

MRO

Aerospace Magazine

The Large Get Together

Chicago becomes
the hotspot of the MRO industry



Experts talking

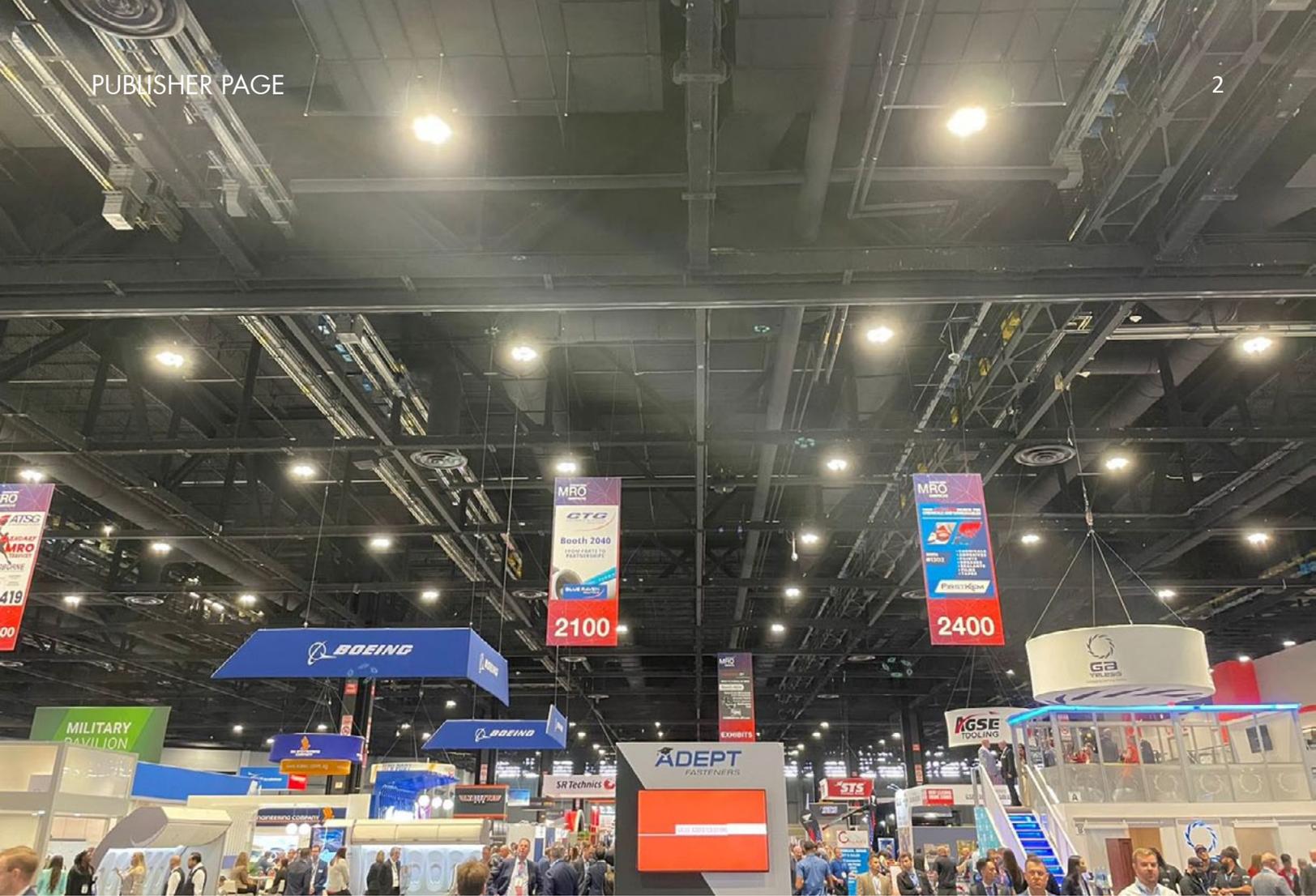
New trends in IT solutions
in the MRO world

Executive Interview

Talking to Brian Driscoll
from Inventory Locator Service

Deep Dive

A view at the
South East Asian MRO market



Dear industry colleagues,

In this issue, we are focusing on MRO Americas in Chicago. Our team was there and we had the opportunity to meet our business partners and friends all together at one event. As always, the event was a great success. Thousands of visitors from our industry and all the well-known companies were in Chicago. Walking through the lively aisles reminded me of the Covid times.

During the peak of the pandemic, our industry was almost at a standstill. And nobody knew what would happen next or when it would all end. Some companies in our industry unfortunately didn't survive.

We could no longer meet or fly. To the delight of the CFOs, we switched to video conferences and thus saved travel costs for our companies. We worked from home and some of us must have worn swimming shorts under the table during a video conference.

But no video conference can replace what we experienced again in Chicago. Nothing can replace the face-to-face meeting. We sit together, have a drink together, negotiate hard and have fun doing it all. We are back and have beaten the pandemic, even if it was painful at times.

Special thanks to all the new faces I was able to meet in Chicago.

I'm already looking forward to the next reunion.

Peter Jorssen
Publisher



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Hola, AeroEngines Asia-Pacific



April 24-25, 2024
Hong Kong, China

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Published monthly by

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Sky Airline and Safran sign NacelleLife service deal

Safran Nacelles and Sky Airline, the Chilean low-cost carrier, have signed a multi-year service agreement for the airline's Airbus A320neo-family fleet, powered by CFM International LEAP-1A turbofan engines. Under this agreement, Sky Airline gains access to a comprehensive shared pool of large nacelle components at any given time, ensuring swift resolution of any in-service issues. Furthermore, the nacelles will undergo maintenance and repairs at the Safran Nacelles Services Americas MRO station in Indianapolis, U.S.A. Additionally, the airline will benefit from Safran's expertise and know-how as the designer and manufacturer (OEM) of the A320neo nacelle, for engineering repair

solutions and training maintenance operators. Alain Berger, Safran Nacelles' Executive Vice President – Customer Support and Services, commented: "We are very proud to be Sky Airline's partner for their growing A320neo fleet. As being the A320neo full-nacelle designer, our teams are ensuring to our customer the highest levels of quality services which contribute to their efficient operations." Safran Nacelles' services form a crucial component of the company's NacelleLife™ support programme, which ensures responsive, cost-effective, and high-quality services to keep airliners in operational condition while minimising costs.



Representatives from Sky Airline and Safran Nacelles signed the new deal at MRO Americas in Chicago

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Honeywell and ITP Aero to establish European service centre for F124-GA-200 aircraft engines



Honeywell and ITP Aero to set up an authorised service centre for Honeywell's F124-GA-200 engines

© Honeywell

Honeywell, in collaboration with ITP Aero, an aerospace propulsion company, has unveiled intentions to establish a new authorised service centre for Honeywell's F124-GA-200

aircraft engines. Situated in Madrid, the Ajalvir site of ITP Aero will operate as a licensed maintenance, repair and overhaul (MRO) facility for International Turbine Engine Company (ITEC), a joint

venture between Honeywell Aerospace Technologies and the Aerospace Industrial Development Corporation (AIDC). The agreement underscores Honeywell's commitment to aligning with the future megatrend of aviation, offering advanced technological assistance to enhance efficiencies and promote sustainable operations. Expected to commence operations by the conclusion of 2024, this inaugural European centre for Honeywell's F124-GA-200 engine will expand local repair capabilities for over 150 engines in the region. It aims to provide operators with expedited repair turnaround times by facilitating local transportation and repair services. This facility marks Honeywell's third regional service centre for F124-GA-200 engine support, complementing existing centres in North America and the Asia Pacific region.

Pem-Air unveils state-of-the-art facility, elevating aviation service standards



Pem-Air has inaugurated its new facility in Brooksville, Florida

© Pem-Air

Pem-Air Turbine Engine Services (Pem-Air) has inaugurated its brand-new, cutting-edge facility, marking a significant milestone in the company's dedication to serving the commercial aviation aftermarket. Spanning 80,000 ft², this state-of-the-art facility represents a substantial expansion for the company, underscoring its steadfast commitment to excellence and innovation in customer service. Virgil D. Pizer, CEO of Pem-Air, commented, "The growth of Pem-Air stands as a testament to our team's unwavering commitment to delivering exceptional service and results to our valued customers. This new facility marks a significant advancement in our capabilities and efficiency, empowering us to better meet the needs of our clients." Featuring seven-times the capacity of its predecessor, the new facility boasts over 20 engine bays, extendable

to 35 depending on configuration. This expanded capacity enables the company to cater to a broader spectrum of aircraft engines, specialising particularly in GE-90 and Trent 800 engines, while maintaining the same level of precision and expertise. Additionally, the company will continue its comprehensive servicing of engine types, including the CFM56, CF6, CF34, V2500, JT9D, JT3D/TF33, PW2000, PW4000, and RB211. Positioned at the forefront of the commercial aviation MRO industry, the new facility equips Pem-Air to deliver expedited turnaround times, exceptional service, and unparalleled expertise to its clientele. "We are excited to inaugurate this facility and embark on a new era of aviation excellence," stated Pizer. "Pem-Air is poised to elevate its standards and provide the quality and service our customers deserve."

Malaysia Airlines to equip brand-new A330neo with RECARO seats

RECARO Aircraft Seating (RECARO) was chosen by Malaysia Airlines to furnish its brand-new Airbus A330neo aircraft with the CL3810 economy-class seat. Malaysia Airlines will be the first carrier in Southeast Asia to feature the CL3810 seats. The CL3810 is the latest addition to the RECARO seating portfolio. The lightweight seat was designed to enhance the passenger experience and operational efficiency. More than 5,000 CL3810 pax are set to be delivered for a line fit on Malaysia Airlines' A330neo aircraft, starting in Q3 2024 through to 2028. Built with sustainability in mind, the CL3810 is nearly 15% lighter than its predecessor, contributing to significant fuel savings for airlines while optimising cabin performance. The seats will be dressed in a customised trim and finish, incorporating Malaysia Airlines' signature songket motif. Passengers can expect a spacious and ergonomic seating experience, with features including seat pitch ranging from 31 to 36 inches, six-inch recline, a 13.3-inch in-flight entertainment



RECARO CL3810 seats

© Malaysia Airlines

system and individual power access at each seat with type USB-C and USB-A ports. Seat cushions with layered foam and ergonomic technology, a six-way adjustable headrest and a Comfort+ seat bottom with articulation will further enhance the passenger experience on long-haul flights. In addition, the unique slim backrest design will provide an extra

inch of knee space. Malaysia Airlines is the national carrier of Malaysia and since September 2015, has been owned and operated by Malaysia Airlines Berhad. It is part of the Malaysia Aviation Group (MAG), a global aviation organisation that comprises of different aviation business and lifestyle travel solution portfolios aimed at serving global air travel needs.



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Liebherr-Aerospace acquires GIT Galvanoplastie Industrielle Toulousaine



GIT, a 100%-owned subsidiary of Liebherr-Aerospace Toulouse SAS, soon will be known as Liebherr-Aerospace Coatings SAS © Liebherr Aerospace

Liebherr-Aerospace Toulouse SAS has completed the acquisition of GIT Galvanoplastie Industrielle Toulousaine SAS (GIT). Situated in Cugnaux, near Toulouse, France, the company specialises in surface treatment and the application of liquid paint on diverse materials primarily for the aerospace sector. In 2023, GIT SAS recorded a turnover of €8 million (£6.84 million) and employed over 80 individuals. François Lehmann, Chief Financial Officer of Liebherr-Aerospace & Transportation SAS and Managing Director of Liebherr-Aerospace Toulouse SAS, elucidated, "With the integration of GIT Galvanoplastie Industrielle Toulousaine SAS, we are enriching our industrial competencies by incorporating crucial expertise in surface treatment. This acquisition not only enhances our industrial capacity but also introduces

cutting-edge processes to facilitate our growth and that of our clientele." He further added, "This strategic move follows our recent acquisition of SIBI SAS in Montauban, a subsidiary of the KEP Technologies Group, and the establishment of our subsidiary Liebherr-Aerospace Montauban SAS, less than three months ago. These endeavours underscore our commitment and foresight to address the burgeoning demands of the aerospace industry and to fortify our foothold in the Occitanie region." GIT, a 100%-owned subsidiary of Liebherr-Aerospace Toulouse SAS, soon will be known as Liebherr-Aerospace Coatings SAS. Guillaume Deltombe, former production manager at Liebherr-Aerospace Toulouse SAS, will assume leadership as the manager of the newly formed entity.

Pentagon 2000 Software, Inc. has successfully completed the SOC1 Audit and Certification process. This audit, conducted by third-party auditor **Ernst & Young** according to AICPA standards, is crucial for ensuring trust in financial reporting. The audit's success underscores the effectiveness of the company's controls and its ability to safeguard client data. By obtaining the SOC1 report from an

independent auditor, Pentagon 2000 Software can confidently communicate its risk management and internal controls framework to customers. Pentagon 2000 Software, Inc. is a leading provider of enterprise software systems tailored for the aerospace, defence and electronics industries. Its flagship product, PENTAGON 2000SQL, is a fully integrated solution designed to meet the unique business

processes, quality assurance systems and regulatory requirements of these sectors. PENTAGON 2000SQL caters to enterprises and functional units involved in various operations, including parts distribution, repair and overhaul (MRO), logistics supply chain management, aircraft maintenance, manufacturing, government contracting and air fleet operations, both commercial and military.

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GE Aerospace takes flight as independent public company



GE Aerospace and GE Vernova rang the opening bell together on April 2, 2024, at the NYSE © GE Vernova

On April 2, GE Aerospace soared into independence as a publicly traded entity, marking a significant milestone in the evolution of flight after the completion of the GE Vernova spin-off. Trading under the ticker "GE" on the New York Stock Exchange (NYSE), GE Aerospace charts a course towards innovation and excellence. H. Lawrence Culp Jr., Chairman and CEO of GE Aerospace, remarked, "Today signifies the culmination of years of transformative efforts, as we finalise the emergence of three distinct, publicly traded companies within GE. I commend our

team for their unwavering commitment and resilience, bringing us to this historic juncture." He added, "With a rich heritage of innovation spanning a century, GE Aerospace embarks on its journey with a robust financial position and a clear vision to shape the future of aviation, prioritising safety and efficiency. Powered by FLIGHT DECK, our cutting-edge operational model, I am confident in our ability to unlock our full potential for the benefit of our customers, workforce and shareholders." Boasting an extensive global presence, GE Aerospace commands a formidable

market position with approximately 44,000 commercial engines and 26,000 military and defence engines worldwide. In 2023 alone, the company reported an adjusted revenue of approximately US\$32 billion, with services contributing to 70% of its earnings, underscored by the robust economics of the engine aftermarket. During its Investor Day held in March, GE Aerospace reaffirmed its 2024 guidance and outlined a compelling long-term financial outlook, targeting an operating profit of ~US\$10 billion by 2028. Furthermore, the company outlined its capital allocation strategy, aiming to fuel growth and innovation while delivering substantial returns to shareholders, with approximately 70-75% of available funds earmarked for this purpose. The launch of GE Aerospace symbolises the culmination of GE's extensive financial and operational restructuring efforts. Over recent years, the company has executed a series of measures to fortify its business, including a significant reduction of over US\$100 billion in debt since 2018. Concurrently, GE has embraced lean principles and a culture of continuous improvement, fostering a robust foundation that facilitated the successful establishment of three independent entities – GE Healthcare, GE Vernova and now GE Aerospace – all poised to carry forward GE's rich legacy of innovation into the future.

AAR and TRIUMPH forge exclusive distribution deal

AAR Corp. and TRIUMPH have inked an exclusive, multi-year commercial distribution agreement, set to commence in January 2026. Under this partnership, AAR will be the sole distributor of TRIUMPH's extensive commercial actuation product line, featuring over 100 top-level assemblies and their subcomponents for Boeing and Airbus commercial platforms. Leveraging its global distribution network, AAR will cater to commercial airlines and MRO customers worldwide. This OEM distribution collaboration enhances AAR's existing product range and clientele, while TRIUMPH gains from AAR's efficient inventory delivery services and strong global sales force.

Frank Landrio, AAR's Senior Vice President of Distribution, commented, "This partnership broadens AAR's commercial aftermarket offerings on key Boeing and Airbus platforms. We eagerly anticipate integrating this product line into the AAR portfolio, leveraging TRIUMPH's renowned quality." TRIUMPH, headquartered in Radnor, Pennsylvania, designs, develops, manufactures, repairs and overhauls a broad portfolio of aerospace and defence systems and components. The company serves the global aviation industry, including original equipment manufacturers and the full spectrum of military and commercial aircraft operators.

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Highlights From the MRO Americas 2024

Ascent Aviation Services invests US\$55 million into additional hangars

Ascent Aviation Services has broken ground at Pinal Air Park in Marana, Arizona, on two new wide-body aircraft hangars to establish a North American conversion site to carry out passenger-to-freighter conversions and heavy maintenance. This expansion increases the Marana operation hangar capacity by 180,000 ft² along with an additional 60,000 ft² of storage and shop space. Upon completion of this hangar development, the Marana operation will convert two lines of Boeing B777-300ER aircraft for Israel Aerospace Industries (IAI).

With an estimated capital investment of US\$55 million the site will provide more than 300 new aviation jobs, allowing Ascent Aviation Services to expand its service offerings to the world-wide aviation industry and bring lasting growth to the local aviation community.

Arizona Gov. Katie Hobbs joined executives from Ascent Aviation Services, local, county, and state dignitaries in attendance in providing remarks focused on the commitment to Southern Arizona aviation growth and economic development. David Querio, President and



Ascent Aviation Services ground-breaking ceremony

© Ascent Aviation Services

CEO of Ascent Aviation Services stated: "The construction of these two hangars reflects our long-standing commitment to grow our footprint in Southern Arizona and to provide long standing stability to all of our team members. With our long-term partnership with the world's leader in passenger-to-freighter modifications, Israel Aerospace Industries, Ascent continues to execute on our aggressive and methodical expansion of capabilities

for our global network of customers."

"For more than forty years, Ascent has maintained a strong and continuous presence in our state – bolstering our robust aviation industry and bringing hundreds of jobs to the region," said Governor Katie Hobbs. "Today's announcement is the beginning of what is sure to be another forty years of partnership, collaboration and innovation that will move our state and country forward. Not only will this expansion grow Ascent's existing Arizona footprint, it represents a US\$50 million capital investment into this community and will create more than three hundred new, good-paying jobs."

“The construction of these two hangars reflects our long-standing commitment to grow our footprint in Southern Arizona.”

David Querio, President and CEO of Ascent Aviation Services

VAS Aero Services and SR Technics extend PW4000 partnership

VAS Aero Services and SR Technics have announced the extension of their collaborative supply programme agreement for PW4000-100" engine maintenance operations. This extension further cements the strong working relationship between the two industry leaders, ensuring top-tier engine quality and material availability.

The comprehensive agreement encompasses various facets including programme coordination, engine lease pool management, engine dismantlement, parts positioning, repair management, and fulfilment services. By leveraging this partnership, SR Technics based in Switzerland can continue to deliver industry-leading, timely maintenance services on PW4000-100" engines to its airline customers, while also offering a reduced cost of ownership through the



VAS CEO Tommy Hughes and Fritz Beiner, SVP Procurement at SR Technics

© VAS Aero Services

utilisation of used serviceable materials.

Under the extended agreement, VAS Aero Services will strategically position engines at SR Technics' facilities for teardown and whole asset leasing, enhancing operational

efficiency and facilitating streamlined maintenance processes.

"The extension of this agreement confirms the value both companies create by working together to improve



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“VAS has enjoyed a close aftermarket material supply relationship with SR Technics for nearly 15 years.”

Tommy Hughes, CEO VAS Aero Services

PW4000-100” maintenance and supply for the benefit of aircraft owners and operators around the globe. We are delighted to expand our long-standing relationship with VAS,” said Fritz Beiner, SVP Procurement at SR Technics.

This cooperative arrangement ensures

the availability of spare engines to SR Technics’ customers during maintenance periods, along with maintaining a minimum stock level of serviceable spare parts, thereby enabling cost-effective material management and expedited service for SR Technics’ clientele.

“VAS has enjoyed a close aftermarket material supply relationship with SR Technics for nearly 15 years, and we are excited to take this program to the next level,” said VAS CEO Tommy Hughes. “We continue to invest heavily in assets, such as A330 aircraft being retired by American Airlines, to support this valuable partnership. The result is a unique working relationship that permits us to anticipate SR Technics’ needs and respond quickly to market demands.”

StandardAero’s DFW centre boosts CFM56-7B engine support, expands services

StandardAero’s Dallas/Fort Worth (DFW) hub, situated at Dallas/Fort Worth International Airport, TX, is intensifying its backing for the CFM56-7B turbofan engine, marking a milestone with its inaugural

customer engine shop visit earlier this spring. Since its inauguration last year, the DFW-based CFM56-7B service centre has welcomed over a dozen engines for diverse work scopes, now advancing to furnish comprehensive maintenance, repair and overhaul (MRO) services catering to operators worldwide.

Presently, StandardAero’s DFW-based CFM56-7B service centre extends an array of quick turn shop visit (QTSV) services including borescope inspections, boroblend repairs, engine module replacements and QEC/LRU installations, alongside fan, top case, bottom case, hot section and LPT repairs. Augmenting its capabilities,



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- LEAP-1B
- GTCP36
- JT15D
- PT6A
- PW100
- PW150A
- PW901
- RB211-535
- RE220

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“We are committed to enhancing our offerings in the upcoming year.”

Adam Gingras, General Manager – CFM56, DFW for StandardAero

the DFW facility boasts full test cell functionalities for the popular CFM56-7B powerplant at its modern six-cell DFW test complex, facilitating functional and performance engine testing for Boeing 737NG operators and other CFM56-7B asset owners.

Adam Gingras, General Manager – CFM56, DFW for StandardAero, expressed, “StandardAero is delighted to furnish our customers with the convenience of DFW-based CFM56-7B service centre capabilities, and we are committed to enhancing our offerings in the upcoming year.” To meet escalating customer demand, the company plans to relocate to a new 147,000 ft² facility adjacent to the DFW test complex this summer, aiming to introduce full performance restoration shop visit (PRSV) capabilities by year-end. StandardAero holds CFM International general support license agreement (GSLA) approval for the CFM56-7B, with the DFW centre incorporating the engine into its

FAA Part 145 Repair Station operations specifications since early 2023. Additionally, StandardAero delivers a comprehensive range of MRO services for the CFM56-7B from its CFM- and GE Aerospace-approved facility in Winnipeg, MB, Canada, initially commencing engine support as a GE designated fulfilment centre (DFC) in 2009. Moreover, StandardAero offers a broad spectrum of supplementary services for the CFM56 family, encompassing component repair and overhaul through StandardAero Component Services (SACS), engine, module and used serviceable material

(USM) asset management support through PTS Aviation, and engine health monitoring (EHM) data analysis services.

Expanding its support repertoire, StandardAero also provides services for the CFM International LEAP-1A and LEAP-1B engines from its expansive 810,000 ft² facility in San Antonio, TX, as a CFM branded service agreement (CBSA) provider. Recently, the company introduced continued time engine maintenance (CTEM) work scope service offerings, with plans for engine test and full PRSV capabilities slated for later this year.



CFM56-7B engine inspection

© StandardAero

Vallair completes advanced aerostructure repair facility in Châteauroux, France

Vallair has finalised the construction of its fully integrated aerostructure repair, engine teardown, and component repair facility in Châteauroux, France. This consolidation of capabilities not only enhances efficiency but also offers airlines and lessors a cost-effective solution to prolong the lifecycle of large components that might otherwise be discarded due to logistical challenges associated with transportation for repair.

The company is witnessing a surge in repairs for nacelles and flight control

parts, with customers increasingly favouring Vallair's responsive team. François Biarneix, Operations Director in Châteauroux, attributes this trend to the streamlined decision-making process at Vallair and the extensive expertise of its technical team. “Many customers seek our specific aerostructure proficiency, but we also handle a significant amount of ad hoc work for aircraft undergoing C-check maintenance,” says Biarneix. “Our integrated services significantly reduce turnaround times. If a component like a fan cowl requires repair, we can swiftly provide a quote and commence the repair process without delay.” Biarneix underscores the influence of several factors shaping the

global aerostructure repair services market, including the aviation sector's growth and the aging commercial aircraft fleets. Vallair is aligning its facility and development program to address challenges such as skill shortages, rapid turnaround times, and the complexities of repairing newer composite materials. The company operates its own Part 147 EASA approved training centre, Aircraft Academy, on site in Châteauroux, focusing on training the next generation of technicians and engineers across a wide spectrum of aircraft and engine types. The aerostructure repair services industry plays a critical role in maintaining the safety and efficiency of the global aviation fleet. Vallair's MRO activities encompass



Vallair shop

© Vallair

conditions, offers significant efficiency gains. The company provides a range of integrated services complementing the teardown process, including cleaning, inspection, analysis, photography, packing, and storage of dismantled parts. These efficiencies also extend to Vallair's new engine shop capabilities, covering CFM56 and V2500 series engines. Services include disassembly and reassembly of modules, minor repairs and inspections, borescope inspections, preservation, leasing of engines, APUs, and engine bays. Borescope capability will soon expand to include Trent 700, PW 4000, CF6-80, Leap, and PW1100 engines.

structure inspection and repair, composites inspection and repair, and painting for nacelles, flight controls, and cabin parts. Looking forward, Vallair is poised for further expansion and innovation, including the integration of digital technologies for training and repair guidance. Biarneix highlights Vallair's unique advantage of

having aerostructures and engine shops adjacent to its extensive maintenance facility in Châteauroux, capable of accommodating multiple wide-body and narrow-body aircraft concurrently. Moreover, Vallair's capability to undertake aircraft and engine dismantling activities within its hangars, regardless of weather

“ Our integrated services significantly reduce turnaround times. ”

*François Biarneix,
Operations Director in
Châteauroux, Vallair*

Rhinestahl acquires HYDRO Systems

Rhinestahl Corporation has unveiled its strategic move to acquire HYDRO Systems KG, a development set to strengthen the company's aviation support equipment and services position. The announcement was made during a presentation at Aviation Week Network's MRO Americas event in Chicago by Dieter Moeller, CEO and President of Rhinestahl, and Thomas Elsner, CEO of HYDRO.

The amalgamation of these two entities will birth RH Aero Systems, positioned to emerge as the foremost entity in offering comprehensive life cycle solutions. This encompasses a wide array of offerings

including engine and airframe tooling, ground support equipment, innovative engineered products and services, alongside asset management and sustainment.

“When you take Rhinestahl which is #1 in GE and CFM OEM-approved engine tooling, customer responsiveness, large shop experience and onsite technical support and combine it with HYDRO which is #1 in Rolls-Royce OEM-approved engine tooling, innovative engineered products, Airbus and Boeing airframe tooling, precision manufacturing expertise and global support services, you are creating the world-class leader uniquely positioned to serve the growing demands of OEMs, MROs and Operators around the world,”

stated Thomas Elsner, CEO of HYDRO. “The synergies between these two industry leaders will fundamentally shift what the market can expect from a one-stop-shop solution provider.”

“Previously, when you assessed the tooling and GSE market, there were a handful of significant players. But now, in combining Rhinestahl and HYDRO, the two largest and most comprehensive industry leaders, along with the synergies that will be available to all our customers by leveraging the two business's complimentary expertise, competencies, and resources, game changing value will be created for our customers. These synergies are holistic, providing new and upgraded support and services where the sum is so much greater than the simple sum of the two parts,” stated Dieter Moeller, CEO and President of Rhinestahl. “With OEM leading positions, shared passions in innovation, strong commitments to high-quality and responsive support, plus proven technical execution competence across the support

“ I am excited to see how these two industry leading teams will work together. ”

Dieter Moeller, CEO and President of Rhinestahl

equipment and services lifecycle, I am excited to see how these two industry leading teams will work together to redefine and set new industry standards of customer and industry support."

As the two companies integrate, RH Aero Systems will continue working through its strong operating businesses of Rhinestahl and HYDRO. Customers of both Rhinestahl and HYDRO will continue

conducting business, without interruption, working with their current teams, yet will immediately have access to the full scope of the synergies provided by the combined businesses. RH Aero Systems' global headquarters will be in Mason, Ohio, U.S.A., while Rhinestahl and HYDRO's headquarters will remain in the U.S.A. and Germany, respectively. As privately held companies, the financial terms of the

transaction were not disclosed.

HYDRO's business areas include ground support equipment, airframe and engine tooling, engine transportation, engineered solutions, as well as service. In addition to the headquarters in Biberach (Germany), HYDRO has worldwide subsidiaries, service centres and sales locations in China, France, Germany, Singapore, UAE, UK and the U.S.A.

AFI KLM E&M partners with Hawaiian Airlines for component support

Air France Industries KLM Engineering & Maintenance (AFI KLM E&M), has announced a partnership with Hawaiian Airlines. This collaboration signifies the commencement of a ten-year term contract, with a provision for a two-year extension, encompassing comprehensive component support for Hawaiian Airlines' newly acquired Boeing 787-9 fleet. The agreement between AFI KLM E&M and Hawaiian Airlines underscores the commitment to delivering exceptional service and support. Within this strategic alliance, AFI KLM E&M will provide repair and pooling support for

“ They understand our goal to deliver safe and reliable aircraft. ”

Jim Landers, Senior Vice President of Technical Operations at Hawaiian Airlines

Hawaiian Airlines' twelve 787-9 aircraft, leveraging its extensive global network. Additionally, Hawaiian Airlines will benefit from AFI KLM E&M's cutting-edge solution PROGNOS®, predictive maintenance for aircraft, aimed at enhancing operational efficiency and aircraft reliability.

"We are thrilled to partner with AFI KLM E&M as our strategic 787 component

support provider and join their large network of 787 customers," expressed Jim Landers, Senior Vice President of Technical Operations at Hawaiian Airlines. "As a 787 operator themselves, they understand our goal to deliver safe and reliable aircraft to Hawaiian's network for on-time departures. We look forward to them exceeding our expectations."

Kellstrom Aerospace named commercial aftermarket distributor for LBM

Kellstrom Aerospace has been appointed as the worldwide commercial aftermarket distributor for LBM (Libellule Monde Inc.). LBM specialises in commercial aircraft interior placards, interior deco films, exterior markings, erosion protection and

livery for a variety of commercial aircraft, including those from Airbus, Boeing, ATR, Beechcraft, DeHavilland, Embraer and MHIrj. This commercial aftermarket partnership enables Kellstrom Aerospace to deliver high-quality OEM products and engineered solutions to major global and regional passenger and cargo carriers, as well as MRO customers, through Libellule Monde's complete portfolio.

"Partnering with Kellstrom Aerospace marks a significant milestone for LBM as we extend our global reach to provide innovative solutions for the aviation industry. This collaboration underscores our commitment to delivering excellence in aircraft interior and exterior surfacing solutions," said Stéphanie Lemieux, Founder, and CEO of LBM. "We are delighted to announce our aftermarket distribution channel partnership with LBM (Libellule Monde Inc.) to distribute the truly unique and value-added products and solutions they offer to Kellstrom's global customer base," said Daniel Adamski, Executive Vice President - Distribution at Kellstrom Aerospace. Established in 1993, LBM (Libellule Monde Inc.) is a women-

“ We are delighted to announce our aftermarket distribution channel partnership with LBM. ”

Daniel Adamski, Executive Vice President - Distribution at Kellstrom Aerospace

owned business that initially operated in the commercial sector. In 1995, it narrowed its focus, exclusively collaborating with the aerospace industry thereafter.

LBM has since collaborated with multiple airlines and aircraft OEMs

around the world, delivering high-quality products in innovative ways to its customers. Today, LBM is a design approval organisation (DAO) and holder of a variety of supplemental type certificates (STCs) approved by Transport Canada and

validated by both the FAA and EASA. This enables LBM to manufacture and certify placards, markings and aircraft livery, as well as offer many other related products and engineering services for aircraft interiors and exteriors.

Joramco awarded maintenance contract from LATAM Airlines

Joramco, an independent commercial aircraft maintenance, repair and overhaul (MRO) facility, has been awarded a contract to conduct heavy maintenance for LATAM Airlines, the largest airline in Latin America. The agreement was announced during MRO Americas 2024. Under the terms of the contract, Joramco will perform C-checks on three of LATAM's B787 aircraft, starting in July of this year.

“ We are thrilled to expand our customer base further into Latin America. ”

Fraser Currie, Chief Executive Officer of Joramco

Fraser Currie, Chief Executive Officer of Joramco, expressed his satisfaction with the new partnership, stating, “We are thrilled to expand our customer base further into Latin America. Our agreement with LATAM Airlines not only underscores

our commitment to delivering excellence but also reinforces our position as a globally trusted MRO provider. We eagerly anticipate additional fruitful collaborations in the future.”

Liebherr Aerospace partners with LHColus to enter air cargo market

Liebherr Aerospace Saline (Liebherr), Michigan (U.S.A.) and LHColus Tecnologia, based in São José dos Campos (Brazil), have signed an agreement that declares Liebherr-Aerospace Saline as the exclusive international distributor of the quick conversion passenger-to-freighter cargo aircraft solution – also known as Class F Quick Change – developed and certified by LHColus. Liebherr will be responsible for the global distribution (excluding Brazil) through its worldwide customer services network, providing sales and technical support.

“We are excited about our entry into the booming air cargo market and the possibility to bring to our customers such an easy, fully reversible and cost-effective

solution,” commented Alex Vlieland, Chief Customer Officer of Liebherr-Aerospace & Transportation SAS.

“We are very happy about this agreement with Liebherr, a leading global OEM that has shown keen interest in our cargo conversion kit, contemplating its distribution worldwide as well as looking forward to developing this project for other aircraft models like the Airbus A320 and Boeing’s 737. This partnership will surely enhance our market reach and enable us to offer cost-effective cargo conversion solutions on a global scale,” explained Luís Henrique Colus, LHColus Executive Director.

Flávio Costa, Technical Vice-President of Azul added: “We are the first company in the world to have installed this system. In our fleet, we have converted five Embraer E-Jets E1 with the Class F Quick Change solution and we are very excited about the agility and versatility that this change has

given us. It is a constant improvement that allows us to serve our customers better.”

The Class F Quick Change is implemented by the means of a simple, fast and fully reversible modification on the aircraft. Its efficiency and reliability have been field proven with a sizeable fleet operating for over two years in Latin America that has already accumulated more than 18,000 flight-hours and transported over 15.3 million (e-commerce) packages equivalent to 33.3-thousand tonnes of payload. The solution is currently certified for Embraer E190 aircraft but can be extended to other single- aisle aircraft types.

In a simplified approach, the conversion requires the removal of all main cabin seats to make room for aluminium frames and independent fire-proof and smoke-contained cargo nets. The cargo is monitored by two fully independent IR cameras, which are designed to detect any heat sources, alerting the pilots in the cockpit. The system also features a smoke barrier to isolate the main cabin from the front galley/cockpit area (a mandatory requirement) and cargo placards, which are used to indicate the maximum load height.

“ We are excited about our entry into the booming air cargo market. ”

Alex Vlieland, CCO of Liebherr-Aerospace & Transportation



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Fokker Services Americas and Collins Aerospace sign FlightSense® On-Site Support agreement

Fokker Services Americas, a subsidiary of Fokker Services Group (FSG) and Collins Aerospace have signed a FlightSense® On-Site Support agreement for Collins' integrated drive generators (IDGs). The agreement puts both companies on a path forward to meet the increasing demand for IDG repairs closer to home and provide American operators with a high-quality, dependable, domestically available option. With the signing of this agreement during

the MRO Americas 2024 event in Chicago, FSG paves the way for the implementation of IDG repair capabilities at its MRO centre in LaGrange, Georgia, USA. FSG will provide installation and repair services for serviceable IDG units, ensuring uncompromising quality and maximising confidence. Additionally, the company will expand its inventory of Collins IDG components, offering a significant advantage to airline and operator customers. Furthermore, the establishment of FSG's IDG shop in America marks the creation of a second IDG repair facility within FSG globally.

This expansion follows the original IDG repair shop at Schiphol Airport, the

Netherlands, which obtained certification from Collins in 2020. The addition of a second repair shop enhances redundancy and augments capacity for FSG's customers, ultimately leading to reduced turnaround times, minimised downtime, and a heightened focus on keeping components within the region. The IDG repair capability expansion in the Americas initially focuses on repair and overhaul of Boeing 747, 757, and 767 aircraft, but the company aims to expand its capabilities to multiple other platforms, including additional Boeing, Airbus, and Fokker platforms, in a short period. "By converting power from the engine into electric power for the aircraft, Collins integrated drive generators perform a critical role," said Ryan Hudson, Vice President, Power and Controls Aftermarket for Collins. "This agreement will expand Collins IDG MRO services to Fokker customers in the US, providing them with reliable parts and services to help keep their planes in the air."

“This agreement will expand Collins IDG MRO services to Fokker.”

Ryan Hudson, Vice President, Power and Controls Aftermarket of Collins

AAR expands distribution agreement with Sumitomo Precision Products

AAR Corp. has announced an extension and expansion of its V2500 engine component distribution agreement with Sumitomo Precision Products. Under this agreement, AAR has extended its exclusive

distribution rights for the V2500 pneumatic starter and starter control valve on behalf of SPP for the duration of the programme. Additionally, the contract expands AAR's exclusive distributorship to encompass all V2500 starter/valve subcomponents. Kenro Itakura, Executive Vice President and GM of Aerospace Division, said, "This partnership

allows us to better cater to V2500 operators and repair facilities by offering reduced lead times, round-the-clock AOG support, and stocking locations worldwide. AAR has been a trusted ally to Sumitomo Precision Products since 2017, and we are delighted to extend our distribution relationship through this agreement."

Barfield becomes primary distributor for CTRL Systems' UL101 Aviation Troubleshooter

Barfield, a subsidiary of Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) in the Americas, has entered into an agreement with CTRL Systems to distribute its UL101 Aviation Troubleshooter. Barfield will serve as CTRL Systems' primary distributor to the commercial and business aviation markets, covering airline operators, aircraft and component OEMs, and MROs worldwide. The UL101 Aviation Troubleshooter is an

acoustic ultrasonic test set engineered for aircraft maintenance and troubleshooting. Manufactured in the United States by CTRL Systems, the UL101 Aviation Troubleshooter equips aircraft maintenance technicians with enhanced insight into the operating conditions of the aircraft systems under examination.

Operators worldwide have utilised the UL101 Aviation Troubleshooter to expedite the AOG troubleshooting process effectively, reducing both aircraft downtime and the expense of replacement parts. The UL101 Aviation Troubleshooter (part number B00033) is specified in the Boeing AMM for all commercial jet aircraft under

the tool tag SPL-1473. CTRL's ultrasonic listening devices, including the UL101 Aviation Troubleshooter, detect acoustic ultrasound at 40kHz and convert the signal into the audible range, delivering it to an included headset or available software. In the field of aircraft maintenance, this technology is employed to pinpoint leaks in various aircraft systems, such as cabin pressurization, O2 systems, pitot/static systems, bleed/engine air systems, and A/C packs. It is also utilised for identifying electrical faults and intermittent wiring issues, troubleshooting failing mechanical components, detecting internal fluid leaks, and conducting swift valve inspections.

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FEAM Aero – A True Two Guys in a Truck Success Story

Talking at the MRO Americas to Fred Murphy, CEO of FEAM Aero

By Peter Jorssen

AviTrader MRO: FEAM Aero has been around for over 30 years. What was the company like back in the '90s? How did it get started?

Fred Murphy: It was a really small company in the '90s. I was one of the founders. I had a partner at that time, and it was literally, as my son likes to refer to it, the two guys in a truck story. And that is a true story. And it just, you know, we were providing good quality line maintenance that the airlines didn't really have the capacity or the desire to do. And we found a niche and we just kind of filled it and here we are.

Is your focus more on line maintenance or base maintenance?

It's still primarily line maintenance, although it's starting to bring on an element of more base-type maintenance, heavier stuff, gear changes, and major structural repairs and modifications. We're starting to see a bigger portion of it become base maintenance.

You've now expanded out for a US\$45 million project in the Cincinnati, Kentucky region. Where do you see base maintenance will be in the North American market?

I think there's a huge amount of capacity shortfall in base and different modifications and so forth in the U.S. market. And we're hoping to fill in with that. There's a very large fleet at the Cincinnati CVG

Northern Kentucky Airport from Amazon and from DHL, and we're seeing an opportunity to help keep that work right there and not have to go elsewhere to get it done. That's what we're trying to fill.

With the lower labour costs in South America, how do you see what the competition is like with the labour costs comparing them between North America and South America?

I don't see it as such because I think even in South America the rates are rising down there as well. I think we're starting to see overall, you know, worldwide that the shortage of technicians is starting to affect everybody. And I think, frankly, South

America and Central America are pretty much at capacity themselves, so their opportunities to take on additional work seem to be pretty limited.

Are most of your customers coming from the North American market or is it more of a global market for your company?

It's still mostly a North American market, although we do have some foreign clients. I'm doing a lot of work for different foreign carriers. For example, Cargo Jet now is a Canadian company that's doing a lot of work for Amazon flying airplanes, so we're seeing them operate in the States. Those are good examples.



Fred Murphy, CEO of FEAM Aero and AviTrader's Peter Jorssen

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Engines and Diverse Workforce Composition

Talking to Caroline Vandedrinc, SVP Business Development at SR Technics

By Peter Jorssen

AviTrader MRO: SR Technics recently inducted its 5,500th engine into the engine shop in Zurich. You also started to build an additional test cell. Is Engine maintenance the most important element of your anticipated business growth?

Caroline Vandedrinc: Well, thank you for the question. The last two years have been a transformation of our company. As you know, COVID happened, and we really had to take a step back and look at what the future of this company was and how can we survive. And the result is the focus on engine maintenance. As you may have read over the last couple of years, we exited the component business and now engine maintenance is 85 – 90 percent of our business. Not just the mainline business is very exciting, which is our bread and butter, but also getting into the GTF and the LEAP. So back in April 2022, we signed an agreement to be part of the network of Pratt & Whitney IAE on the GTF PW1100. And then we also have contracts with another OEM for the LEAP 1A and LEAP 1B. So exciting, especially for our employees. They can see the main line. We have natural growth because the CFM engine shop visits are increasing. But they also see a future of new products that they can be part of as that grows. 5,500, yes, between being part of an airline many, many years ago and being

independent for the last 19 years. It's exciting to have 5,500 engine shop visits under our belt. We are going to double the business in the next five years. So we'll talk again in five years and see how many engines we have done by then.

What engine types do you currently have in your portfolio?

We have the CFM56-7B and CFM56-5B as well as the PW4000, both the 94 inch and the 100 inch. So that's the main line. Plus the GTF PW1100 and the LEAP 1A and 1B. With regards to the test cell, we had one test cell for our main line, and in order to be effective for the additional business, we are restoring a test cell and construction will be finished by the end of the summer, and then the calibration and testing goes through to the end of the year, so we'll be able to do the CFM, GTF, and LEAP in the new test cell.

“We will be part of the CFM overhaul business for many years.”

With the LEAP and PW1100G, you have the latest-generation types in your portfolio. How important are the mature engine types like the CFMs and PW4000 engines to your company?

What we call the main line, the CFM business as well as the PW4000, they're very important. And when we constructed the buildings for the new engines, the GTF and the LEAP, we put them in different buildings with different teams, different management, so that we don't impact the main line. Because if you look at the CFM forecast, there will be many, many more CFM shop visits. They haven't reached their peak yet. We will be part of the CFM overhaul business for many years, probably even decades to come, even with the PW4000. We have long-term customers. We plan to be in the PW4000 business for many years to come as well. So, yes, we are focused on both, on two different teams, two different buildings, two different test sets.

SR Technics just launched “WOW”, which is “Women on Wings.” Can you explain a little bit further what that initiative is all about?

We've always been focused on diversity and promoting women, interviewing our technicians. There was an interview several months ago with a lady that was an apprentice who went on to become a mechanic. We always



Caroline Vandedrinc,
SVP Business Development at SR Technics

“It's exciting to have 5,500 engine shop visits under our belt.”

had that mindset, but it was never a formal program. So, in December last year, I was standing in our lobby giving out the traditional Swiss bakery "Grittibänz". And I'm standing there with an HR lady and our deputy CFO Jessy who's also a lady and you get all these men coming for their gift and then all of a sudden it was like three, four women in the technical department floated by. I was so excited to see these technicians who were ladies and because I'm in meetings and meetings with customers I don't necessarily spend a lot of time on the shop floor so I don't see the ratio of ladies to gentlemen on the shop floor. I was happy to see them. I was talking to them and how we can connect so that's when "WOW" came into my mind and then I talked to a few of my female colleagues. I'm like, okay, what can we do? And why do we want to do this? Not just because I want to talk to ladies on the shop floor, I can just walk down. So, we formed a little steering committee and said, okay, what do we want to get out of it, and what do we want to give as a formal program?

On International Women's Day on March 8th, we launched "WOW". It's to connect, inspire and lead. It's really to give a platform for ladies to have a voice, to say this is what I want in a company, these are my expectations. We can retain them, but also for the future attract them. Word of mouth, going to their girlfriends or their daughters or sisters to say, hey, aviation is wonderful, SR Technics is an employer of choice. And it's an environment where they listen to me. It's where my voice is being heard, no matter what level in the company you are at.

Initiatives like this in big companies exist already. We're a relatively small



SR Technics engine shop in Zurich
© SR Technics

company. We want to make sure that those ladies have a voice. Mentorships, it will be bench-marking with all the companies, it will be guest speakers. Our first official launch with all the ladies in the company present will be April 29th in Zurich. And there is an agenda for the meeting of course, but for future meetings I don't have an agenda yet because I want to hear from them what their expectations are. How can we fulfill their requirements.

I think it's great that you're providing a platform to give the women, the ladies a voice. Now in addition to that, are you having problems filling vacant positions? Is that part of the reason why you came up with WOW?

It was not the reason we came up with WOW, but it will be a benefit because we want to be an employer of choice. We want to attract ladies because the business case for a diverse workers' composition is there. I mean, it's not just women. It's all races, all genders. A diverse workforce brings more value. Everybody has different ideas, comes from different perspectives, and adds

value and colour to a discussion. If we all think alike and look alike, then you only have one solution.

Right now, I believe, correct me if I'm wrong, there's about 20% of senior management positions filled by women. Overall in the total company, what percentage would women be?

It's a little lower. It's about 18% if you take the whole company.

Do you have a vision about the future workforce at SR Technics?

My vision for the workforce at SR Technics is to be diverse. As I said, there's a business case for having a diverse workforce. Also, in the past, we would look at Switzerland as our mainstay for finding employees, we used to look at Germany and France and Italy because they're close by. Now we go much further. The growth that we're seeing where we need to hire 400 people for the new engine line and we need to look at a hundred-ish new employees for the main line, we need to have a bigger area to cover.

“If we all think alike and look alike, then you only have one solution. ”



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“The Crown Jewel is our Maintenance”

Talking to Ed Koharik, Chief Operating Offices at ATSG

By Peter Jorssen

AviTrader MRO: ATSG is a large leasing company focusing on freighters. Currently, how many aircraft do you have in your portfolio?

Ed Koharik: We have 137, some of those are passenger aircraft, and we have several aircraft in conversion at this time. As we continue to grow our fleet, that number will increase as the lines continue and complete their deliveries.

“But the crown jewel in the organization is our maintenance.”

Not only is ATSG a leasing company, what else do you have in your portfolio?

We have quite a few services, service capabilities in the organization. We start with the leasing company, so we call it lease plus, where we can provide the aircraft, as we talked about, acquire an older passenger aircraft and then convert it to a freighter, provide that to one of our customers. If they're not able to operate the aircraft initially, we

can actually provide crews to operate with one of our three airlines. We have three airlines in the portfolio, two cargo airlines, and Omni Air International is our passenger charter service.

But the crown jewel in the organization is our maintenance. We have two large facilities, one in Wilmington, Ohio, and one in Tampa International. We are able to provide all the services that are required for a customer to operate one of our freighter converters.

That sounds like some really interesting synergies you have there. ATSG converts passenger aircraft to freighters. Does APSG perform the conversion on behalf of other airlines and other leasing companies?

Primarily, our customers are other airlines. We operate many of those converted freighters on behalf of some of our larger customers with Amazon and DHL. We also operate some of them for the Department of Defense, as we also operate our charter aircraft for the Department of Defense. But when it comes to those conversions, most of our customers are other airlines as they're trying to expand their business with this focus on e-commerce that



Ed Koharik, COO at ATSG

we're seeing and the continued growth in the e-commerce market. There are a lot of companies out there that are trying to add capacity.

What other maintenance services do you provide?

We provide both heavy and line maintenance. As I mentioned, the majority of our focus is on our heavy maintenance. We have over 50 maintenance, line maintenance stations around the country, actually around the world for our three airlines and on occasion we will provide line maintenance to other airlines if it's required. But the focus is on our heavy maintenance for those two large facilities I mentioned, one in Wilmington, Ohio, one in Tampa International. We have about 11 lines of heavy maintenance. We also do some of our own conversion work in-house. So a big focus there, a lot of technicians on the team, and they do a great job when it comes to those heavy checks.

Ed Koharik and Peter Jorssen at the MRO Americas





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Exploring New Trends in MRO Software

How IT is changing the industry landscape

By David Dundas

The operational landscape in the MRO sector of the aviation industry is in the process of undergoing the greatest transformation since the need for MRO services became apparent. While digitalisation of virtually all elements of MRO record keeping has streamlined operations and greatly increased efficiency, what was seen originally as a 'game-changer' has now simply become another cog in the mechanism of transformation. Other elements have helped reduce costs and provide greater assurance of regulatory compliance. Cloud computing and storage now sees SaaS software solutions as viable options, while Artificial Intelligence when combined with the IoT can help considerably where predictive maintenance is concerned. Blockchain technology has been successfully adopted for supply chain management.

We wanted to delve deeper into how MRO businesses were being affected

by new trends in MRO software, so we decided to approach several of the industry leaders in this market segment to get their opinion on what is happening not just today, but what the future will also hold as far as MRO-targeted software development is concerned.

An overall view of the trends being observed in current MRO software

Jonathan Berger, Managing Director at Alton Aviation Consultancy is keen to point out how MRO software has helped to mitigate against a skilled labour shortage. "As global airlines continue to retire their older fleets and replace with new-generation aircraft, they are finding that their legacy MRO IT systems no longer have the requisite capabilities to effectively manage the much more technologically advanced, complex configuration management and data platforms required. In addition, given the

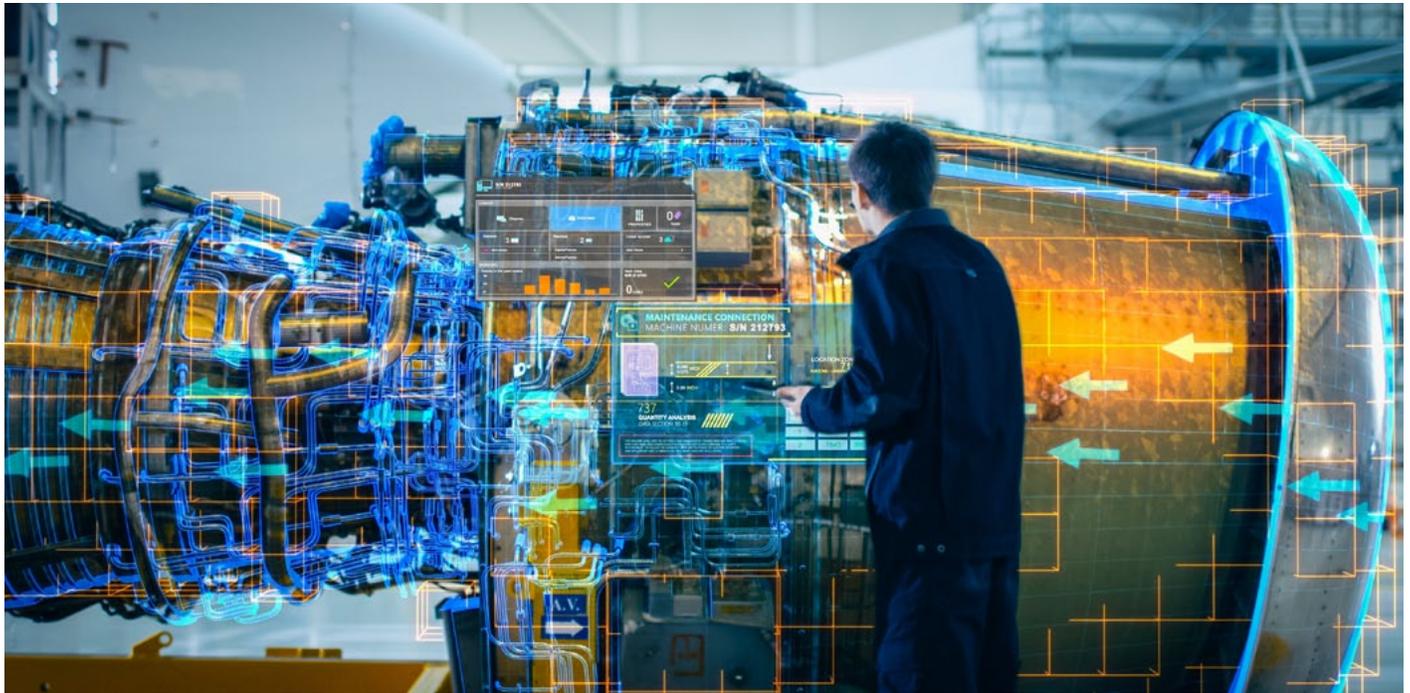


Jonathan Berger, Managing Director,
Alton Aviation Consultancy

“ Enhance labour productivity, drive operational efficiency, and candidly, do more with less staff. ”

Jonathan Berger, Managing Director at Alton Aviation Consultancy

skilled labour shortage throughout the entire aviation ecosystem, airlines and MROs are continually seeking ways to leverage technology and MRO software solutions as a key pillar of their respective holistic strategy to address the labour shortage, enhance labour productivity, drive operational efficiency, and candidly, do more with less staff.”



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Bernhard Meier, CEO at AMROS Innovations, part of the AMROS Group, sees great emphasis now being placed on mobile applications. “The adoption of cloud-based MRO software solutions is continuing to increase, offering scalability, accessibility, and cost-effectiveness for businesses of all sizes. In the past years, mainly big operators have had the means to implement costly changes. Nowadays, smaller entities are getting involved in these technologies and starting to utilize the efficiencies and process improvements. There might be even a greater emphasis on mobile applications for MRO software, allowing technicians to access critical information, update work orders, and communicate with colleagues while on the go, and reducing the administrative workload of feeding the maintenance planning system with data after the work has been carried out.”

Renata Sumskaite, CEO at SENSUS Aero, part of the Avia Solutions Group, identifies a key shift towards more efficient, technologically advanced maintenance processes. “... big data analytics is becoming indispensable for preventative maintenance, enabling a data-driven approach to optimize parts' usability and efficiency. The advent of digital twins and augmented/mixed reality applications is also noteworthy. Virtual models for simulation and analysis, where crucial

information is overlaid directly onto machinery helps to facilitate maintenance and training. This all-encompassing digital integration with MRO operations highlights a significant shift towards more efficient, technologically advanced maintenance processes, aligning with the industry's evolving needs and demands.”

Remon Sweers, VP of Digitalization at QOCO Systems Ltd. sees augmented reality, among other things, as having a greater role to play in software solutions. “Augmented reality will be used to visualise virtual 3-D models of aeroplanes that are needed during training, thus eliminating the need for expensive physical props and paperwork. Additionally, the support engineers can remotely view the same model, which help facilitate teamwork. Augmented reality is being used in training quite extensively already”

Daniel Tautges, VP Marketing and Sales at Component Control senses that cloud-based solutions, a.k.a. SaaS, seems to be the direction this industry sector is heading in. “Since the pandemic, our industry seems to be shifting towards cloud-based solutions, like our Quantum Private Cloud, enabling greater accessibility and scalability for MRO operations without the IT burden. Additionally, there's a growing emphasis



Remon Sweers, VP MRO digitization, QOCO Systems

“Augmented reality is being used in training quite extensively already.”

Remon Sweers, VP of Digitalization at QOCO Systems

on data analytics and business intelligence tools integrated into our software to drive more informed decision-making processes and to automate data assimilation to better utilize it. Further, with the introduction of AI, we are looking at solving complex problems for operations efficiencies, supply chain and decision making."

How advancements in technology, such as AI and machine learning have been impacting on the development of MRO software

According to Chris Clements Senior Sales Representative at Swiss Aviation Software, the developers of AMOS MRO software, "AI now begins to find its way into AMOS in various features be that in the AMOSeTL or as the power behind Amy, a virtual, innovative companion that will support AMOS users in translating text, guiding them towards their next actions and accessing data from public data sources such as EASA or the FAA. Amy will be seamlessly available in AMOSdesktop, AMOSmobile, Customer Portal and the Swiss-AS corporate website as just the first steps of Amy's journey."

Bernhard Meier sees the benefits of modern MRO software as being able to spot deviations. "AI and ML algorithms can analyse historical maintenance data, equipment failure, data readings, maintenance logs, and other relevant factors to predict when equipment is likely to fail. While humans are only able to review a selected set of data in areas of competence, technological advancements allow continuous monitoring of equipment data and equipment condition. Modern MRO software can thus flag deviations from normal behaviour in a wide range of areas, including technical records up to redelivery conditions, enabling technicians to investigate and address issues promptly and adding real value to the process for improvement."

Daniel Tautges highlights the benefits for predictive maintenance capabilities. "... we are developing advancements in AI and machine learning which are revolutionizing MRO software by enabling predictive maintenance capabilities,

optimizing inventory management and data, as well as streamlining repair processes. These technologies empower our Quantum Control ERP Software to analyse vast amounts of historical and real-time data, predicting potential failures before they occur, thus minimizing aircraft downtime and reducing maintenance costs significantly. We believe AI will be the one of the keys in MRO-ERP optimization evolution."

Renata Sumskaite is aware of both the importance of and hurdles created by R&D when it comes to developing MRO software. "While new technologies are indeed advancing rapidly, their adoption rates remain low due to regulatory challenges, compliance issues, and concerns surrounding data and cybersecurity. Above and beyond these issues lies the simple fact that while AI has a lot of potential, the R&D required remains a costly endeavor. Many businesses still lack the necessary technological infrastructure for adopting, maintaining, and excelling with data-intensive new technologies."

Remon Sweers takes a look from a different perspective. "The adoption of AI and extended automation is another trend: AI-powered software can analyse user behaviour, understand business rules and make decisions based on defined rules. This enables MROs to forecast demand,

optimize resource allocation and make data-driven decisions. For example, it could increase staff utilization and improve fleet availability.

What software features or capabilities are now becoming increasingly important

Renata Sumskaite says that anything related to improving user-friendliness is key here. Anything that touches on making system navigation more intuitive is a real value driver, and one is also talking about automating processes that mitigate human factor risks, and importantly, increase revenue. But that's not all. "Anything that improves the users' learning curve, and aids transparency in process and implementation is also attractive, as is having clear and understandable documentation, a good manual, and overall modularity. Sustainability is a very important component here. After all, if the need for support or maintenance is greater, or outweighs the actual value or business benefit of the system, there is a problem. When looking for solutions, businesses need to ask themselves how scalable and upgradable those solutions are in the future. After all, the worst case is when you buy a solution, only for it to become obsolete within 2-3 years because it is not compatible with the latest advancements. Choosing a provider that is agile and nimble helps."

Remon Sweers was keen to highlight the importance of working in an agile manner due to the dynamic regulatory environment, rapid technological advancements, and complexity of customer environments. "Agile methodologies enable swift adaptation to regulatory changes, incorporation of new technologies, and customization to meet specific operational requirements, ensures



Chris Clements, Senior Sales Representative,
Swiss Aviation Software

“ AI now begins to find its way into AMOS. ”

Chris Clements, Senior Sales Representative at Swiss Aviation Software



Daniel Tautges, VP Marketing and Sales, Component Control

that software remains up to date, efficient, and effective in supporting maintenance operations. By prioritizing flexibility, collaboration, and iterative development together with customers, this agile approach facilitates faster delivery and

“ Mobile accessibility is becoming crucial, allowing technicians to access critical information and perform tasks remotely. ”

Daniel Tautges, VP Marketing and Sales at Component Control

better alignment for the evolving needs of the industry.”

Daniel Tautges highlighted the benefits to communication. “Digitalization is driving the need for enhanced integration capabilities, enabling seamless communication between various systems and stakeholders across the aviation aftermarket supply chain. With Airlines now accepting e-8130’s, even on a limited basis, creating efficiencies with paperless communication and processes are becoming mainstream. Furthermore, mobile accessibility is becoming crucial, allowing technicians to access critical information and perform tasks remotely. Additionally, configurable dashboards and analytics tools are essential for providing

actionable insights into MRO operations, facilitating informed decision making.”

Bernhard Meier is also of the opinion that software improvements have made the use of mobile devices more appropriate and effective. “For me, a big step forward for the industry is the mobile devices made available for the technicians with direct integration into maintenance planning systems. The transparency in communication, work order and document availability, the online follow-up on work progress, and updated maintenance records at the fingertip are some of the key benefits. Link this with a state-of-the-art aircraft records management system and it revolutionizes the way we manage records and aircraft transitions.”

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Jonathan Berger sees new software capabilities as a means to counteract problems created by a skilled labour shortage. "Given the skilled labour shortage throughout the entire aviation ecosystem, airlines and MROs are continually seeking ways to leverage technology and MRO software solutions as a key pillar of their respective holistic strategy to address the labour shortage, enhance labour productivity, drive operational efficiency, and candidly, do more with less staff. Specific examples include hangar/shop capacity planning & scheduling, manpower planning & scheduling, inventory management, production control & workflow management, and business intelligence that enables rapid, optimal decision-making from the front-line worker to the executive suite."

Chris Clements talks at length about how AMOS has helped to gain approval from authorities for paperless and real-time data. "Whilst it could be argued that paperless is a must today, the pace of change remains slow. Despite this Swiss-AS not only provides a paperless proven solution in AMOS (for several years now), our experienced team also provides services to guide the customer through the processes required to gain approval from their authorities and implement the required setup in AMOS to realise the potential of paperless and real-time data. Swiss-AS now provides three mobile solutions to enable the AMOS community to harness the power of paperless processes in the form of AMOSmobile/EXEC, AMOSmobile/STORES and the AMOSeTL. By delivering mobility and paperless processes to these three key areas we can really begin to eliminate the digital-to-paper- to-digital cycle that not only slows down the flow of information but also increases the chance for erroneous

data to be keyed in. So, more than ever a market leading M&E solution has to not only enable and support the customer in their digital journey, but the solution has to offer the means to seamlessly integrate with the customer's IT landscape and vision for full paperless, digital processes."

Recent innovations and breakthroughs in MRO software that are revolutionising or which have the potential to revolutionise the industry

Bernhard Meier touches on artificial intelligence, blockchain solutions and digital twin technology. "... digital transformation has been the key driver in the industry for many years. From blockchain solutions to advanced analytics and AI-driven workflows, many technologies have been on the horizon for years. I believe that digital twin technology creates benefits that enable organizations to monitor, analyze, and simulate asset behavior in an understandable way. By coupling digital twins with MRO software, organizations can gain insights into asset performance, simulate maintenance scenarios, and optimize maintenance strategies for improved reliability and efficiency."

Daniel Tautges is very focused on AI. "One of the breakthroughs in MRO software is going to be the leverage

of AI technology. Historically, domain information has resided with the technician based on their years of experience. One of the keys to AI is to allow the pass-through of knowledge with machine learning and AI to allow better workflow and decision making," while Renata Sumskaite looks towards the integration of generative AI: "The integration of flight data can improve efficiency and unlock additional predictive maintenance opportunities. This is especially true for engine maintenance, which proves to be a major pain point for the industry today. Another facet would be the integration of Generative AI capable of analysing data coming from various sensors and other sources. Such AI-driven solutions could predict with a high degree of accuracy when maintenance is required, thus optimizing the supply chain and aiding in risk management."

Remon Sweers highlights a less obvious but highly successful innovation that has had a dramatic effect on certain MRO practices – drones. "Drones have become increasingly common in the world of MRO. Technicians use them for various tasks during inspections and even repairs. These machines are convenient for hard-to-reach spaces and areas that pose a high risk for human workers. The main difficulty of using drones stems from regulatory differences around the world. America currently has some of the strictest rules, making it difficult to enjoy the full scope of benefits drones bring to the inspection and MRO process."

How MRO software providers are addressing the growing demand for predictive maintenance and real-time monitoring capabilities

Swiss Aviation Software's Chris Clements highlights the need for meaningful data. "... most operators do not have fleets large enough to generate meaningful data in and of themselves, not to mention the fact that their data belongs to them and not all want to share their data, therefore we have ensured that AMOS is in a position to integrate with solutions that focus purely on data analytics such as Aviatar's products, Predictive Health Monitoring and

“ Digital transformation has been the key driver in the industry for many years. ”

Bernhard Meier, CEO at AMROS Innovations



Bernhard Meier, CEO, AMROS Innovations

Condition Monitoring, Airbus's Skywise, etc., to ensure that the AMOS community is able to unlock their valuable data and combine it with information not normally tracked or entered into AMOS. Of course, to harness the real-time monitoring capability, AMOS must be a part of that real-time infrastructure. The drive to digitalise engineering and maintenance processes and implement paperless and mobile processes is essential to ensure that reported failures and follow-up actions are recorded accurately and at the time."

While SENSUS Aero's CEO Renata Sumaskaite discusses the need for analyzing and digitalizing processes using AI, ML, and other new technologies, specifically, QOCO Systems' Remon Sweers discusses the need for interpretable machine learning techniques: "While predictive maintenance strategies offer numerous benefits and is becoming more widely adopted, they also come with challenges, particularly related to managing and analysing large datasets. Due to newer aircraft technologies the volume of data generated by predictive maintenance grows which is why scalability becomes a significant concern. Traditional data processing and analysis methods may struggle to handle these increasing data volumes. Interpretable machine learning techniques from the software are needed to provide insights to enable fact-based decision making by



Renata Sumaskaite, CEO, SENSUS Aero

maintenance personnel."

Component Control's Daniel Tautges discusses the benefits of an ERP system. "There are very few MRO software providers that are leveraging advanced predictive analytics algorithms and the collection of real-time monitoring of labour. An ERP system can capture enormous levels of transactional data and every flight records terabytes of data. In the future AI will be able synthesize this data to offer predictive analysis on repair cycles, repair locations, and associated repairs. Predictive analytics can then project resource requirements, labour and part requirements to best position MROs to maximize new business, costs and turn-around times."

Where MRO software solutions may need further innovation in order to drive industry growth and efficiency

The main consensus from Jonathan Berger, Chris Clements, Renata Sumaskaite and Remon Sweers is that broad collaboration is the way forward.

Alton Aviation Consultancy's Jonathan Berger is keen to point out that greater collaboration will be needed. "There will be much greater collaboration and digital integration amongst all MRO stakeholders; airlines, MROs, OEMs, parts traders, regulators, etc. In order to achieve ever-increasing levels of improved safety, compliance, operational excellence, and cost control, each of the aforementioned stakeholders must have the ability for their respective technology solutions to seamlessly interact, enabling access to real-time, accurate data. MRO is a team sport and is only as strong as the weakest link."

Swiss Aviation Software's Chris Clements backs up Jonathan Berger's comments. "Swiss-AS has always taken a collaborative approach to delivering value to the AMOS community and in determining the best

way to provide innovation hand in hand with the depth of functionality that AMOS is known to deliver, and in this case we have leveraged the strength of the Lufthansa Technik TechOps Ecosystem and collaborated with Aviatar to increase the automation in maintenance planning that AMOS offers and introduce optimisation technologies previously not available. When it comes to using the power of technology such as AI & ML Swiss-AS has collaborated with experts such as Google to harness the power of Flutter as the platform for our mobile solutions and Google Cloud to make the full power of its Generative AI capability. AI now begins to find its way into AMOS in various features be that in the AMOSeTL or as the power behind Amy, a virtual, innovative companion that will support AMOS users in translating text, guiding them towards their next actions and accessing data from public data sources such as EASA or the FAA. Amy will be seamlessly available in AMOSdesktop, AMOSmobile, Customer Portal and the Swiss-AS corporate website as just the first steps of Amy's journey."

Renata Sumaskaite adds further credence to the need for broad collaboration. "The next step in the evolution of MRO software solutions lies in increased levels of integration. A broader, more collaborative aviation ecosystem is essential, where live data transmission and validation with all stakeholders can occur seamlessly. Cross-integrations with other stakeholders in the broader MRO ecosystem (including regulators) would accelerate continuous expansion of system capabilities. Cross-integrations will not only improve decision making but also foster a culture of trust and cooperation across the industry." She adds that: "... there is the need to continuously refine the algorithms for data analysis and predictive maintenance. Focused advancements in this area will enable MRO software solutions to deliver precise,

“Due to newer aircraft technologies the volume of data generated by predictive maintenance grows.”

Renata Sumaskaite, CEO at SENSUS Aero

“ The integration of automation technologies into MRO processes will enhance operational efficiency and productivity.”

Daniel Tautges, VP Marketing and Sales at Component Control

targeted results, minimizing downtime and optimizing maintenance schedules.”

Remon Sweers sees collaboration as a means of creating standards and aligning processes. “Many software companies work on a traditional supplier and customer relationship with long lead times for implementations and thus as such the industry moves not as fast as we would hope. There are many other industries that could be seen a benchmark how to innovate and develop. But the industry as a whole, mainly the MRO’s should work together creating standards, align processes and create a clear plan for future developments.”

Bernhard Meier feels that adaptability may well be key to the future. “I see

the future evolution of MRO software solutions driven by greater facilitation of adaptability. The adoption rate of advanced technologies is still suffering due to the complexity and difficulties to integrate them as part of a value chain, calling for more plug-and-play models. Further innovation is needed in key areas such as AI, digital twins, blockchain, mobile/cloud solutions, and the integration with emerging technologies to drive industry growth and efficiency in the coming years.”

Daniel Tautges is more focused on AI and machine learning. “Looking ahead, we anticipate further advancements in AI and machine learning, enabling more sophisticated predictive maintenance

models and prescriptive analytics capabilities. Moreover, the integration of automation technologies into MRO processes will enhance operational efficiency and productivity. Additionally, continued focus on cybersecurity measures is paramount to safeguarding sensitive data and ensuring the integrity of MRO operations. Overall, collaboration between us, our customers and industry stakeholders will drive further innovation, fuelling the growth and efficiency of the aviation aftermarket industry.”

It is clear from the contributions above that a combination of advancements using AI, blockchain technology and machine learning, when combined with a greater sense of collaboration will see a continued trend in changes to MRO software in the short-and mid-term evolving landscape. While the challenges will face all MRO operators, it is also clear that aircraft operators will be the ultimate beneficiaries of these future changes.



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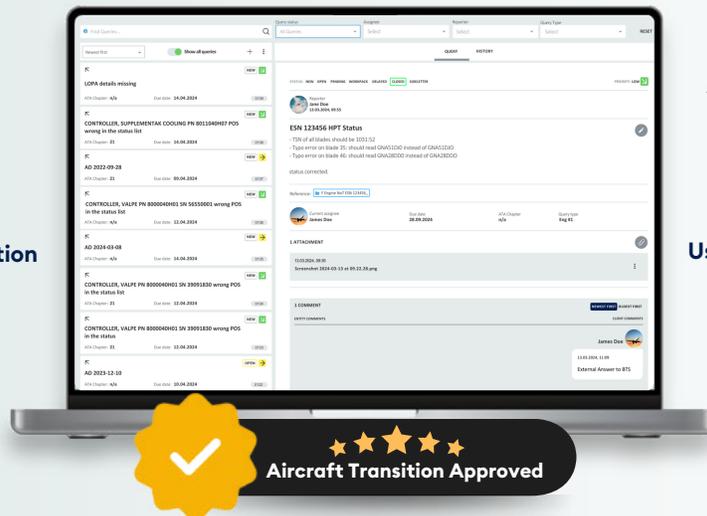
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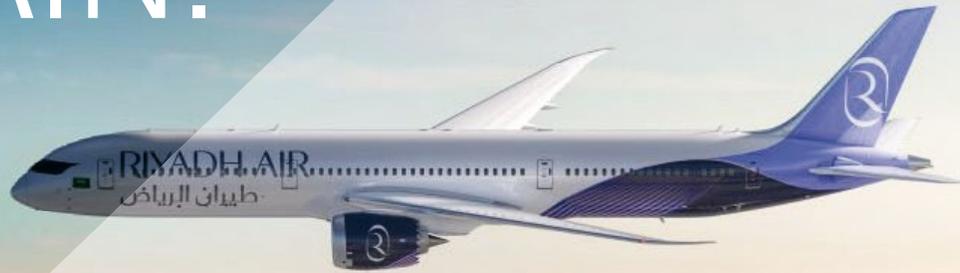
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— Chief Operating Officer of Riyadh Air

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Executive Interview about ILS (Inventory Locator Service)

Brian Driscoll, Vice President, eCommerce – ILS

Established in Memphis, Tennessee, in May 1979, Inventory Locator Service (ILS) emerged as a disruptive force in the aviation aftermarket, pioneering a marketplace that connected suppliers and buyers of aviation aftermarket parts. Initially focusing on the commercial aviation sector, ILS expanded its offerings to include repair services and parts for defence and general aviation industries and this year celebrates its 45th anniversary.

In 1999, ILS transitioned to an online marketplace, marking a significant milestone in its evolution. This move facilitated its global expansion, allowing it to cater to buyers and sellers worldwide. The platform provided airlines, MROs, and suppliers with enhanced visibility into aftermarket parts and services availability, offering a significant improvement over the labour-intensive manual search methods of the past. The company is once again transforming the

aftermarket with the introduction of SalesEdge™ Commerce, which aims to enhance efficient methods for buying and selling parts. With this solution, ILS together with Quantum Control and CORRIDOR enters a new



Brian Driscoll, VP of eCommerce, CAMP Systems International

area. B2B aviation professionals are increasingly seeking efficient ways to purchase parts, but traditional solutions have often placed a heavy burden on internal resources and required costly and complex IT implementations. SalesEdge™ Commerce emerges as a game-changer in this landscape.

AviTrader MRO: ILS, in collaboration with ERP software providers Quantum Control and CORRIDOR, recently unveiled SalesEdge™ Commerce. Can you tell our readers what this solution is about?

Brian Driscoll: SalesEdge™ Commerce is a native integrated commerce platform for the aviation aftermarket enabling suppliers to sell directly to their customers, and includes a customised Storefront natively integrated with their Quantum or CORRIDOR ERP, as well as their ILS Marketplace presence. It is the combination of providing a

“We spent a lot of time interviewing our customers to understand how we could create a platform that would address each of these pain points.”

customizable eStore-front, native ERP and Marketplace integration that differentiates this solution as it allows suppliers to capitalise on their existing systems, marketplace presence, workflows and brand.

What business problems are you addressing with SalesEdge™ Commerce?

While eCommerce solutions have been available in the aerospace industry, they generally either were not specifically developed with aviation aftermarket suppliers in mind, required substantial integration effort by the supplier’s IT team, did not offer great customer experience or generally did not address the core business objectives around growth and improving sales productivity in a talent-constrained market. We spent a lot of time interviewing our customers to understand how we could

create a platform that would address each of these pain points. SalesEdge™ Commerce was built directly with this feedback – sellers wanted a platform built for aviation. They wanted to continue to maintain the relationship with their customers, protect their IP and pricing information, build on existing workflows and ERP, and allow customers to have the same buying experience online as if they were talking directly to a salesperson.

How does SalesEdge™ Commerce enable an airline, MRO, distributor, or parts supplier to facilitate sourcing a critically needed part more efficiently?

Let’s take an AOG situation, where my goal as the procurement representative is to find, buy, and receive the part as quickly as possible. ILS is often the place where procurement starts in an

AOG situation.

Today, when I find the part, I need to contact the company, confirm they have it in stock, negotiate the price, and then wait while the seller creates the sales order and ships the part. When the part ships, I wait for the seller to send me tracking information so I can see the status of my order and shipment – this can result in many emails, phone calls, and frustration for the procurement rep. With SalesEdge™ Commerce, I can find that part on ILS, click a link to go directly to the seller’s website, confirm availability and stock, indicate I have an AOG order, and buy the part without picking up the phone. I get my order confirmation immediately and the order is automatically created in the seller’s ERP and they are notified. Once that part ships, I’ll get an automated email with my tracking information. It’s extremely efficient and provides an improved purchasing experience for both the seller and the procurement rep.

What benefits does SalesEdge™ Commerce offer for sellers?

There are many benefits with this

Examples of out-of-the box capabilities available in SalesEdge Commerce

Buyer features	Supplier features	Pricing features	Sales features	Marketing
<ul style="list-style-type: none"> Single page checkout Corporate accounts Guest registration Repeat ordering 	<ul style="list-style-type: none"> User mgt, role access Promotions engine Payment options, rules and gateway Tax codes/rules Shipping method 	<ul style="list-style-type: none"> Multiple price lists Tiered (quantity-based) pricing Request for Quote Multiple currencies 	<ul style="list-style-type: none"> Real-time ERP integration Opportunity, Account, Case mgt Online quoting Sales order volume and number widgets 	<ul style="list-style-type: none"> SEO Mgt CMS/Content mgt Search history Landing pages User behavior tracking

solution that was designed with aftermarket suppliers in mind, allowing them to expand their market reach, enhance sales productivity through workflow automation, and execute integrated marketing campaigns. The solution offers functionality for buyers, suppliers, pricing, up to modern digital marketing tools like SEO (Search Engine Optimization), content management, landing pages, and user behaviour analysis to continuously optimize performance and the User Experience.

The strategic benefit for a supplier implementing SalesEdge™ Commerce is that it protects their investments in their brand, intellectual property (IP) including workflows and extends the value of the ERP and ILS marketplace presence they already have.

What role does artificial intelligence (AI) play for ILS today?

The role of AI is becoming increasingly significant, for examples ILS Fair Market Value (FMV) uses analytical data and AI algorithms to determine up-to-date market values of aircraft and engine parts. FMV provides users with critical pricing information to make more informed buying and selling decisions, and it is also integrated with our quoting tool using historical pricing data, market conditions, and supply/demand dynamics to help suppliers set competitive and profitable prices for their parts. These capabilities are available within SalesEdge™ Commerce.

Overall, by leveraging AI's ability to analyse vast amounts of data – ILS FMV data covers 660M+ price points – and identifies patterns, aviation part traders can gain valuable insights,

“The role of AI is becoming increasingly significant.”



improve operational efficiency, and enhance their competitiveness in the market.

Will SalesEdgeCommerce replace the current ILS platform or does it complement the marketplace?

SalesEdge™ Commerce is designed to be used by suppliers and provides an eCommerce storefront integrated into the suppliers' website, their ERP as well as their ILS marketplace presence. Consequently, it complements the marketplace by enabling suppliers to draw traffic from the marketplace, as well as from other online channels. The native and secure integration aspect is significant as it prevents customers to invest and maintain a custom integration with their systems.

Are there interfaces in SalesEdge™ Commerce available for the integration with the customer's ERP system?

Currently, the solution is natively integrated with Corridor as well as Quantum Control in the initial release. It has been well received and many sites will be going live this year integrated with these ERPs. With the robust API suite available, additional ERP integration is in the future roadmap.

It appears to be an excellent tool for enhancing speed and efficiency in the procurement process. How can someone who is interested begin using it?

For more information on SalesEdge™ Commerce, sign up for a personalised demo or join us at industry events where live demos will be available. As always, ILS, CORRIDOR, or Quantum Control customers can contact their respective account teams for further details. SalesEdge™ Commerce is available to CORRIDOR and Quantum ERP solution customers with active ILS subscriptions.

With SalesEdge Commerce, ILS delivered a system that efficiently integrates within existing procurement strategies and processes and aligns with the prevailing customer expectation that purchases can be made online 24/7. As an eCommerce platform SalesEdge™ Commerce can be integrated with a supplier's existing website, ERPs and ILS marketplace presence to help aftermarket vendors increase their addressable market. Beyond that, as is almost a prerequisite these days with continual advancements in IT, the SalesEdge™ Commerce platform appears effectively future-proofed for what will be a continual roll-out of product advancements.

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Focus South East Asia

A Changing MRO Landscape

By Swaati Ketkar

The COVID-19 pandemic and its woes are far behind us and the aviation sector has zoomed ahead in terms of growth, passenger traffic, policy structures, newer MRO facilities, etc. In short, in almost every aspect aviation recovery is nothing short of robust. However, if we look at the global passenger recovery rate the South East Asian region has made its mark with consistent passenger growth along with newer aircraft orders and an expanding MRO sector. Let us have a look at the changing MRO landscape in South East Asia with a focus on three main regions – Singapore, Malaysia and Indonesia.

Boeing forecast

Boeing, in its Commercial Market Outlook 2024, has already predicted that the South Asia region will become the fastest-growing commercial aviation market with more than 8% annual traffic growth over the next 20 years and to meet this rising demand the operators are projected to quadruple the size of their fleets over the next two decades. Carriers will require more than 2,700 new airplanes to address growth and fleet replacement.

Boeing forecasts the region will require 37,000 pilots and 38,000 maintenance

technicians over the next 20 years, driven primarily from growing demand in India. Obviously with the region eyeing such growth dynamics over the next couple of decades, the OEMs and third-party MROs have already begun the groundwork in creating a solid foundation for the upcoming demand. Let's dive deeper!

Market competition in South East Asia

A few months back some of the heaviest maintenance checks went to North America or Europe because the operators wanted to make use of the downtime by also doing a cabin refurbishment. But now many MROs in Asia have developed the capability for heavy maintenance checks along with cabin refurbishments. Ivan Lim, Regional VP,

ExecuJet MRO feels that there is a rising trend of operators in Asia sending the heavy works to MROs in the region. "OEMs have recognized the market potential and have invested heavily in MRO infrastructure in the region, capitalizing on the abundant skilled manpower. This has allowed MRO companies to expand their capabilities, making APAC the next business aviation MRO powerhouse," Lim comments.

The latest industry forecasts suggest operators in Asia will generate the largest share of MRO demand in the near future, contributing slightly more than a third of the global total. Asia presents a dynamic marketplace teeming with diversity and innovation. Mahesh Kumar, CEO of Asia Digital Engineering (ADE) feels that Asia's MRO sector stands out for its vibrancy,



Ivan Lim, Regional VP Asia, ExecuJet MRO Services

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“ Boeing forecasts the region will require 37,000 pilots and 38,000 maintenance technicians over the next 20 years. ”



attracting attention with its competitive rates, innovative approaches, and greater capacity.

Going ahead, Kumar further points out that the APAC region is lacking in substantial capacity building, creating a major roadblock for growth. There is a notable surge in demand for MRO slots, reflecting a growing trend that is expected to persist over the next five years. "Airlines worldwide are actively seeking MRO services, prompting the industry to swiftly adapt and address the escalating demand," Kumar adds.

Singapore Air Show, held last month, in March 2024 was the perfect example reflecting the growth story of not just Singapore but the entire South Asian region. The three-day Air Show was buzzing with aircraft and engine orders, new MRO deal signing and announcements of new MRO hangars in the region. This has laid the basis for Singapore's robust aviation growth structure and expansion plans for the coming decade.

OEMs and MROs robust expansion in Singapore

SIAEC and Thales - SIA Engineering Co. (SIAEC) and Thales Solutions Asia are planning to work together in component

MRO with Thales facilities working in sync with SIAEC's inventory technical management programmes and its network of component shops. This MoU will expand SIAEC's component repair capabilities, network and service offerings for Thales' customers, says Bernd Riggers, SIAEC's senior vice president of component services.

With the aviation sector in full recovery, having fleets in top shape remain a priority for all airlines and this MoU will serve as the first step towards both the companies leveraging their complementary capabilities and network to benefit the operators.

Pratt & Whitney recently announced the opening of a 48,000 square-foot expansion of its Singapore based engine centre Eagle Services Asia (ESA) that will expand its GTF capacity by two-thirds this year. Speaking on this expansion Shang Meleschi, vice president of Aftermarket Operations – Asia Pacific and Türkiye at Pratt & Whitney says that Pratt is keen to bring together the talent from its engine

center, technologies from Singapore Technology Accelerator and innovative practices from across Pratt & Whitney to improve MRO performance for its GTF fleet.

ESA, a joint venture between SIA Engineering Company and Pratt & Whitney.

In 2023, Pratt & Whitney announced three GTF MRO facility expansions and six shop activations to support the growing GTF fleet. There are currently 15 active GTF MRO engine centres around the world, with seven locations in the Asia Pacific region including ESA in Singapore, Korean Airlines in Korea, IHI and MHIAEL in Japan, MTU Maintenance Zhuhai and AMECO in China, and China Airlines in Taiwan. By 2025, the company expects to have 19 active GTF MRO shops worldwide.

Pratt & Whitney will invest another \$20 million (£16 million) to expand its manufacturing capacity in Singapore located at Seletar Aerospace Park, producing more crucial components for its GTF engine family.

“There are currently 15 active GTF MRO engine centres around the world, with seven locations in the Asia Pacific region.”



Additionally, Pratt & Whitney Canada will add a new MRO line for the PT6C-67C engine that powers the Leonardo AQ139 helicopters, complementing the existing overhaul capability of the Saint Hubert Engine Center in Canada to serve global customers.

Safran is all set to open a new 30,1000-square-foot maintenance, repair and overhaul (MRO) facility at Seletar Aerospace Park. In February 2024, Safran Electric and Power signed a memorandum of understanding with Singapore Economic Development Board to establish a base for production of aeronautical electrical equipment as well as MRO work. The business unit will cater to electric conversion, power generation, and electric motors for civil and military aircraft. Eyeing this contract as Safran's commitment to Singapore as a major regional hub, Valerie Patuel, CEO of Safran Singapore confirmed that this industrial site will further

strengthen Safran's ability to support the increasing commercial aviation demand in ASEAN (Association of South East Asian Nations) region.

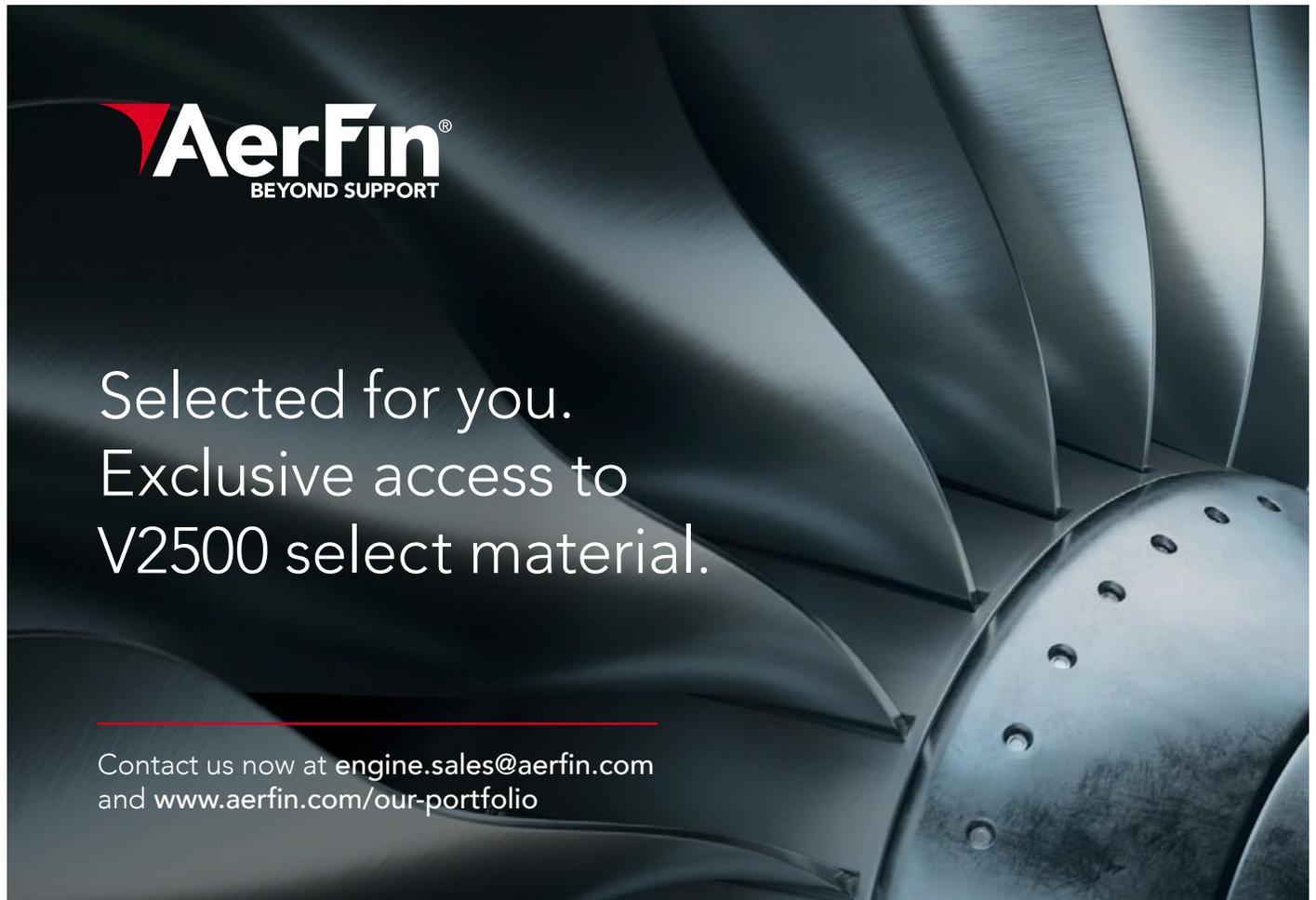
Singapore Aero Engine Services (SAESL) is set for a 50,000-square-meter expansion of its existing facility at Seletar Aerospace Park with 40% capacity addition and potential to generate another 500 jobs, and an additional investment of whopping \$180 million (£142 million). The additions will include a new 280,000-sq-ft facility at JTC's Loyang estate next to its current SAESL campus at Calshot Road, as well as an expansion into the Rolls-Royce campus at Seletar Aerospace Park.

The Calshot Road facility will focus on engine inductions using the latest logistics solutions to optimize engine parts management while the Seletar campus expansion will focus on large component repair, commodity centres of excellence, and low-pressure repair.

Additionally, SAESL's existing facilities, consisting of five buildings, will undergo upgrades and be reconfigured to accommodate increased production capacity. Apart from this, SAESL will also establish an advanced repair cell that will focus on additive remanufacturing, adaptive machining, and non-contact measurement systems.

Barnes Aerospace has expanded its engine component repair footprint in Singapore's Seletar Aerospace Park by 50% to serve growing demand from customers across Asia.

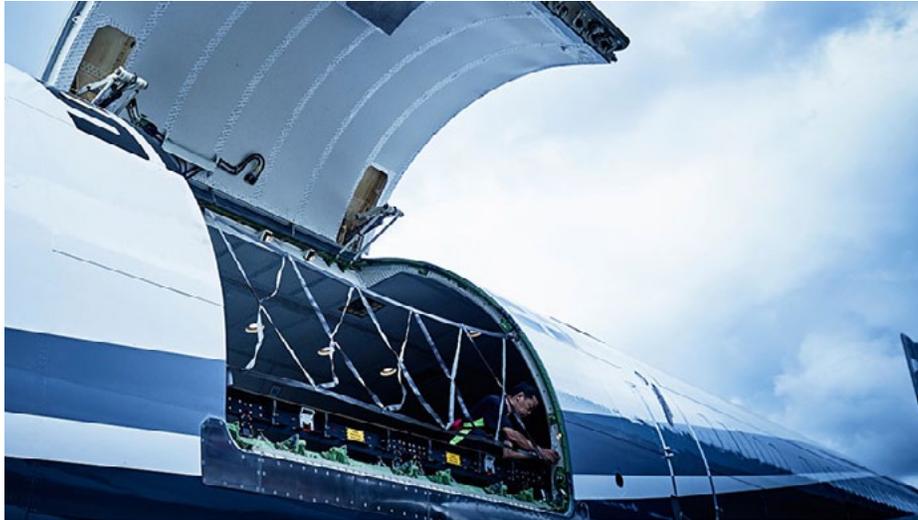
GE Aerospace is investing \$11 million (£8.7 million) to transform its Singapore aircraft engine repair facility at Seletar Aerospace Park into a state-of-the-art 'Smart Factory' to host automated inspection systems, innovative material removal processes, and digitalisation technologies to meet surging demand for the American engine supplier's high-quality components.



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Freighter conversion

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Singapore already has GE Aerospace’s largest engine MRO facility, accounting for more than 60% of its global repair volumes and employing more than 2,000 people across three sites in Seletar and Loyang.

ST Engineering is planning to include new MRO airframe facilities in China and Singapore as well as two more new hangars in Pensacola, which will progressively come online from 2025 onwards. Apart from airframe facilities, ST Engineering is also expanding its engine MRO shopfloor to handle more CFM56-5/7 engines and the newer-generation engines, the LEAP-1A and -1B.

Speaking of this steady recovery post pandemic and rising MRO demand, Jeffrey Lam, President of Commercial Aerospace, ST Engineering says that its airframe facilities are operating at near full or full capacity. “Our decision to invest in capacity expansion during the COVID-19 pandemic has paid off significantly; the opening of a new hangar in Pensacola, Florida in early 2023 gives us the necessary capacity to better service our North American customers,” Lam adds.

The above expansion plans, MoUs and newer MROs in Singapore gives a sheer

idea of the amount of demand the region is expecting over the next few years.

Singapore accounts for almost 10% of the worldwide MRO output with an approximate 15% market share in the global engine MRO segment. With the

largest engine MRO industrial base and 130 MRO companies, Singapore’s is one of the strongest MRO hubs in South East Asia.

Singapore’s co-investment programme encourages global companies to form joint ventures with local enterprises, thus giving a boost to local businesses. These investments include private R&D, development of human resources and expansion of innovative infrastructure.

Singapore’s Economic Development Board (EDB) promotes local as well as global companies in terms of providing incentives, subsidies and grants to companies investing in Singapore, thus creating a safe haven for industries looking to venture into Singapore and establish an MRO base.

Major MROs in Singapore – SIAEC, Eagle Services Asia, Singapore Aero Engine Services, GE Aerospace Singapore, Safran Landing Systems, AMetek Singapore, Meggitt Aerospace Asia pacific.



Heavy Maintenance

© ExecuJet

“Singapore already has GE Aerospace’s largest engine MRO facility.”

Malaysia

Now let's shift focus to Malaysia. The region has already established itself as a leading aviation hub in South-East Asia, but aviation experts from the region are of the opinion that Malaysia should focus more on upgrading its infrastructure and upskilling its workforce for more focused overall growth.

Some experts feel that Malaysia is a notch lower to Singapore in MRO space, but with adequate political support and will, Malaysia has the potential to become a pioneer in the MRO sector.

It should be noted that most of the MRO companies in Malaysia are concentrated in the Klang Valley. For the overall development of the region as an MRO hub, the companies need to spread out to other regions like Johor Barum, Penang and Kota Kinabalu.

Several market reports indicate a

“Several market reports indicate a burgeoning market growth for business jets in the Asia Pacific region.”

burgeoning market growth for business jets in the Asia Pacific region, especially India, along with some other Southeast Asian countries. As more aircraft enter the region, inevitably the demand for MRO services will also increase accordingly. Within the region, Malaysia has set a target of capturing close to half of Asia's MRO market and 5% of the global MRO market by 2030.

Just last month Dassault Aviation, operating under the brand name ExecuJet MRO opened a major maintenance, repair, and overhaul (MRO) facility in Kuala Lumpur to support Falcon operators in Southeast Asia. Speaking about the new purpose-built facility, Ivan Lim, Regional VP,

ExecuJet says that it has enabled them to increase its MRO capacity and capability. “The large hangar can now accommodate up to 15 medium and large business jets thereby increasing the available slots for maintenance services.”

The custom-designed hangar will enable ExecuJet to offer a full suite of maintenance services, including heavy maintenance checks, AOG support, cabin interior refurbishments, satcom installations, avionics upgrades and other advanced modifications, to a wide range of Dassault Falcon business jets as well as Bombardier and Gulfstream aircraft. “Our current workforce is 80 strong, and we are looking

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to increase this number to 100 in the near future. We continuously invest in tooling and training to increase aircraft types to our capability," Lim adds.

Asia Digital Engineering (ADE) is also geared for growth as it plans the commercial opening of its brand new state-of-the-art 14-line hangar in Kuala Lumpur in Q3 of 2024. This new hangar spanning 8.19 hectares, is being constructed in two phases, with Phase 1 slated for completion in May 2024 and operational by August, while Phase 2 is set to follow swiftly, with operational readiness anticipated by October this year

The hangar is able to accommodate 14 narrow-body aircraft at one time or 8 narrow-body and 2 wide-body aircraft. Once operating at maximum capacity, the cutting-edge facilities will provide extensive heavy MRO services concurrently for up to 16 commercial aircraft. "In addition to significantly enhancing our base maintenance capacity, the hangar proximity to our warehouse will translate into quicker turnaround times," Kumar adds.

The new hangar will house workshops such as the seat shop, carpet shop, cabin shop and sheet metal and composite shop. With its capacity to accommodate wide-bodied aircraft, ADE will further extend its

maintenance services to include Airbus A330 aircraft and, eventually, Boeing aircraft too.

With the new and its largest hangar to become operational soon, ADE is planning a strategic expansion by extending line maintenance operations in the rest of the APAC region, especially Indonesia, Thailand, the Philippines, and Cambodia to meet the evolving demands of the industry.

ADE currently operates an extensive network of cutting-edge hangars, strategically positioned across key locations

in Malaysia. These include a four-line hangar in Subang, a two-line hangar in Johor Bahru, and a single-line hangar at Kuala Lumpur International Airport (KLIA). In Q3 of this year post the opening of another hangar at KLIA, ADE is poised to embark on Phase Three of its expansion plans.

"Phase Three of our expansion will be facilitated by our first right of refusal for a 2.07-hectare piece of land adjacent to our facility in KLIA. Soil testing has commenced, and construction is scheduled to commence upon the completion of our hangar, with a projected finish by the end of 2026," Kumar adds. Upon completion, this phase 3 of the ADE's KLIA expansion project will accommodate an additional four lines dedicated to narrow-body aircraft. "Additionally, we will be advancing line maintenance operations regionally," Kumar further explains.

As the new hangar becomes operational, ADE aims to double the C-check completions to 200 towards the end of the year. "Furthermore, we are exploring potential partnerships with prominent MRO players in ASEAN to enhance our regional presence and capabilities," Kumar concludes.

Indonesia

And last but not the least, we come to Indonesia, a market growing more aggressively in the MRO sector at the moment. Speaking of Indonesia, the first



© FL Technics Indonesia Hangar

place that attracts attention is Bali, poised to become an MRO hub soon. The latest 17,000 sq. m MRO hangar is about to come up at Bali's Ngurah Rai Airport in cooperation with PT Angkasa Pura I and Angkasa Pura Properti (APP)-FL Technics Indonesia with an investment of \$25 million (£20 million) in the initial stage.

Ngurah Rai Airport currently has two hangars, each capable of housing one aircraft each, with this new facility, the airport's capacity to handle maintenance needs will increase four-fold.

The new facility will have a hangar with six bays to maintain narrow-body aircraft, supported by purpose-built production shops and offices along with a training centre and logistics offerings including an on-site bonded logistics centre.

The upcoming facility is FL Technics' second MRO facility in the country, the first one located in Jakarta at the Soekarno-Hatta International Airport and operational since 2016.

Emphasising the significance of this project from a business and regional perspective, Martynas Grigas, director of FL Technics, Indonesia says, even though FL Technics is expanding across the globe and entering new continents, it is not losing focus on key markets. "I am confident FL Technics' experience, resources, and expertise will grant the success of the project in Bali – our partners will benefit from a global independent MRO network, the industry will gain access to our solutions approved by FAA, EASA, and CASA, while the region will be provided with more than 500 new jobs, as well as new travel, cargo, and trading opportunities," Grigas adds.

Bali is a popular destination for Australians and FL Technics expansion in Indonesia is aimed at attracting Australian aviation operators opting for cost-effective MRO in Bali.

Another major MRO, GMF AeroAsia has its main base at Soekarno-Hatta



Hangar

© FL Technics Indonesia

International Airport near Jakarta. It includes a 67,000-square-metre narrow-body maintenance hangar, a 22,000-square-metre wide-body hangar and 23,000-square-metre light maintenance hangar along with another 23,000-square-metre hangar space dedicated to A330 repairs.

GFM AeroAsia mostly services aircraft for Indonesia's flag carrier Garuda Indonesia, but with the airline entering restructuring during the pandemic, GFM's balance sheets dipped to negative leading to the MRO requesting creditor waivers and restructuring of debts. However, post-pandemic as air travel resumed, GFM sales also climbed and the MRO recorded profits in the first six months of 2023.

Currently GMF is considering expansion plans with regards to greater wide-body maintenance services to take advantage of the growing air cargo market in Indonesia.

Scrambled regulatory framework – a major challenge

The entire South East Asian region has a fragmented regulatory framework with each country having its own set of rules

and policies governing the regulatory authority. The absence of one regulatory umbrella for all requirements like the FAA or EASA is a major pain point for companies getting a simple Part 145 approval or its equivalent and needs regulatory approvals from different countries, separately.

Meanwhile, the growth of the MRO sector in any country is backed by strong government initiatives and policies favouring third-party MROs, OEMs as well as airlines. And the MRO growth in the above three countries can be attributed to strong support of governments with benefits like tax incentives, subsidies, skill development initiatives, etc. The governments also encourage duty free imports of machines, equipment and spares thus benefitting buyers and sellers.

To put things in perspective, the MRO landscape in South Asia is changing at a rapid pace, newer hangars are sprouting up with advanced modules of maintenance balanced with latest technologies like AI and robotics. A major plus-point for the South Asian market is the abundance of skilled labour at reasonable rates which makes this market extremely lucrative for Western operators.

“Currently GMF is considering expansion plans.”



Engine maintenance
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Ensuring Safety and Performance

Managing Human Factors in Aircraft Maintenance

By David Dundas

It is widely accepted that air travel is the safest form of transport in terms of fatalities per mile travelled. However, whenever there is a major plane crash, it tends to be catastrophic and usually involves the loss of multiple lives. From a statistical perspective, approximately half of all plane crashes can be attributed to pilot error, while around a fifth can be put down to mechanical failure. Despite the improvements brought about by new manufacturing technologies maintenance is very much a high-stakes affair where one small error can have disastrous consequences. When it comes to the field of aircraft maintenance the importance of safe, efficient and effective procedures is critical. Consequently, understanding the role of human factors is also of vital importance.

The role of 'human factors' in aircraft maintenance

Human beings are not robots who can therefore be expected to perform the same task, time and time again,

in exactly the same way. More to the point, robots do not suffer from mental distractions and physiological challenges in the way humans do. Human performance for any task can be affected to varying degrees by any of the following challenges.

Clear channels of communication between maintenance personnel, pilots and supervisors are essential. Poor communications lead to communication breakdowns which, in turn, lead to misunderstandings, less effective work and consequently errors. Fatigue is also a constant threat as maintenance tasks can often require long hours. The outcome can result in impaired cognitive function and problems concentrating on the task at hand, poor decision-making and compromised judgement.

The responsibilities that automatically come with aircraft maintenance and the high-pressure working environment mean that everyone is susceptible to stress and anxiety, both of which can severely affect the ability to work efficiently and safely. Lapses of judgement and lack of attention to detail can be the result of being overly stressed at work. On the obverse, complacency can also be equally dangerous in the field of aircraft maintenance and can easily result from carrying out mundane, repetitive tasks. Complacency can manifest itself in the form of lack of attention to detail, lack of concentration and a decrease in overall levels of vigilance.

One of the most important aspects of ensuring the highest standards

“ Human beings are not robots who can therefore be expected to perform the same task, time and time again, in exactly the same way. ”



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of aircraft maintenance which encompasses the human element is effective and regular training. Not only does training teach maintenance crews how best to perform tasks but it also helps to counteract a well-recognised human factor when routine tasks have been mastered – the desire to make the task easier and swifter by cutting corners. Regular training helps to ensure that all tasks are performed in the safest and most effective way. In addition, training not only relates to hands-on workers, but also supervisory staff who are shouldered with the responsibility of ensuring that all working practices are strictly adhered to and that all staff are physically and mentally able to perform their duties.

How best to manage 'human factors'

It is one thing to know that potential for problems exist, it is another to know how to mitigate effectively

to avoid the occurrence of these problems. In terms of ensuring there is effective communication among the maintenance crew, clear protocols should be implemented, while open dialogue between all staff should be actively encouraged. All procedures should be standardized, the use of checklists made obligatory, and regular briefings will ensure that everyone is aware of what is expected of them and others in the team, while also ensuring that any critical information and updates are effectively conveyed.

Effective fatigue management can be harder to implement. The nature of the work is such that a close eye needs to be kept on the number of consecutive hours an employee works, and that adequate rest breaks and rest facilities are provided. However, lack of sleep will not always be the result of long hours worked but external influences. Illness, such as back pain can result in lost sleep,

relationship problems and family commitments such as the birth of a new child can lead to severe sleep deprivation. Employees should be encouraged to recognize the first signs of fatigue and also learn how to prioritize good sleep and self-care.

In a working environment that is prone to creating stress, effective stress management can be the only option available to act as a countermeasure. This can be achieved within a company set-up through the implementation of a supporting working environment that will help employees to deal with stress. This can include the provision of stress-management workshops, counselling services, availability of recreational facilities and areas devoted specifically to relaxation.

Where staff training is concerned, comprehensive programmes should be invested in that focus on continued education, skill development industry



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best practices and safety protocols. However, human factor awareness should also be included in training programmes in order to facilitate appropriate mitigation.

As part of ensuring there is a robust safety culture in the workplace, a non-punitive reporting culture should be actively fostered, one which encourages employees to report any safety concerns, errors or near misses without fear of any reprisal. Any incidents reported should be thoroughly investigated and, where

appropriate, corrective actions should be implemented to prevent further occurrences of the problem.

As safety has to be of greatest concern and the driver for any change in maintenance operations, the opportunity to automate further aspects of aircraft maintenance should always be given due consideration as leveraging automation and technology can reduce the risk of human error and improve efficiency.

Where safety is at the root of all actions, generating a robust safety culture in the workplace itself should be paramount and safety should be placed above all else. Employees should feel empowered to have a say in safety protocols and be accountable for all their actions. Safe

behaviours and working practices should be rewarded, while employees should actively be involved in safety initiatives and decision-making processes.

Understanding human factors will make employee management easier and more effective, which is essential for ensuring the safety, reliability, and efficiency of aircraft maintenance operations. Through understanding the many factors that influence human performance and implementing proactive strategies to mitigate risks, companies can reduce the likelihood of errors and improve all-round safety. By prioritizing the well-being and competency of maintenance staff, the highest standards of safety and excellence in aviation maintenance can be upheld.

“ A non-punitive reporting culture should be actively fostered. ”

»»»»→ *on the move*



Kane Ray

IBA, the aviation market intelligence and advisory company, has named **Kane Ray** as its new Head of General Aviation and Aftermarket. With over 13 years of experience in aviation consulting, valuations and asset management, Ray brings a wealth of expertise to his new role. Drawing on his extensive technical knowledge and commercial relationships, he will lead IBA's General Aviation and Aftermarket appraisal services, leveraging the company's cutting-edge intelligence through IBA Insight to provide accurate, unbiased valuations and advisory services across a diverse range of aviation assets. Ray's career began at IBA, where he established himself as an expert in aircraft engine and component appraisal and consultancy services over seven years, eventually becoming Head Analyst. After stints at Counterpoint Market Intelligence and Kayan Aviation Capital, he returns to IBA as Head Appraiser, bringing significant exposure to the aviation supply chain. Reflecting on his appointment, Ray expressed his excitement to re-join IBA, citing the company's unparalleled access to quality insights and the team's extensive expertise as key factors in his decision. He commented on the remarkable growth and development of IBA's offerings prior to his return, reaffirming his commitment to the company's culture and passion for aviation.



Yasuyuki Kusakari

Jackson Square Aviation (JSA) has announced the appointment of **Yasuyuki Kusakari** as the new Chairman of the aircraft leasing company, effective April 1, 2024. Kusakari will succeed **Osamu Muramoto**, who has served as Chairman of JSA since June 1, 2019. Muramoto, currently the Managing Executive Officer and Head of Aviation Business Division at Mitsubishi HC Capital Inc., will transition to a new role within Mitsubishi HC Capital's global business unit. Having been a key member of Mitsubishi HC Capital's aviation business division and international credit division since May 2020, Kusakari brings extensive experience to his new position. He possesses a deep understanding of JSA's operations and has cultivated strong relationships with the company's team members, customers, and suppliers over the past few years, ensuring a seamless transition. Expressing his enthusiasm for the

new role, Kusakari stated, "I am delighted to assume the position of Chairman at Jackson Square Aviation and eager to collaborate with the company's accomplished leadership team." He added, "I am grateful for the confidence placed in me to succeed Mr. Muramoto, and I am committed to further enhancing JSA's standing as a global leader in aircraft leasing."



Auvinash Narayen

AerFin has announced that **Auvinash Narayen** has assumed the position of Chief Investment Officer as of April 2, coinciding with his 13th anniversary at AerFin. Since the company's inception in 2011, when Narayen joined as the second employee, he has played a key role in leading airframe and engine acquisitions, as well as building a global trading team that has been pivotal to the company's growth and profitability. In his new role as Chief Investment Officer, Narayen will be responsible for overseeing the company's investment strategies, drawing on his extensive knowledge of the aviation aftermarket to identify and seize opportunities that are in line with AerFin's long-term goals. As a member of the Executive Committee, he will evaluate potential investments, manage risks, and optimize returns for the company and its shareholders.



Stephan Klose

Stephan Klose will join Joramco, the Amman-based aircraft maintenance, repair, and overhaul (MRO) facility and engineering arm of Dubai Aerospace Enterprise (DAE), as the company's new Chief Operations Officer. Commenting on Klose's appointment, Chief Executive Officer, **Fraser Currie** said, "Joramco is delighted to welcome Stephan to the senior management team where he will be joining and leading a team of experts and professionals. I look forward to his contribution in delivering against our vision and mission statements, especially at a time of significant strategic growth." With more than 60 years of experience, Joramco has built a sound track-record as a leading independent commercial aircraft maintenance, repair and overhaul (MRO) facility, serving a wide range of customers in the Middle East, Europe, South Asia, Africa and the CIS countries, offering services on several aircraft models from the Airbus, Boeing and Embraer fleets.