day operational requirements of the airline."

Particularly for rotatable inventory, Lara reminds that most major airlines own their spare wheel and brake inventory, but smaller airlines rely on the repair facility



German 'Alex' Lara, Director, AAR Wheel & Brake Services.



Aircrafters wheels and brakes facility.
Photo: Aircrafters

to provide this service. "Repair facilities with large rotatable inventories can service several operators flying the same type aircraft. This business model benefits the airline where they don't have to invest in spare inventory, and there is always a spare unit available on the shelf."

Since some of the most expensive parts in wheels and brakes are rotatable, Ats Viljak Workshop Supervisor from Magnetic MRO stresses their considerable significance. "Some parts like carbon brakes, heat packs and heatsinks can be reused after refurbishing. While a new carbon heat pack could cost tens of thousands of Euros, if the operator can lower the price of the maintenance by using refurbished and repaired heat packs, it is a welcome sight."

When speaking about wheels, rotatable spare parts are the tyres, Viljak attests. "If a tyre is worn or damaged, it is replaced and most of the old tyres are sent to the manufacturer for rethreading. However, some manufacturers allow rethreading while others don't. Again, rethreading can bring the cost of maintenance down and have a positive side of reducing the amount of waste in the industry."



Greg Coffield, Vice President GM. Aircrafters, Inc.

Aircrafters Inc. routinely exchanges assemblies with non-contracted customers states Coffield – "On certain platforms we only offer exchanges. This option is really a routine occurrence in the industry."

He continues: "Besides assemblies, heat sink exchanges are critical in supporting the industry. Operators cannot wait the 30 days that an OEM may require, we do our best to ensure on-shelf availability."

Coffield adds that consumables

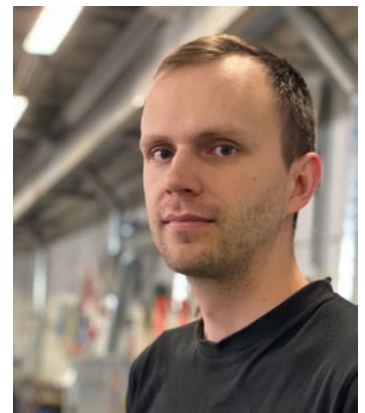
are just as important in supporting the MRO's and operators. "Last year we shipped over 90% of our orders same or next day. Quotes with a lead time rarely converted to a sale. We could be 10% cheaper but if it wasn't available the customer couldn't wait and would go elsewhere."

Incoming next generation aircraft are also seeing advances in their braking systems. ATR's STOL variant for instance will be fitted with carbon brakes and equipped with an automatic braking system that will ensure full braking power upon landing – mainly in harsh environmental conditions.

Lara from AAR acknowledges that carbon brakes bring many advantages to the aviation industry – "They are lighter in weight than conventional steel brakes and they have superior heat-absorbing capabilities. This in turn provides fuel savings to the airlines and decrease in emissions."

The global carbon brake supply is dominated by a few numbers of OEMs. Lara adds: "The manufacturing involves complex time-consuming processes that can sometimes affect the availability of inventory. The overhaul process of a carbon brake requires considerably less labour than steel brakes. There are no brake linings to replace and no rotating disks to resurface. This combined with the other attributes that are associated with carbon brakes signifies cost savings to the airlines and repair facilities alike."

The opportunities do not extend to commercial aircrafts only, Lara points out. "There are



Ats Viljak, Workshop Supervisor, Magnetic MRO



Wheels and brakes market has experienced significant growth.
Photo: Steven Tiller

promising opportunities in business jets, regional jets, and the military. As the demand for newer aircrafts continue to rise, so will the MRO requirement for carbon brakes," he says.

Opportunities to expand capabilities are always welcome when it comes to the ever-growing industry, Viljak feels. He says with new technologies comes new standards, new techniques and new part numbers. "With the new part numbers come new special tools and this can cause some challenges. As some tools can't be purchased that easily, good connections and contracts are the keys to development.

"Also, many new technologies, such as the electric brake housings, require highly expensive machinery for testing and maintenance. We see this as an opportunity as every new technology presents the chance to be the first one on the market to offer maintenance."

Another critical element to consider is the diagnosis and treatment of wear and tear on wheel and brake components. Lara says a large portion of their diagnostic at AAR is visual. He explains: "Wheels and brakes are first disassembled, and all parts are carefully cleaned. This allows us to perform a detailed visual inspection and take critical measurements on load bearing surfaces that can accrue excessive wear. We also perform Eddy current, dye penetrant inspection and magnetic particle inspection to detect cracks in major components."

Most small parts showing excessive wear and tear are rejected and replaced, Lara adds. "The larger more expensive parts usually have a repair associated with the damage that can be performed to bring the part back to airworthiness condition."

Coffield mentions that the OEMs will dictate diagnosis and treatment (repair/replace) for wheel and brake components. He indicates that while wheel life is generally wholly dependent on tyre life; brake life is a combination of material design and operator (aircrew) skills i.e. carbon operations are the opposite of steel operations.

Viljak observes that the industry is always growing, the demand for rotatables and consumables is also expanding. Recent years have shown a rise in standards and rules to be put into effect that would protect the environment more. "Although safety is the key to the aviation industry, strict environmental standards will start to influence the manufacture and maintenance of components even more."

In industry news, in October last year, Rotable Repairs (RR) announced the contract extension of its longest-standing Scottish airline Loganair. Loganair has been in the process of extending and modifying its fleet and has chosen Rotable Repairs to support its SAAB 340, SAAB 2000, Embraer 135/145 aircraft. The fleet has doubled in size in the last year and RRs new wheel and brake maintenance facility will allow them to absorb this work with no discernible impact on production.

Bryan Croft Commercial Director at Rotable Repairs said: "I think this is a testament to the commitment of service that Rotable Repairs offers, we have worked with Loganair since 2002 and love working with these guys, they have a demanding schedule but respect their requirements."

More recently, TP Aerospace and SAS Scandinavian Airlines signed a multiyear wheels and brakes programme. Philip Hansen, TP Aerospace's Global Programmes Director stated, "This new partnership is a perfect testament to the operational and financial advantages of our wheels and brakes programmes, assisting our customers around the world realising cost savings while also making efficiency gains. We are looking forward to bringing real value and play a significant role in securing continued operational stability for SAS Scandinavian Airlines, a globally recognised airline for its strong and professional brand, for years to come."

In the hot seat.....

Boris Wolstenholme, Chief Strategy Officer, AJW Group

AviTrader MRO: Briefly explain your job function at AJW.

Wolstenholme: As Chief Strategy Officer at AJW Group, I am responsible for defining the Group's strategy and executing delivery of that strategy with the strategic business development team. This includes market research and understanding market developments, new platform development and new product development.

We have recently expanded our portfolio beyond commercial aviation, into the business and defence sectors, and I will continue to lead our contracted services within these sectors and develop solutions for major contract opportunities, ensuring a synergy with business line capabilities and company strategy.

As a company, AJW provides airlines and lessors with flexible and innovative solutions to monetise their assets and streamline their operating costs through tailored plans. Within the wider organisation, a large part of my job involves developing these tailored plans with our customers.

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

Wolstenholme: The most challenging part of my job is by far the development of a tailored solution to meet the needs of the customer. Whilst all customers have the same generic issues, their particular requirements and context is always bespoke. Delivering this high level of efficiency and effectivity creates a challenge within

the organisation as we must develop something that is bespoke to the customer but still as generic as possible for us in terms of doing our job. This is challenging, exciting and rewarding. On the other hand, the most rewarding part of the job is being able to engage with customers at a meaningful level and dealing with tangible problems, with real shared objectives. As an organisation we only work with companies that want to work with us, so that we don't enter into contentious or conflicting relationships - hence the high-level customer satisfaction that we strive for and achieve. I really enjoy the 'can do' attitude of our organisation and find it extremely rewarding. On top of this, doing that on an international scale, dealing with multicultural organisations and environments at an executive level is even more rewarding.

We are always innovating, developing new products, solutions and marketplaces within our organisation, we are agile and striving at all times, and this is both challenging and rewarding. Challenging because we come across new environments all the time and it can cause complications and rewarding because shareholders or owners lead us to strive for constant new environments and new standards of delivery. There is definitely no room for complacency within our business!

AviTrader MRO: What are AJW's capabilities in terms of asset management?

Wolstenholme: AJW has a unique insight into asset management as it manages the out-



Boris Wolstenholme, Chief Strategy Officer, AJW Group

sourced inventory for a major airline, and supports hundreds more in AOG situations, ad hoc requirements or MRO and vendor network management.

AJW can optimise its customers' profitability by converting surplus aircraft and engine inventory into a revenue generating asset. It provides airlines and lessors with flexible and innovative solutions to monetise their assets and streamline their operating costs through tailored plans.

AJW is also able to manage all items of stock from all major aircraft platforms including Airbus, Boeing, Bombardier, Embraer and ATR; be it the spare components in a warehouse or entire aircraft and engines that are reaching their end-of-life. Our asset management service offerings include inventory planning, asset monetisation, teardown management, consignment and lease redelivery. It is a 360 service.

Investors also benefit from AJW's asset management solutions. Financial institutions, including banks, often end up owning stock and they rely on AJW to provide a retail outlet in exchange for a share of the proceeds generated. Through AJW Group's companies, we develop projects where investors can purchase assets as an investment and benefit from AJW's market insights.

AJW's leasing arm works together with the financial community, primarily on engines, where we act as lease managers for third-party owned engines, in addition to the engines AJW owns and leases. AJW has unique insight into the engine requirements of airlines and by having our broad network of asset owners, we can match available engines to specific airline requirements.



AJW explores all options for customers to achieve inventory optimisation.
All photos: AJW

AviTrader MRO: How can a third-party like AJW help airlines with their material planning and stock levels?

Wolstenholme: With the asset management capabilities, I just mentioned in the previous question, it is fair to say that AJW supports airlines in their planning. We explore all options for our customers to achieve inventory optimisation, considering factors such as component availability and reducing the balance sheet risk and exposure, while maximising their revenue potential.

AviTrader MRO: Should airlines be looking to monetise their excess inventories?

Wolstenholme: In reality, material planning and inventory management can sometimes be underutilised, resulting in surplus stock sitting redundant in warehouses and absorbing capital at an alarming rate. The logical answer is for airlines to outsource the management of their assets to specialists, rather than owning and managing their own inventory.

In these circumstances, access to the aftermarket is crucial - this is achieved through utilising provider's established global sales teams who have long-standing relationships with the world's airlines. With tailored plans, this increases the opportunity to monetise assets and gain a return on surplus and often redundant stock. Finally, by working closely with the customer, providers such as AJW, create transparent, strategic and tailored plans to control and manage inventories, profiling demand and aligning them with airline's unique needs.

AviTrader MRO: Several excess inventories are obsolete and/or slow moving throughout the market. What challenges do these present for the airline and inventory specialists like AJW?

Wolstenholme: It never ceases to astound me what airlines accumulate through their organic procurement processes of meeting their operational needs. The material has been bought for different reasons, but it is usually never tracked against that reason. When reflecting on why you own it and therefore what's the relevance to anyone else, that piece of the puzzle that is missing.

The industry is very good and efficient at monetising and managing the hot moving, standard assets, but is rather inefficient at moving the slower environment inventory.

This is where our expertise comes in. We can profile inventories by what is generically required across a platform, serial numbers, engine types etc before we can focus in on what is specific to that operator or specific to that aircraft type.



Inventory Optimisation System (IOS) measures demand on a geographic level.

If inventory has been bought because of its criticality, we can also feed it into our own programmes, whereby it may not be high moving but organisations like AJW or airlines may need to own it to support its own programmes and AOG events.

Our database can cope with the alternate part numbers, the higher-level assemblies and the modification standards that are required to make something effective or more desirable in the current fleet environment. Our MRO network means we can use units / piece parts if required. Another challenge would be the need for different mechanisms for different market access. Fortunately, our global reach and brand gives us a high level of accessibility. As an approved vendor to almost every airline in the world, our barriers to transact are very low. We support over 1000 airlines across 117 countries and we can do single trades at low value, right up to large total supply chain contracts.

AviTrader MRO: Do you have any deliberate systems in place to enhance the value of surplus inventories?

Wolstenholme: As an organisation we believe in investing in inventory. Not only from its mod standard but also from its repair and certification status. We ensure that it is fully saleable at the point of demand. Most modern demand is for 'just in time' requirements and therefore holding the right inventory with the right certification standards to meet everyone's requirements is adding value to it.

Our Inventory Optimisation System (IOS) measures demand on a geographic level and therefore we can position the right material at the right location and where the highest level of demand is. This aligns with our sales teams who are positioned geographically to match this demand.

AviTrader MRO: In your experience, which aircraft or types of parts are you

seeing greater demand for inventory management?

Wolstenholme: Let me put that in context first. At AJW we manage the inventory of moving rotatables and optimise their availability. We put in a solution where we optimise availability of what the customer needs through inventory planning, positioning and with the correct service level; thus, creating a supply chain and repair management processes that supports that. Everything the airline doesn't need for its day to day operations (i.e. doesn't need to own) we then put a supply chain solution in place to meet and manage that demand.

What we tend to see as a growing focus is that airlines optimise their critical and core components very well for their main hubs, but they carry greater levels of excess inventories at their remote stations, particularly for long haul fleets. They tend to simply hold the material just in case, but also tend to hold excessive inventory around the repairables and the lower value rotatables that have been poorly planned.

We notice that the airline often accumulates inventory off the back of programmes such as retrofits, campaign modifications and engine programmes following shop visits. These excess types of inventory then start to accumulate. But also, the legacy aircraft types that were operated, but had no sunset solution in place prior to the exit of that aircraft.

The inventory challenge tends to manifest itself across all operators. Those that have been traditionally outsourced also accumulate inventory unnecessarily. The airlines that were traditionally insourced will have greater levels of surplus inventories but there is no particular pattern by aircraft type per se.

If we were to pick one, it may be the long haul widebody fleet aircraft as they could be more susceptible to creating surplus inventories due to the challenges they face at their destinations.

Candidates for conversion



The first Big Twin 777 is due for delivery to GECAS in 2022.
Photo: GECAS

AviTrader MRO checks in on the freighter conversions market to see what progress has been made considering a global decline in demand for air cargo.

The past 12 months have been tough on the air cargo market. According to IATA, 2019 was the worst year for air freight demand since 2009. Demand, measured in freight tonne kilometres (FTKs), fell by 3.3% compared to 2018 while capacity (AFTK) rose by 2.1%. This was the first year of declining freight volumes since 2012, and the weakest performance since the global financial crisis in 2009 (when air freight markets contracted by 9.7%).

In the freighter segment however, the conversion market continues to flourish with several initiatives launched in the past year or so. Israel Aerospace Industries (IAI) and GECAS came together to launch a new long-haul, large capacity freighter -the all-new 777-300ERSF, The Big Twin.

The first aircraft is due for delivery to GECAS in 2022. IAI has committed to providing GECAS with 15 converted planes in six years, with an option for 15 additional conversions in the future.



Rafi Matalon, IAI – Aviation Group

"We are developing this aircraft to provide the volume and payload required by the carriers for this large segment of operation," declares Rafi Matalon, EVP Marketing, IAI-Aviation Group. IAI have indicated that the need for the type is justified by the rising demand especially from e-commerce.

"Yes, due to the e-commerce market demand for the long routes and general cargo the current wide body fleet does not provide the answer since

the 747 and MD11s are in the phase out process. The converted 777-300ER will lead the wide body freighters for the coming 20 years," Matalon adds.

Paul Gibson, VP Sales – Solutions and America's at Eirtech Aviation Services Limited explains further saying the cost efficiencies such as operation and fuel burn, weight/volume ratio is rapidly changing due to e-commerce shipments which means that cargo becomes lighter per cubic meter – "Currently on average max 2000 kgs on a lower deck pallet. Far away markets can be served easily without intermediate stops by using the B777-300SRF."

The 777-300ERSF is the only large aircraft that offers a significant level of operational commonality with the 777-200LRF. In addition, it can operate seamlessly alongside the 777-300ER, which is significant due to the popularity of the 777 programmes.

For operators like Qatar Airways Cargo, 777F variant plays a key role in the carrier's full freighter operation. The launch of transpacific freighter services from Macau to North America in October 2018 has allowed customers in China to move their cargo directly to the USA and Mexico over the Pacific, significantly reducing air transport time.

Guadalajara is served by a Boeing 777F twice weekly since January. The city has the third-largest economy and industrial



Paul Gibson, VP Sales – Solutions and America's, Eirtech Aviation Services Limited.



Qantas Freight will take delivery of the first A321 P2F from Vallair.
Photo: Qantas

infrastructure in Mexico. Major exports on the route consist of perishables and general cargo, while general cargo forms most imports.

Almaty was also added to the cargo network in early 2019 served by 777Fs. Almaty is a key financial centre and the largest metropolis in Kazakhstan. Major imports into Almaty include general cargo, fashion and high-tech products. In July, the carrier announced Singapore as a new freighter destination on its transpacific freighter route also operated by the 777s.

As for the 747-400, several operators are in the process of retiring their fleets including major users such as British Airways. Gibson says KLM is also phasing out the 747 Combi fleet – “they are the only airline still operating the 747 Combi. Retiring these aircraft will result in a considerable amount of main deck capacity being taken out of the market and will be replaced to the greater part by 777Fs with a general payload of about 100 tonnes. There haven’t been so many 747’s to be converted into freighters lately and the 777F in fact delivers the same opportunities as the 747’s and burns less fuel as a twin engine aircraft,” Gibson states.



The conversion market continues to see demand.
Photo: Aersale

IAI Aviation Group monitors the passenger aircraft market to look for good candidates for P2F conversions – “We do see the accelerated retirement of the 747-400s, but take it as an opportunity for conversion for customers who need the large volume and payload that this aircraft can offer post conversion. IAI is the only conversion house that still has an active line for such aircraft, two of them were converted in 2017 and we do receive some enquiries about them,” says Matalon.

Of the parked widebody freighters, there are a small pool to choose from which begs the question if the market will see a resurgence of freighters considering the softening of the air cargo market. Matalon believes parked aircraft will come “back to life” as much as possible in response to the demand in peak seasons, pending the airline ability to support its maintenance requirements.

At Eirtech, Gibson sees the A330 as a good candidate for conversion as well as other smaller types. “This is mainly driven by the gigantic growth of e-commerce shipments. Amazon is building its own freighter fleet (Prime Air base in Cincinnati) and Ali Baba is looking for conversions of A320 aircraft only to serve the Chinese region. The past two years have not been so good for cargo and I think that with a resurgence in the market the above freighters mentioned will be chosen. I hear pharmaceutical Logistics and e-commerce will be the main drivers of airfreight.”

In fact, the A321 conversion programme has had a particularly progressive year. Vallair recently celebrated the maiden flight with their first A321P2F cargo conversion aircraft. The inaugural flight forms part of the certification process to reach conversion approval status. Vallair has placed this first A321P2F aircraft conversion with Qantas, the first airline in the world to operate the A321 as a freighter aircraft. The A321P2F will add nearly 50 per cent more capacity compared to the existing fleet and is due to be delivered in July 2020.

Although an airframe becomes cheaper with age, the conversion itself does not. Gibson highlights that converted freighters can be up to 75% cheaper than a factory-built aircraft if available. The resale value of a passenger 737 is approximately \$4 to \$5 million and could be doubled once converted to \$8 to \$10 million. “Up to over 2,000 freighters are required to meet demands over the next 20 years keeping the number of conversions on the rise.”

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- B787-800/900
- B777-200/300



- E170
- E190
- E175
- E195



- A300-600
- A330
- A310-200/300
- A340-200/300
- A320 Family
- A320neo

Jeff Wilkinson, Chief Executive Officer at Joramco talks about his role at the Jordanian based MRO, the business landscape and future opportunities.

AviTrader MRO: What is Joramco's Vision as a leading MRO in the region?

Wilkinson: Our vision is to be a world class independent MRO. We are achieving this by delivering; safe, efficient and quality focused services. Our responsibility towards our people remains a corner stone of our business which will see us grow by investing in our people in order to develop a distinguished, passionate, dedicated and highly competent team.

AviTrader MRO: As CEO, what is the most challenging part of your job within the company?

Wilkinson: The industry is in a constant state of flux regarding technological advancements; there are always innovations on the rise, with new technology being released consistently. Making sure we are always on top of the latest generation of aircrafts and technologies by keeping an experienced and highly trained staff, as well as adding new capabilities as per customers' demands, is a point of pride for Joramco.

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

Wilkinson: Seeing the results of the level of

care and commitment to excellence that we put into every aspect of our business. We strive every day to perform at a higher level and it shows in our work, it's what makes us a leading MRO in the region and it's what is going to enable us to continue making a remarkable footprint in this sector.

AviTrader MRO: What are your main capabilities in terms of MRO?

Wilkinson: In addition to A320, A330, A340, B737 CL, NG and E190 & E170s, during 2019 Joramco has obtained EASA Part 145 approval for the Boeing 777 and the A320neo, this compliments the 2 main additions of the B787 and B737-9 MAX last year and brings our total of Airbus, Boeing and Embraer types covered to 31. Our authority approvals cover an impressive geographical coverage totalling 25 authorities. The enhancement of our capabilities is fully in line with the vision of our majority owner, Dubai Aerospace Enterprise (DAE) who strategically acquired Joramco in 2016.

AviTrader MRO: The recent Ryanair heavy checks contract is a major win for Joramco. Are you making any further investment to handle this contract?

Wilkinson: True, Ryanair is a big win. Joram-



Jeff Wilkinson Joramco CEO

co has an initial one-year contract for heavy maintenance on its fleet of Boeing 737s. The European low-cost giant has over 400 heavy checks due this winter and most of it has to be outsourced. Joramco has won two lines from October 2019 and onwards.



Joramco is specialised in airframe heavy maintenance services.
All photos: Joramco



Joramco is actively expanding capabilities within this sector.

AviTrader MRO: Can you tell us more about your contract with Kenya Airways and your prospects for the African market?

Wilkinson: During last summer, Joramco secured 5 OOP (Out of Phase) checks from Kenya Airways in addition to two 737 NG later in September. Following that, Joramco has announced during the Dubai Air Show in November that it has won another contract for seven 787 C checks. This reaffirms Joramco's efforts in expanding its capabilities and its customer base, in addition to proving its position as an industry leader. It is also an excellent opportunity for skills and knowledge transfer to become the maintenance hub for different operators in the African region.

AviTrader MRO: Which sector of MRO are you seeing the greatest opportunity at Joramco?

Wilkinson: Joramco is specialised in airframe heavy maintenance services and all that it takes to support it, from support shops, avionics and modifications and cabin upgrades, so we are focused on actively expanding our capabilities within this sector.

AviTrader MRO: Are you investing in any

new IT processes for maintenance and repair?

Wilkinson: Joramco has implemented FleetCycle recently which has been designed to assist maintenance companies in satisfying maintenance requirements, planning and recording maintenance actions, and providing consistent data for reporting and analysis. The FleetCycle Software Suite is modular with any aspect able to operate independently or in conjunction with other FleetCycle modules or integrate with other third-party software. FleetCycle process control software helps MROs save money by going paperless with everything from project management to timesheets. Our target is to reduce turnaround

times and quality escapes while improving velocity, efficiency and forecasting.

AviTrader MRO: What can we expect from Joramco in 2020?

Wilkinson: Transformation is at the heart of our strategic roadmap and will continue its third year in 2020, therefore we expect more change and more challenges. We have welcomed a new COO to the existing stable C Suite management team. We anticipate more growth in terms of customer demographics and enhanced processes to keep our position as a best in class MRO and to continue providing our customers with the best service.



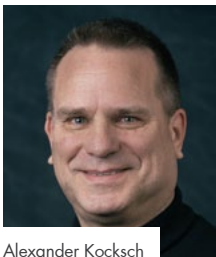


Sign Kadouh

CDB Aviation, a wholly owned Irish subsidiary of China Development Bank Financial Leasing Co., (CDB Leasing), has announced, on the sidelines of Singapore Air Show, the promotion of

Sign Kadouh to Head of Asia Pacific. Kadouh is being promoted to the new role from his previous position of Head of Commercial, Asia Pacific. In addition to continuing to lead the Asia Pacific commercial team and driving commercial and strategic activity within the region, including Greater China, South Asia, Southeast Asia, North Asia, Australasia, and the Pacific Islands, Kadouh also will be the operational leader for Asia Pacific, managing the day-to-day activities of the company's Hong Kong office.

Nordic Aviation Capital has appointed **Patrick de Castelbajac** as Chief Executive Officer, effective in the third quarter of 2020. He will be based at NAC's newly opened Headquarters in Limerick, Ireland. De Castelbajac has almost 20-years-experience in the aviation industry. Most recently, he was President of the Asia-Pacific region for Airbus. Prior to this, he was Executive Vice-President Strategy and International.



Alexander Kocksch

Ascent Aviation Services has announced that **Alexander Kocksch** has joined the company as Director of Purchasing and Materials. In his new position, Kocksch reports directly to Dave Querio, President, assuming responsibility for the development, direction and coordination of the Purchasing and Materials departments. Kocksch and his team are also coordinating with the company's operations group to ensure that all opportunities are thoroughly evaluated in order to ensure the continued efficient and productive growth of Ascent operations.

AAR, a provider of aviation services to airlines and governments worldwide, has announced that **Jessica A. Garascia** has joined as General Counsel, effective February 3. Garascia succeeds **Robert Regan**



Jessica A. Garascia

and will report to **John Holmes**, President and Chief Executive Officer. She will oversee AAR's internal legal team, as well as outside counsel, and will have responsibility for all legal affairs. Garascia joins AAR from USG Corporation where she served as Deputy General Counsel responsible for overseeing all M&A activity, compliance, corporate governance, securities law and NYSE compliance. **Photo: Jessica A. Garascia**



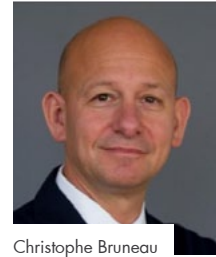
Mark Radford

Trenchard Aviation Group has appointed **Mark Radford** as its new VP Business Development. With 30 years' experience in the aviation interiors industry, working for both OEMs and part 145 organizations, he has held senior positions covering sales, operations and procurement. His broad range of product knowledge covers seats, lavatories, galleys, monuments, soft furnishings and working parties. Radford joins Trenchard from his most recent position as Sales Director – Western Europe with Iacobucci HF Aerospace SPA where his achievements included winning contracts to provide seating for the first all-electric aircraft prototype and to supply the Iacobucci induction oven for VIP aircraft.



Michael Garcia

Kellstrom Aerospace, a global after-market leader in aircraft lifecycle solutions, has announced the appointment of **Michael Garcia** to serve as Vice President of Commercial, effective January 16, 2020. As Vice President of Commercial, Garcia will oversee all product line-related activities and technical services, as well as trading and leasing of whole assets for Kellstrom. Kellstrom continues to grow its presence as a global after-market leader acquiring un-serviceable and serviceable assets to support its customers.



Christophe Bruneau

Christophe Bruneau has been named Vice President of Military Engines division at Safran Aircraft Engines. In this new position, Bruneau will be responsible for military engine production and support, especially the M88 fighter engine, in export markets. He is also in charge of coordinating research and technology work on the engine that will power the new-generation fighter in Europe's Future Combat Air System (FCAS), within the scope of a partnership set up with MTU Aero Engines in 2019.



(left to right) Ciaran Murphy, Seán Dooley and Declan Lenane

Eirtech's Technical Operations department combines its CAMO and Technical Services departments to provide a more comprehensive service for its global customers. The company has therefore appointed **Seán Dooley** as Head of Technical Operations within the Eirtech organization. In this role he will oversee the operation of both the Technical Services and CAMO departments in order to ensure an overall seamless product offering for customers globally. **Declan Lenane** will remain as CAMO Manager and will continue to be responsible for all Part M Technical matters, while **Ciaran Murphy** will remain as Technical Services Manager.