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The AviTrader team at Aviation Week Network's MRO Europe 2024
© *AviTrader*

Dear Industry Colleagues,

Reuniting with many long-standing friends and meeting new people. On top of that, enjoying a mild climate during the autumn on the Mediterranean. What more could you want?

As always, our team was at the Aviation Week Network's MRO Europe. This year in Barcelona, Spain.

We had the opportunity to talk to many company representatives and discuss topics from our MRO industry. You can read the interviews with Bo Lump from SR Technics and Rob Suhs from Inventory Locator Service in this issue.

We have dedicated this issue to the topic of engine maintenance. The CFM56 is the workhorse of narrowbodies with the LEAP engine being the successor to the CFM56. We wondered what the differences are in terms of maintenance.

And then there is the topic of document management. Although there are a variety of digital solutions, many companies still work with paper - stamped and stored in dusty boxes. We asked Giovanni Renga from AMROS Global about the costs of analogue documents.

By the way, our media pack for 2025 is online at **avitrader.com**. There you will find the topics for 2025, our diverse advertising options for promoting your company and much more.

Until next month and enjoy reading MRO 360°.

Peter Jorssen
Publisher


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AVIATION NEWS PUBLICATIONS
MRO 360°

The Power Workhorses

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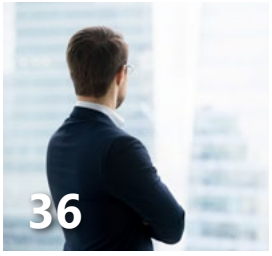

Iberia Maintenance now fully operational for overhauling GTF engines

Iberia Maintenance has confirmed that it is now fully operational for the overhaul of RTX's Pratt & Whitney GTF™ engines. Its La Muñoza facility, strategically situated next to Adolfo Suárez Madrid-Barajas Airport, is equipped to handle disassembly, assembly and testing. Several Pratt & Whitney GTF engines are already undergoing maintenance at the site. The company joined the GTF maintenance, repair, and overhaul (MRO) network in 2022, focusing on the PW1100G-JM engine that powers the Airbus A320neo family. Iberia Maintenance has invested in cutting-edge MRO technologies, such as grinding, balancing and test data acquisition systems, and expanded its mechanic workforce to increase GTF capacity. "With GTF engine inductions underway, we have made a step ahead in the market. We're increasing our maintenance capabilities and our expertise while being able to serve more customers. Our goal as an MRO provider is to meet our customers' needs and, with this milestone, we can serve both legacy and new engines,

Iberia Maintenance is now fully operational for the overhaul of Pratt & Whitney GTF™ engines © *Iberia Maintenance*

that will power the fleet for many decades," said Enrique Robledo, Chief Technology Officer at Iberia Maintenance. Rob Griffiths, Senior Vice President of Commercial Engines Operations at Pratt & Whitney, praised Iberia Maintenance's inclusion in the GTF MRO network, noting the company's extensive experience. "Iberia Maintenance brings more than 90 years of MRO experience into the network, with a proven track record maintaining the V2500 engine," said Griffiths. He also highlighted that Iberia's addition to the network expands the global GTF MRO footprint to 18 shops, enabling world-class services to be delivered to European customers as the GTF fleet grows. In related news, IAG has selected 47 Airbus A320neo-family aircraft powered by GTF engines, with the Iberia Group already operating five of these planes.

KM Malta Airlines selects LHT for LEAP-1A engine maintenance

© KM Malta Airlines

Lufthansa Technik (LHT) has secured a new long-term partnership with KM Malta Airlines, the recently established national airline of the Maltese Islands, to provide MRO services for LEAP-1A engines. Over the next nine-and-a-half years, Lufthansa Technik will manage the repair and overhaul of these engines, which power KM Malta Airlines' Airbus A320neo fleet. The MRO provider is currently carrying out two quick turns for the airline. Given that the LEAP-1A engines are still early in their lifecycle and most do not yet require a full overhaul, quick-turn services are being performed. These visits focus on addressing specific technical issues that result in early engine removal, such as replacing stage 1 blades or shrouds in the high-pressure turbine. This approach allows for a swift return of the engine to service, maintaining flight operations until a full overhaul is necessary. Zeljko Pejovic, Director of Technical Operations at KM Malta Airlines, conveyed his excitement about the long-term partnership with Lufthansa Technik, recognising the company as a trusted leader in aviation maintenance. He highlighted that its expertise with LEAP-1A engines would ensure the safety and reliability of KM Malta's fleet while supporting the airline's commitment to operational excellence. Lufthansa Technik has completed over 60 LEAP-1A and LEAP-1B service events, including the performance restoration on a LEAP-1A engine.

FAI Technik receives Nigerian AMO certification

German MRO service provider, FAI Technik GmbH (FAI Technik), a wholly owned subsidiary of FAI Aviation Group Holding, has announced that it has received an Approved Maintenance Organisation (AMO) certificate from the Nigerian Civil Aviation Authority (NCAA). This certification enables FAI to conduct a range of maintenance, repair and overhaul (MRO) tasks on Nigerian-registered business aviation aircraft globally. The scope of this new certification covers all aircraft supported by FAI Technik, including Bombardier Challenger BD-100, CL-600 series, BD-700-series and Learjet 60 aircraft. It also encompasses the full range of Hawker HS125 series, Beechcraft Premier 1/1A, and King Air series, as well as line maintenance checks up to 1C for Gulfstream models, including G280, G450, G500, G550, G650, and G650ER. FAI Technik has been active in Nigeria for over a year, primarily providing AOG (aircraft on ground) support through partnerships with local Part-145 maintenance organisations. Following this approval, the MRO is now authorised to release Nigerian-registered aircraft under the FAI Technik brand. Maintenance can be carried out either at FAI's Nuremberg (NUE) and Berlin Brandenburg Airport (BER) locations, or locally at facilities in Lagos and Abuja, Nigeria. It is expected that larger maintenance projects will be primarily scheduled at the Nuremberg facility. Michael Axtmann, Managing Director of FAI Technik, commented: "We are pleased to receive this latest important approval from the Nigerian CAA. FAI Technik is experiencing strong demand for maintenance support in Nigeria and across Africa in general. We look forward to continuing to build strong relationships in Nigeria and growing our customer base. We remain committed to expanding our presence in this market."

Michael Axtmann (l) receives the AMO certificate from Toks Fadairo (r) *© FAI Technik*

Wafra acquires controlling stake in Aquila Air Capital

Wafra Inc., a global alternative asset manager based in New York, has acquired a controlling stake in Aquila Air Capital (Aquila), a prominent engine lessor. Wafra has signed definitive agreements to acquire the Aquila platform from Warburg Pincus, a global growth investor. Through this transaction, Wafra will take a controlling interest in Aquila and provide significant capital to support the company's ongoing expansion. This move is expected to close in the fourth quarter of 2024, subject to regulatory approvals. Aquila Air Capital was established in 2021 by Warburg Pincus, CEO Al Wood and Kepler Hill Capital, with the goal of building a specialised finance business within the commercial aerospace sector. Initially focusing on the purchase, financing, and leasing of mid-to-late-life aircraft and engines, Aquila has grown into a comprehensive leasing platform over the past three years. The company now offers in-house origination, lease management, and technical oversight, becoming a valued partner for buyers, sellers, and operators throughout the aviation asset value chain. Wafra's Chief Investment Officer, Adel Alderbas, views the acquisition as a strategic extension of Wafra's infrastructure portfolio, praising Aquila for its differentiated business model and commitment to providing essential equipment solutions to its global airline customers. Wafra's Managing Director, Edward Tsai, highlighted the firm's experience in transportation asset leasing, including sectors like rail, shipping, and aviation, and expressed confidence that Wafra's expertise and capital will accelerate Aquila's growth. Aquila will remain an independent business led by its current management team, and Atlas SP Partners will provide a credit facility to support the acquisition and future growth of the company. Financial details of the transaction were not disclosed.

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BAS opens new stock hub in Shannon, Ireland

BAS' new facility in Shannon, Ireland *© Broward Aviation Services*

Broward Aviation Services (BAS) has launched a new state-of-the-art stock facility in Shannon, Ireland. The facility includes a 10,000 ft² warehouse and office space with an inventory valued at approximately US$15 million. Situated near Shannon International Airport, this strategic development aims to reduce air miles for parts deliveries while building a global distribution network, starting with the EMEA region. The Shannon hub will serve as a commercial centre focused on sales, customer support, and Aircraft on Ground (AOG) services. It will be fully supported by BAS headquarters in Florida, US. Although further expansion in Ireland is possible, BAS plans to open its next distribution hub in Asia. Tracey Downes, Managing Director of Broward Aviation Services Ireland, emphasised the benefits the Shannon facility will bring to BAS' European, Middle Eastern and African (EMEA) customers. "We have found that EMEA customers value BAS' renowned quick response times, and now, with a presence right on their doorstep, they are eager to do business with us for aircraft and engine parts," said Downes. Ireland's strong aviation ecosystem, with its skilled teardown facilities, maintenance, repair and overhaul (MRO) centres, and repair shops, provides significant opportunities for BAS. The company plans to collaborate with these local facilities to enhance efficiency in aircraft and engine dismantling. Downes highlighted that making these processes more efficient would allow BAS to pass on cost and time savings to airlines across the EMEA region.

QAI Aviation expands operations and increases hangar space

QAI Aviation has announced a major expansion through a recent asset purchase, including additional hangar space at Rostraver Airport. The new space increases the company's footprint by an additional 15,000 ft^2, bringing the total to approximately 100,000 ft^2 of hangar space. "This strategic purchase marks a pivotal moment in QAI's growth trajectory and underscores its commitment to enhancing service offerings and operational efficiency," said QAI Aviation President Bob Sieber. The newly acquired assets include tooling equipment, engineering data, and facilities that will enable QAI Aviation to broaden its service capabilities, meet increasing market demand, and strengthen its competitive position within the industry. This expansion supports QAI's ongoing mission to provide top-tier aviation services with the latest technology and superior performance. "The addition of these assets enhances our operational capacity and reaffirms our dedication to delivering exceptional value to our customers. We are excited about the opportunities this expansion brings and look forward to leveraging these assets to drive innovation and efficiency," said Sieber. The company is currently based at Allegheny County Airport (KAGC) in West Mifflin, PA. As the primary FAA-designated reliever for Pittsburgh International Airport, it handles a high volume of general, business, and corporate aviation activities.

© QAI Aviation

BP Aero gains GE CF34-10 engine maintenance authorization

BP Aero, a provider of engine maintenance, repair, and overhaul (MRO) services, has obtained new authorisation and execution of GE Aerospace's CF34-10 technical data licence. This advancement enhances BP Aero's service portfolio within the ITP Aero group and strengthens the company's position for future growth in providing full engine lifecycle propulsion services. Securing the CF34-10 licence, and OEM authorisation is a strategic move to expand BP Aero's range of component overhaul and engine repair services. The company already offers aftermarket services for a wide array of engine models, including the LEAP, CFM56 – 3/5A/5B/5C/7B, CF6 – 80C2, CF34 – 3/8C/8E, F119, F135, GE90, and V2500 – A5/D5 engines. As part of ITP Aero, BP Aero contributes to ITP Aero's overall MRO strategy and the expansion of aftermarket capabilities across several key engine platforms currently in operation. Additionally, BP Aero represents ITP Aero's inaugural presence in the United States, marking a significant growth milestone for ITP Aero in the region.

CF34-10 engine © *ITP Aero*

GE Aerospace and Lilium join forces to build eVTOL safety standards

With eVTOL (electric vertical take-off and landing) aircraft set to become commercially viable in the coming years, GE Aerospace has partnered with Lilium, the electric aircraft manufacturer and pioneer in regional air mobility (RAM), to lay a robust safety foundation for this new mode of transportation. Together, the companies are combining their flight data and analytics platforms to develop scalable flight data management solutions, ensuring proper safety standards and guidelines for eVTOL operators. At the heart of this collaboration is GE's Event Measurement System (EMS) platform, a key component of Lilium's comprehensive aftermarket offering, "POWER-ON". This service provides safe, efficient and customer-focused solutions for Lilium Jet operators. Customers will benefit from a variety of digital services offering critical insights and actionable data to support day-to-day operations. The Lilium Jet is already flying at demonstration and testing sites in the US, Europe, and Asia, with first customer deliveries expected by 2026. JP Morgan forecasts the eVTOL market to grow to US$1 trillion by 2040. As part of their collaboration, GE Aerospace and Lilium will create an OEM-level Flight Data Monitoring (FDM) or Flight Operations Quality Assurance (FOQA) programme to monitor the safety of eVTOL operations on a fleet-wide scale. Additionally, the partnership will establish an optional voluntary FDM programme for Lilium customers, developed collaboratively by the two companies. GE's EMS is already used by over 60 airlines and more than 500 business jet operators worldwide for FDM/FOQA. The partnership will leverage the data from Lilium's Fleet Optimizer, the core platform for all Lilium Jet-related data and analytics, integrating it with GE's EMS platform. This integration will enable both companies to develop scalable FDM solutions and establish a strong safety foundation for eVTOL operators. Through this partnership, GE and Lilium will also explore ways to enhance the efficiency and reliability of Lilium Jets by combining the strengths of Fleet Optimizer and EMS.

Snow Peak Capital acquires TurbineAero for global MRO growth

Snow Peak Capital, LLC, a private equity firm specialising in middle-market investments, has acquired TurbineAero, Inc., the independent provider of MRO services for aircraft auxiliary power units (APUs) and other aero engine components. The acquisition was made from The Gores Group, a global investment firm, though specific financial details were not disclosed. TurbineAero, founded in 1977, offers a comprehensive range of APU-related services, including repair, sales, leasing, testing, and certification of APUs and associated components. The company also undertakes specialised coatings for both new and refurbished aero engine components and aerospace applications, enhancing the durability and performance of critical engine parts. TurbineAero operates four facilities near Phoenix, Arizona and has recently expanded with a modern facility in Bangkok, Thailand, further strengthening its international footprint and operational capacity. Steve Yager, managing partner of Snow Peak Capital, highlighted TurbineAero's longstanding role within the aerospace sector, noting the company's established relationships with significant clients in commercial and military aerospace markets worldwide. Snow Peak aims to leverage TurbineAero's reputation and industry relationships to further its influence and service reach within these markets. Snow Peak partner Anthony Chirikos expressed confidence in TurbineAero's management team, emphasising the trust built during their collaboration. Chirikos anticipates that TurbineAero's business will continue to grow, enabling the company to address evolving customer needs more effectively.

VSE Corporation announces acquisition of Kellstrom Aerospace

© Kellstrom Aerospace

VSE Corporation (VSE) has signed a definitive agreement to acquire Kellstrom Aerospace Group (Kellstrom), a portfolio company of AE Industrial Partners, and a diversified global distributor and service provider supporting the commercial aerospace engine aftermarket. The transaction is subject to customary closing conditions, including regulatory review, and is expected to close in the fourth quarter of 2024. The total consideration for the transaction is approximately US$200 million, consisting of around US$185 million in cash and US$15 million in shares of the company's common stock, subject to working capital adjustments. The acquisition is expected to be funded by anticipated proceeds from an equity financing and borrowings from VSE's existing credit facility. Kellstrom aligns closely with VSE Aviation's growth strategy by enhancing exposure to the commercial aerospace engine aftermarket, where it combines new customers, distribution products, MRO capabilities, and technical services, driving growth in this rapidly expanding sector. With over 95% of its distribution revenue stemming from long-standing relationships with leading OEMs, Kellstrom supports VSE Aviation's core OEM-centric strategy. Additionally, approximately 50% of Kellstrom's revenue comes from outside North America, particularly in the high-growth APAC region. The integration of Kellstrom is expected to create significant synergies, as it complements VSE Aviation's technical OEM-focused distribution business and enhances the capabilities of the recently acquired Turbine Controls, Inc.

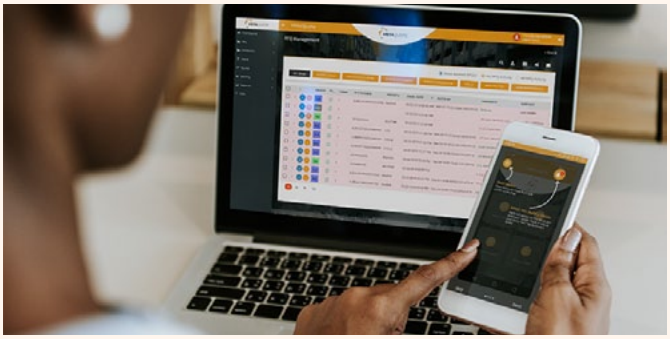
PAG acquires ICON Aerospace and TAG Aero

Precision Aviation Group (PAG) has acquired ICON Aerospace (ICON) and TAG Aero (TAG). These strategic moves significantly enhance PAG's capabilities in avionics and engine services while broadening its product offerings within the airline market. ICON, based in Indian Trail, North Carolina, is a provider of MRO services, focusing on avionics, accessories, and electronics. TAG, located in Rock Hill, South Carolina, is renowned for its MRO services, particularly for auxiliary power units (APUs). TAG offers a comprehensive suite of services that includes repair and overhaul, outright sales, leasing, and exchanges for Honeywell GTCP-85, 131, and 331 Series APUs. The integration of ICON and TAG into PAG will enable the combined customer base to benefit from an expanded range of products and services. David Mast, President and CEO of PAG stated: "The acquisition of ICON and TAG significantly bolsters our capabilities in our engine and avionics services businesses and provides expanded product offerings for the airline market. The addition of ICON and TAG's skilled workforce of over 200 employees, their experienced leadership teams, and more than 150,000 square feet of state-of-the-art facilities enables us to better support the needs of our customers." Jeff Lambert, CEO of ICON and TAG, echoed this sentiment, stating: "We are excited to join PAG and leverage their resources and global reach. This partnership enhances our ability to serve our customers, providing them with faster service times and broader technical capabilities." Both ICON Aerospace and TAG Aero are FAA/CAA/EASA-approved repair stations, specialising in avionics, accessories, electronics, and APU repair and overhaul services for the aerospace industry. This acquisition positions PAG for further growth in the aerospace and defence sectors, enhancing its service capabilities and strengthening its market presence.

APOC Aviation secures multi-million funding from Deutsche Bank

APOC Aviation has secured a multi-faceted financing facility with Deutsche Bank through its transportation structured finance group. The funds will be utilised to expand APOC's existing business portfolio while supporting further vertical integration of future complementary solutions. The flexibility provided by Deutsche Bank will allow APOC to grow substantially in both the short and medium term. APOC plans to allocate US$140 million for capital expenditure on aircraft and engine assets over the next twelve months. "APOC is pursuing a dynamic trajectory as the business capitalises on opportunities that have been identified for expansion. We are pursuing a strategy of controlled growth that will propel APOC into a different stratum for trading, stocking and leasing aircraft assets," commented Gavin Simmonds, CEO. "We will be very active in the market globally, so capital backing from an international major bank with an impeccable pedigree and reputation validates our plans. At the outset, we were focused on securing a facility of appropriate size with diverse borrowing criteria across a broad portfolio and aligned to our ambitious growth strategies. We have found Deutsche Bank's open approach to be closely aligned to APOC's company ethos and aspirations." APOC's majority shareholder is private equity investor Egeria, which has worked closely with the company since 2020. The Netherlands-based fund continues to drive APOC's transformative global presence, focusing on ongoing vertical integration as the industry experiences sustained recovery.

Ambry Hill Technologies and **Locatory.com** have announced a partnership that integrates their aviation software products, creating a more efficient and automated solution for managing inbound RFQs, customer quoting, and inventory availability in the aviation marketplace. This collaboration is aimed at improving sales efficiency, reducing manual data entry and driving revenue growth for aviation businesses through advanced automation and seamless system integration. Locatory.com's global aviation parts marketplace now integrates with Ambry Hill's Vista-Quote.com, a platform designed to automate RFQ and quote processes. By automating the entire RFQ process for users on both platforms, the integration enables faster response times and minimises repetitive data entry. Users can manage quoting, sales and inventory workflows from a single platform while maintaining connectivity with their Enterprise Resource Planning (ERP) systems or legacy databases, ensuring transactional and historical recordkeeping remain intact. In addition to the benefits of integration, Vista-Quote users can leverage artificial intelligence (AI) to interpret RFQ emails and automate much of the quoting process, reducing the time required to prepare quotes. The system can automatically generate accurate quotes with all necessary details, streamlining tasks that would previously require manual input. These automation capabilities allow businesses to auto-quote between 50% and 80% of their RFQs, significantly improving operational efficiency. The partnership also enhances users' ability to handle more sales inquiries across multiple marketplaces, including Locatory.com, without increasing their manual workload. This integration offers the potential for users to expand their sales reach globally, acting on a broader range of sales opportunities. The combined power of Vista-Quote's automation and Locatory.com's marketplace platform provides a strategic advantage for companies looking to grow their presence in the aviation market. With this new integration, Vista-Quote users are encouraged to join Locatory.com to maximise their sales potential, particularly as the aviation industry continues to evolve and global demand for parts and services increases.



Ambry Hill Technologies and Locatory.com have announced a partnership that integrates their aviation software products *© Ambry Hill Technologies*

Rolls-Royce's Power Systems division has selected IFS cloud *© IFS*

Rolls-Royce's Power Systems division, under its mtu-brand, will implement **IFS** Cloud to enhance its global service operations and support its strategic goals of efficiency, sustainability and growth. As Power Systems transitions to a solution-provider approach, with over 10,000 employees, it sought an innovative solution to improve service-level agreement (SLA) fulfilment and boost scheduling efficiency. Using Industrial AI, IFS Cloud will transform service operations by delivering advanced real-time insights and dynamic scheduling capabilities, streamlining service workflows and providing more agile and accurate service to clients worldwide. Through the IFS Cloud Planning, Scheduling and Optimisation (PSO) module, Rolls-Royce's Power Systems division will gain improved visibility into service data, enabling the expansion of long-term maintenance contracts and increasing spare parts sales. This optimisation will enhance scheduling and engineer deployment, improving first-time fix rates and ensuring consistent SLA fulfilment across its engine fleet. IFS Cloud's What-If Scenario Explorer (WISE) will further enhance planning by simulating different scenarios for resource allocation, maintenance scheduling and capacity planning. By anticipating challenges such as demand fluctuations or technician availability, Rolls-Royce's Power Systems will make proactive, data-driven decisions, better aligning operations with SLAs and improving resource efficiency. Joern Lindstaedt, VP Global Customer Service – Power Systems at Rolls-Royce, said: "After evaluating various potential partners, it was evident that IFS Cloud would significantly transform our service operations, making it the clear choice. With enhanced real-time insights and dynamic scheduling, we anticipate substantial improvements in service delivery and customer satisfaction, supporting our efficiency and sustainability goals." Automating much of the planning and dispatching process with IFS Cloud will reduce the need for manual interventions, enabling new dispatchers to quickly manage resource allocation, schedule service appointments and adjust plans with greater ease.

StandardAero renews service arrangement with Pinnacle Air Network

StandardAero has renewed its engine service arrangement with the Pinnacle Air Network, a coalition of 18 reputable independent fixed base operators (FBOs), maintenance, repair and overhaul providers, and aircraft sales and charter companies situated across North America. Under this agreement, StandardAero will provide MRO services for various engine platforms, including the Pratt & Whitney Canada PT6A turboprop, PT6T turboshaft and JT15D/PW300/PW500 turbofans, as well as the Honeywell TFE731 turbofan. These services encompass engine overhaul, hot section inspection (HSI), and repair, ensuring that the Pinnacle Air Network, its members, and end-user clients receive timely, responsive, and cost-effective support to keep their aircraft operational. Notably, StandardAero celebrated the completion of its 1,500th engine event for the Pinnacle Air Network last October.

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Highlights from Aviation Week Network's MRO Europe in Barcelona

TARMAC Aerosave, EastMerchant to recycle A380 aircraft

TARMAC Aerosave and EastMerchant signed the new recycling contract at the MRO Europe in Barcelona *© TARMAC Aerosave*

At the MRO Europe exhibition in Barcelona, a significant contract was signed between TARMAC Aerosave, a French aircraft recycling specialist, and EastMerchant, a German aviation services provider. This agreement is centred on the dismantling and recycling of three Airbus A380 aircraft, which will take place at TARMAC Aerosave's Tarbes facility in France over the coming months. These three aircraft, stored by TARMAC, will not be returned to service, and instead, their components will be repurposed for the secondary market. As TARMAC Aerosave works on returning a total of 29 A380s to service by 2024, there is increasing demand for spare parts for the iconic wide-body aircraft. EastMerchant, which provides integrated aviation services and innovative end-of-life solutions for its investors and airline clients, has recognised this demand. The company has partnered with Skyline Aero, a United Kingdom-based supplier of used serviceable materials (USM), to manage the selection and sale of relevant parts from the three retired A380s. Skyline Aero will handle all aspects of sales and distribution from its UK headquarters. TARMAC Aerosave has extensive experience in both maintaining and recycling A380s. Since 2021, it has returned 29 A380s to service and will have recycled a total of 15 A380s, including the three mentioned in this new agreement. This expertise in dismantling and recycling aircraft has been recognised by the Aircraft Fleet Recycling Association (AFRA), which has awarded TARMAC Aerosave its highest "Diamond" accreditation level for dismantling and recycling. Alexandre Brun, CEO of TARMAC Aerosave, expressed enthusiasm about continuing work on the A380, stating that the company is proud to contribute to the extension of the A380 fleet's operational life while responsibly recycling what is no longer in use. This partnership highlights the growing importance of sustainable end-of-life strategies for wide-body aircraft in the aviation industry.

AJW Group appoints Mitsui & Co. as sales representative in Japan

AJW Group is further strengthening its presence in Japan with the appointment of Mitsui & Co. as its exclusive sales representative. This strategic partnership enhances AJW Group's ability to support the Japanese market, facilitating the supply and support of aircraft components through contracted services such as power-by-the-hour (PBH). It also provides comprehensive maintenance, repair and overhaul (MRO) capabilities for aircraft components within the region. Aligned with AJW Group's global growth strategy, this collaboration will expand the Group's footprint in Japan's aviation sector. AJW Technique, the Group's MRO facility based in Montreal, was the first independent component MRO in the world to receive Japan Civil Aviation Bureau (JCAB) approval under the Bilateral Aviation Safety Agreement (BASA) with Transport Canada (TCCA), a milestone achieved in January 2019. This recognition highlights AJW Technique's adherence to JCAB regulations and positions the Group as a trusted partner in the Japanese MRO market. Nick Ward, Senior Vice President of Global Sales and Business Development at AJW Group, said: "Our partnership with Mitsui expands our ability to enhance our aircraft components and supply chain solutions to serve this key market and provides enhanced MRO support for our Japanese customers, utilising AJW Technique's extensive capabilities."

Joramco signs parts agreement with Boeing at MRO Europe 2024

Joramco has signed a parts agreement with Boeing during the Aviation Week Network's MRO Europe event in Barcelona. The two-year agreement establishes a Boeing tailored parts package, which will encompass consumables and expendable parts sourced from various locations within Boeing's global parts distribution network. Fraser Currie, Chief Executive Officer of Joramco, expressed enthusiasm about the partnership, stating, "We are delighted to partner with Boeing. This agreement reaffirms our commitment to delivering world-class maintenance services, ensuring Joramco continues to meet the evolving needs of our customers and maintain the highest standards of quality and safety." William Ampofo, Senior Vice President of Parts & Distribution and Supply Chain at Boeing Global Services, highlighted the benefits of the agreement, noting, "This tailored parts package agreement will provide a cost-effective and efficient framework to help support Joramco's parts inventory requirements for their MRO facilities."

AFI KLM E&M and Air Europa sign maintenance contract for Boeing 787 fleet

Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) and Air Europa have signed a new contract for comprehensive maintenance support for Air Europa's Boeing 787 aircraft. Effective from March 1, 2024, this agreement underscores AFI KLM E&M's commitment to delivering exceptional value and service excellence. It also strengthens the longstanding relationship between the two companies, which extends from maintenance to passenger activities through codeshare agreements and their membership in the SkyTeam alliance. This new contract represents a significant milestone, showcasing AFI KLM E&M's reliability and extensive expertise in supporting the Spanish airline's flagship aircraft. The agreement includes the establishment of a Main Base Kit in Madrid, specifically dedicated to Air Europa's Boeing 787 fleet. This strategic initiative not only enhances operational performance but also reflects AFI KLM E&M's commitment to providing superior component support to Air Europa. Furthermore, this contract marks a considerable expansion of AFI KLM E&M's presence in Spain. The company currently supports several Spanish operators across a variety of aircraft types, including the A320, A330 and A350, and provides APU maintenance as well as base maintenance for a large fleet of A320s. This new agreement with Air Europa further solidifies AFI KLM E&M's position as a leading maintenance provider in the region.

AFI KLM E&M will provide maintenance support for Air Europa's Boeing 787s ©AirTeamImages

Fokker Services Group partners with Airmaster for Boeing 737NG support

Fokker Services Group (FSG) has signed an agreement with Egyptian cargo operator Airmaster, marking the first cargo operator to join FSG's Boeing 737NG nose-to-tail (NTT) programme. This partnership was announced at the MRO Europe event in Barcelona on October 23, 2024. The agreement provides component support for Airmaster's Boeing 737-800F aircraft, ensuring smooth operation as the newly established airline rapidly expands. FSG will service various critical components, including engine accessories, hydraulic actuators, valves, cockpit controls and instruments. FSG has expanded its in-house repair capabilities for the Boeing 737NG platform, focusing on boosting fleet reliability. The addition of Airmaster to FSG's growing customer base demonstrates the programme's success in providing reliable and flexible support for Boeing 737NG operators.

Airmaster Boeing 737 © *FSG*

GE Aerospace secures ten-year agreement with Emirates

GE Aerospace has announced a ten-year, multi-million-dollar services agreement with Emirates, focusing on the electrical load management system for its Boeing 777 fleet. This agreement is supported by GE Aerospace's operations in Cheltenham, UK. Emirates is the largest operator of the Boeing 777, boasting a fleet of 143 aircraft. Electrical load management systems are crucial for enhancing the safety and efficiency of aircraft by optimising the management and distribution of electrical power throughout the aircraft. The programme for Emirates' Boeing 777 fleet will provide a comprehensive solution for through-life support, encompassing repairs, stock holding, inventory management, programme management, configuration control, engineering change control, technical documentation, obsolescence management, and reliability trend analysis. As part of this new agreement, GE Aerospace's inventory in Dubai will be consolidated with Emirates' stock and stored at Emirates' facility. This strategic consolidation aims to enhance stock availability and improve lead times, ultimately elevating service levels. GE Aerospace has developed various integrated logistics management and performance-based logistics programmes as part of its service offerings. Each component of these programmes is customised to meet specific customer requirements, including improved parts availability, shortened supply chains, enhanced operational efficiency and reduced life-cycle costs.

ITP Aero launches new brand identity

ITP Aero has unveiled its new brand identity, celebrated 35 years of industry expertise and marked its evolution into an independent company with a renewed focus on innovation, efficiency, and sustainability in aviation. Under the tagline "Flying forward, together," this rebranding aligns with the company's Purpose: "Together, find better ways to power flight and keep its magic alive." Revealed at MRO Europe in Barcelona, the new brand symbolises ITP Aero's commitment to next-generation flight technologies and collective progress. The visual transformation reflects its strategic shift, reinforcing the company's leadership role in the aerospace industry and its ambition to drive future innovations. The rebranding comes at a time of rapid expansion for ITP Aero, supported by significant investments in research and development, enhanced maintenance, repair and overhaul capabilities and its involvement in the Future Combat Air System (FCAS). Over the past year, ITP Aero's global workforce has grown by more than 10%, driven by strategic collaborations with key industry players, showcasing the company's strong momentum in an evolving aerospace market. ITP Aero is focused on accelerating growth by strengthening its partnerships and continuing to invest in cutting-edge aeroengine technologies. These innovations aim to advance both commercial and defence aviation, shaping a more efficient and secure future for the aerospace sector. The company is also expanding its MRO capabilities to provide full lifecycle propulsion services, ensuring reliable and scalable solutions for its global customers.

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Joramco expands partnership with SmartLynx Airlines

Fraser Currie (l) CEO of Joramco and SmartLynx Airlines CEO Edvinas Demenius (r) at the signing of the new contract
© Joramco

Joramco, the Amman-based MRO facility and the engineering arm of Dubai Aerospace Enterprise (DAE), has announced an expansion of its partnership with SmartLynx Airlines for the 2024 winter season. The extended collaboration will see Joramco conduct 28 comprehensive aircraft checks, covering A330, A320 and B737 aircraft. This renewed agreement, signed at MRO Europe 2024, deepens the companies' long-standing relationship and solidifies their partnership for the future. Fraser Currie, CEO of Joramco, expressed his pleasure at continuing the collaboration with SmartLynx Airlines, emphasising that the agreement reflects the trust customers have in Joramco's expertise. He stated, "We are pleased to renew our collaboration with SmartLynx Airlines. This agreement demonstrates the strong trust our customers have in Joramco and advances our partnership to the next level. We look forward to further deepening our cooperation in the future." SmartLynx Airlines CEO, Edvinas Demenius, highlighted the importance of reliability in the ACMI sector, noting, "Reliability is key in the ACMI sector, and choosing the right partners is crucial for our success. Joramco has proven to be a dependable partner, and we have high expectations for our future collaboration." Joramco's expanded partnership with SmartLynx showcases the company's growing expertise in aircraft maintenance, particularly for narrow-body and wide-body aircraft, positioning it as a reliable partner for airlines in the global aviation sector.

AEM/AMETEK MRO signs new landing gear service agreement

AEM/AMETEK MRO is contracted by Liebherr to provide E-Jet E1 landing gear MRO across the EMEA region *© AEM*

AEM/AMETEK MRO has signed a landing gear service agreement with Liebherr-Aerospace to provide MRO services for the Embraer E-Jet E1, specifically the E190 platform, to operators across the EMEA region. This agreement builds on the initial memorandum of understanding (MOU) that established their partnership in 2022. With air traffic rebounding strongly post-pandemic, AEM is set to take on increased landing gear workload from Liebherr-Aerospace at its Ramsgate facility in the UK. As a reputable MRO provider, AEM is well-equipped to support the original equipment manufacturer (OEM) in offering high-quality and efficient services, thereby enhancing the availability of overhaul slots for E-Jet E1 operators. Mike Audus, Divisional VP & Business Unit Manager – Aerospace Europe at AMETEK MRO, stated, "This partnership fully endorses our relationship with Liebherr and showcases AEM's capabilities as a leading landing gear maintenance provider." Andy Wheeler, Divisional Vice President and Managing Director of AEM, highlighted the expertise of its Ramsgate team, noting that their consistent delivery of quality MRO services meets the high standards expected by Liebherr's customers. He remarked that the full contract underscores the confidence placed in AEM and enhances their broader landing systems capabilities.

Strategic partnership between ADE and Revima to boost digital fleet management

Vikram Singh, Director of New Services, Revima, Olivier Legrand, President and CEO of Revima, Adnan Mansur, Head of Digital & Innovation Services, ADE (l-r) © *ADE*

Asia Digital Engineering (ADE) has entered into a strategic collaboration with Revima to enhance ADE's digital fleet management platform, ELEVADE™, by integrating Revima's advanced APU predictive maintenance solution, PREDICARE. The signing ceremony took place at Aviation Week Network's MRO Europe, the leading event for the commercial aviation aftermarket. Revima, a well-known independent specialist in auxiliary power unit (APU) maintenance, repair, and overhaul, currently supports over 250 aircraft worldwide using PREDICARE. This real-time predictive maintenance and engineering support tool aims to deliver proactive solutions that minimise downtime and improve fleet reliability. ELEVADE™ is an innovative all-in-one digital solution specifically designed for the airline and MRO industries, making it the first of its kind in Asia. The platform integrates essential functions such as fleet management, aircraft health monitoring, and workforce optimisation, thereby enhancing aircraft maintenance and engineering management. Built on three key pillars—Fleet, People and an upcoming Material feature—ELEVADE™ currently monitors more than 200 aircraft and 3,000 personnel across the ASEAN region, with three additional Asian airlines conducting trials to explore its benefits. This collaboration seeks to integrate PREDICARE into ADE's ELEVADE™ platform, transforming it into a comprehensive solution for airlines. This integration will allow operators to manage predictive maintenance across multiple aircraft systems seamlessly within a single, unified platform, significantly enhancing operational efficiency and fleet oversight. A crucial phase of the partnership will involve the integration of PREDICARE with ADE's primary airline customer, AirAsia, focusing on a number of its A320 aircraft to ensure operational readiness. Following this trial phase, the solution is set to be rolled out to airline customers worldwide who utilise the ELEVADE™ platform, thereby strengthening ADE's digital service offerings even further.

Fokker Services Group partners with Red Sea Airlines for component support

Fokker Services Group (FSG) has announced a new partnership with Egyptian carrier Red Sea Airlines. The agreement involves FSG providing a comprehensive component support programme for Red Sea Airlines' fleet of two Boeing 737-800 aircraft. Red Sea Airlines operates both scheduled and charter flights and is currently undergoing rapid expansion. Under the terms of this agreement, FSG will service a wide range of aircraft components, ensuring the continuous operation of Red Sea's fleet. These components include integrated drive generators (IDGs), engine accessories, hydraulic actuators, valves, cockpit controls and instruments, among others. The collaboration aims to support the airline's growing operations by ensuring critical components are available when needed, enabling Red Sea Airlines to maintain its high-utilisation business model. Leon Kouters, Vice President of Sales & Marketing at FSG, highlighted the significance of the partnership for the company: "With the continued development of this programme, we remain fully committed to driving excellence in the B737NG aftermarket, leveraging our expertise in design, production and maintenance. We are honoured to have been chosen by Red Sea Airlines as our first Egyptian partner for this platform." The agreement with Red Sea Airlines marks an important milestone for FSG's Boeing 737NG NTT programme, which continues to grow as a convenient and flexible solution for operators of Boeing 737NG aircraft. This partnership further solidifies FSG's position as a key player in the B737NG aftermarket, while supporting Red Sea Airlines' ambitions to expand its presence in the aviation industry.

Tamarack Aerospace announces Rheinland Air Service partnership

Tamarack Aerospace Group has announced its expanded presence in Europe through a new dealership agreement with Rheinland Air Service (RAS) in Germany. This partnership will bring Tamarack's revolutionary Active Winglet technology to German aircraft owners and operators, benefitting from RAS's extensive expertise and high service standards. Based in Moenchengladbach, Rheinland Air Service will now offer installations of Tamarack's patented Active Winglets, further strengthening Tamarack's foothold in Europe. RAS will ensure efficient installations, known for minimal downtime, enabling customers to enhance their aircraft's fuel efficiency, range, safety, and performance. Tamarack's Active Winglets are especially attractive to European customers for their emissions reductions and noise pollution improvements. RAS Director of Business Aviation Maintenance, Ingo Plückthun, stated: "We carefully evaluated the performance and safety benefits of the Tamarack upgrade across

© Rheinland Air Service

aircraft models from the M2 to the CJ3+. After thorough analysis, we are proud to offer this high-quality upgrade to our customers." Tamarack CEO, Nick Guida, expressed his excitement to partner with Rheinland Air Service: "This partnership expands our global network, allowing more aircraft owners in Germany and beyond to benefit from our fuel-saving, emission-reducing technology. RAS's commitment to quality aligns perfectly with Tamarack's values." Tamarack's Active Winglets are a lightweight, innovative solution that significantly boosts aircraft performance, offering fuel savings, improved climb performance, and enhanced safety without structural modifications. With nearly 10% of the CitationJet fleet already upgraded with Tamarack technology, demand continues to rise following a positive safety update from the NTSB earlier this year.


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Bo Lump, SVP Business Development, SR Technics © SR Technics

Engine Maintenance Is Our Company's Core Strength

Talking to Bo Lump, Senior Vice President Business Development, SR Technics

AviTrader MRO: SR Technics has recently sold its airframe maintenance business to EasyJet to focus on engine maintenance. What led to the decision to exit the base maintenance business?

Bo Lump: Coming out of the COVID-19 period, SR Technics recognized that engine maintenance is our company's core strength. We've been exploring ways to streamline our focus on engine maintenance, and the opportunity to partner with EasyJet, a longstanding partner, seemed ideal. It benefits both the company and the employees involved.
This transition provides a great opportunity for both SR Technics and our dedicated employees. It aligns with our strategy to focus on the core of our business, which is engine maintenance.

Recently, you opened a new Pratt and Whitney GTF engine shop and a second test cell. Could you share your future plans for the engine maintenance business?

Our focus will remain on servicing both legacy platforms like the CFM 56-5B and 7B engines, as well as the Pratt 4000, which we'll continue supporting. At the same time, we're preparing to service new platforms, which are essential for our future growth as older models eventually phase out.
We're fortunate to join the GTF network, positioning us on a modern platform. We received our first GTF engine in July and officially inaugurated the new facility and test cell last month in September.
SR Technics is investing significantly to revitalize an old test cell and build new facilities, giving us the capacity to handle both legacy and new lines. This expansion will double our engine maintenance capacity by 2028, a substantial growth milestone.

Extensive in-house repair capabilities are crucial in engine maintenance. How do you see SR Technics' current and future capabilities in this area?

Our in-house repair capabilities are a key advantage, with over 90% repair rates on the CFM and PW 4000 engine. This is particularly valuable amid widespread supply chain challenges. We plan to maintain this repair approach for new engine platforms as well.
In addition to in-house repairs, we offer third-party repair services, including at our facility in Ireland, which specializes in airfoils, a critical component of engine maintenance. This facility is expanding to accommodate new repair needs for upcoming engine models.

Does SR Technics offer end-of-life solutions for aging engine types?

Yes, we do offer end-of-life solutions, though they are customized based on each operator's needs. Operators with leased assets often return them to the lessor, while those who own their assets look for ways to extend their life due to delays in new hardware.
Our end-of-life solutions include options like module swaps - mainly for LPTs and core power solutions, asset monetization, and other specific measures. Each operator has unique requirements, so we tailor solutions to help them phase out their fleets effectively.
There's no one-size-fits-all solution, so our approach is to understand each airline's specific needs and create a solution that truly supports their goals.

LEAP engine maintenance at MTU Zhuhai
© Shutterstock

The Power Workhorses

Exploring the World of Maintenance for CFM International's LEAP and CFM56 Engines

By David Dundas

The CFM56 is the world's most commonly used jet engine for passenger aircraft with over 30,000 engines delivered, powering over 600 operators worldwide. Currently there have been more than 7,000 LEAP engines delivered, with an additional 20,000 as orders or commitments to buy. CFM56 engines are used in the twin-engine Airbus A320 family, in the first generation of the A340-200/-300 long-haul jet, and in the Boeing 737 Classic and 737 Next Generation. CFM International's advanced LEAP product line is the engine of choice to power the Airbus A320neo, the Boeing 737 MAX, and the COMAC C919.

With the popularity of these two engines, we decided to delve deeper into the world of maintenance to discover what it takes to ensure these remarkably complex feats of aerospace engineering continually operate both safely and efficiently. The following are invaluable insights provided by four leading engine MRO organisations who have been kind enough to share their knowledge with us.

What separates the LEAP from the CFM56 engine type in terms of design and maintenance?

The LEAP series, in simple terms, is an 'upgrade' of the original CFM56 engine that uses new technologies and materials, such as composites, to create a more efficient engine that requires reduced maintenance. However, there are far more complex differences, as outlined by Gunnar M. Sigurfinnsson, President, GA Telesis Engine Services Oy. "The LEAP engine indeed shares a structural similarity with the CFM56, but it incorporates significant advancements in design and materials. Utilising sophisticated software and supercomputers for optimisation has allowed engineers to enhance efficiency, reduce weight, and improve strength. The introduction of advanced materials, including composites commonly used in military engines, plays a crucial role in this evolution. These composite parts offer advantages such as improved durability and reduced maintenance needs, which can significantly lower operational costs. Additionally, the engine's systems and functions have been refined through advanced modelling techniques, leading to better performance overall. This combination of innovation in materials and design marks a notable step forward in engine technology."

Christian Ludwig, COO MTU Maintenance, Zhuhai makes an extremely valid comment with regard to the fact the LEAP engine is so new, there is much still to learn with regard to maintenance requirements as many have yet to have their first overhaul. "The biggest difference, of course, is that older generation CFM engines have decades of reliable service behind them, whereas we are still getting

to know the operations and needs of new generations of engines. There are very few surprises left when a CFM56 comes into the shop for maintenance, but not too many LEAP engines have had their first overhaul yet. So, we are still learning about any potential differences. Operationally, we have fewer repair opportunities for piece parts on newer engine models to date, and material availability remains challenging, as is the case across the industry at this time. More complex designs and new materials also require even more skills and attention from our mechanics, which is also reflected in a slightly longer learning curve. Also worth highlighting is that there are new requirements for non-destructive testing that call for new and more advanced NDT technology to be introduced."

Jay Aiken, VP Sales for the Americas, Europe, the Middle East & Africa (EMEA), Standard Aero Airlines & Fleets team helps us get a far more technical and precise view of several of the key differences. " Key design differences between the LEAP and the CFM56 include the use of fewer booster and fan blades, a maintenance-free composite fan; a foreign-object damage (FOD)-resistant core for low high-pressure compressor (HPC) maintenance costs; advanced high-pressure turbine (HPT) blades with active clearance control and improved castings/cooling; reduced lean burn combustor exit temperature variation for improved HPT component durability; and advanced 3-D aero, cooling paths and coatings. In terms of maintenance." Aiken further explains that: "CFM has fundamentally worked to ensured that operators benefit from a similar level of choice and competition to that associated with the CFM56 through the development of an open MRO ecosystem for the engine. The LEAP offers similar modular benefits to the CFM56 (i.e. fan/booster, core, LPT and accessories), though one difference is that the LEAP's life-limited parts (LLPs) include static parts (e.g., HPT and combustion cases). As with any new engine, LEAP operators have been experiencing a number of early service issues, though as the engine approaches maturity airlines are expected to benefit from the same exceptional reliability and time-on-wing already offered by the CFM56, notably thanks an extended low-pressure turbine (LPT) life."

Bruce Ansell, Technical Manager Engine Division, APOC Aviation provides

Christian Ludwig, COO MTU Maintenance, Zhuhai

> **"There are very few surprises left when a CFM56 comes into the shop for maintenance, but not too many LEAP engines have had their first overhaul yet. So, we are still learning about any potential differences."**
>
> *Christian Ludwig, COO MTU Maintenance, Zhuhai*

a very clear and concise overview of the differences between the LEAP and CFM56 engines: "The introduction of new advanced materials is proving to be a game-changer in engine design - stronger, lighter, greater temperature resistance - all material properties can be further developed to meet new design requirements. The maintenance of these engines can be quite different from the legacy CFM56, although the overall design is familiar, the new materials are driving different inspection & repair techniques."

© MTU Aero Engines

How has the introduction of new materials impacted on the maintenance procedures of the LEAP engines when compared to the CFM56?

Bruce Ansell touches on a common theme, and that is the fact that new materials bring with them new challenges, though he feels that: "Maintenance processes have not changed to any great extent, the inspection and repair has differences and a thorough understanding of the component, and material limitations have to be learnt. The new materials are still being developed and show great promise for extended time on wing in the future." Meanwhile, Christian Ludwig looks more specifically at individual differences between the two engines: "New advanced materials can be found in many modules starting from the fan blades and the fan case, in some bearings, as well as some HPT shrouds and LPT blades stages. While those are all different in application, the impact on maintenance varies. They all have strict inspection criteria in common, but at the moment, the repair options are limited."

Gunnar M. Sigurfinnsson takes this a few steps further in that he feels new materials and components necessitate change in repair and inspection techniques: "The introduction of new materials and advanced components in engines like the LEAP does necessitate updated inspection and repair methods. While these innovations improve performance and efficiency, they can also lead to higher maintenance costs due to the complexity of the new parts and the need for specialized tools and training. Repairs may be more limited because some advanced materials or components can't be repaired easily and may need to be replaced instead. This could increase the frequency of part replacements, impacting overall maintenance strategies. However, the long-term benefits, such as reduced fuel consumption and improved reliability, often offset these initial higher costs. Balancing maintenance needs with operational efficiency is crucial for operators managing these advanced engines."

Jay Aiken concurs with Bruce Ansell that, ultimately, maintenance processes are not significantly different for either engine, but with certain exceptions: "While the use of ceramic matrix composites (CMCs) and other advanced materials in the LEAP does require the adoption of a number of new process and repair technologies, the engine MRO industry is used to embracing innovative procedures and capabilities as newer generations of powerplants are introduced (an obvious example being the introduction of the CFM56 family 45 years ago). In StandardAero's case, we identified and assessed these new processes and repair technologies prior to engaging with the OEM for a LEAP CFM Branded Service Agreement (CBSA) license, and subsequently provided the CFM with a detailed plan of how we would stand up such capabilities. The resulting maintenance process is not significantly different than that for older engines such as the CFM56, though it does require the introduction of new tooling, processes and repair schemes – such as cold metals transfer (CMT) repairs and adaptive blending – along with the associated training for our technicians."

What are the deciding factors between repairing or replacing parts and have new materials changed these?

The 'repair or replace' task is a key focus of what some MROs refer to as the 'Cycle 2' stage of the engine MRO process, this being the point at which you assess an engine's condition (following teardown and inspection) and then you detail a plan for its repair (thus enabling the provision of a cost estimate to the operator, and to order and 'kit' the parts required). Just as with older engines, the 'repair or replace' task on the LEAP is initially driven by wear criteria and parts replacement policies which have been agreed with the OEM and documented in the engine's repair manuals where a new component failure is encountered, the issue will be referred back

> **"Repairs may be more limited because some advanced materials or components can't be repaired easily and may need to be replaced instead. This could increase the frequency of part replacements, impacting overall maintenance strategies."**
>
> *Gunnar M. Sigurfinnsson, President, GA Telesis Engine Services Oy*

CFM shop of MTU Maintenace Zhuhai *© MTU Aero Engines*

to the OEM for assessment and guidance. Jay Aiken explains further: "With specific reference to whether a worn or damaged component should be repaired or replaced, this will depend on a number of criteria, including guidance provided in the repair manuals, the availability of an industrialized part repair, and the replacement cost of the component in question. The lack of an existing component repair doesn't necessarily mean that we will immediately switch to replacing the component – we may work with our in-house Component Repair Services (CRS) team and the OEM to assess the validity of developing a new repair – though the time involved in developing a new repair (and the cost involved) will clearly determine whether this is a practical course of action to take."

Bruce Ansell feels that the repair/replacement decision is no different than that for the CFM in that it will always come back to safety, time, money, and availability. He further adds that: "The limitations of any wear, or damage, are provided in the engine manuals, which advise if a part is repairable, or not, and the process to be followed. If anything would result in the engine being off wing longer than required, then a new component will be considered." Gunnar M. Sigurfinnsson also urges caution as he points out that new parts and materials often come with stricter inspection limits compared to traditional components, This being due to their advanced designs and the need to ensure safety and performance under various operating conditions. He expands further when stating that: "... developing and implementing new repair methods can be a time-consuming process, which can lead to an increased reliance on component replacements during the initial phases of deployment. While this transition may lead to higher costs and more frequent replacements in the short term, it's crucial for manufacturers and operators to adapt their maintenance strategies accordingly. Over time, as repair technologies and inspection protocols evolve, there may be opportunities to mitigate these challenges and optimize maintenance practices. The initial investment in these new systems can ultimately lead to long-term gains in efficiency and reliability."

To round off this section, Christian Ludwig puts it nice and succinctly as he points out that LEAP maintenance is still a learning curve: "As the LEAP is a relatively young engine, entering service in 2016, we are still learning a lot about it from our shop visits at MTU Maintenance Zhuhai. CFMI, as the engine OEM, would set the conditions and parameters in relation to repairs and replacements, so we take their lead on it and complement it with our expert inspections. That combination gives us the final guidance whether a part will be replaced or repaired."

What is the perspective on the evolution of parts repair developments for the LEAP engine?

Bruce Ansell at APOC Aviation feels that where the whole process is concerned, little has changed for the LEAP engine: "The repair/replacement decision is no different to the CFM, it will always come back to safety, time, money, and availability. The limitations of any wear, or damage, are provided in the engine manuals, which advise if a part is repairable, or not, and the process to be followed. If anything would result in the engine being off wing longer than required, then a new component will be considered." However, Gunnar M. Sigurfinnsson at GA Telesis takes a different approach when considering new challenges brought by the LEAP engine and, in particular, supply chain problems. He comments: "Regarding supply chain issues and the current limitations in repair options. It's common for new engine models to face initial hurdles as MROs (Maintenance, Repair, and Overhaul providers) collaborate with the OEM (Original Equipment Manufacturer) to develop effective repair procedures. The ongoing dialogue between MROs and the OEM is crucial for addressing these challenges and ensuring

Bruce Ansell, Technical Manager Engine Division, APOC Aviation

> **"The CMC materials have significant possibilities, including 'self-healing' capabilities."**
>
> *Bruce Ansell, Technical Manager Engine Division, APOC Aviation*

that repair capabilities are expanded. As these partnerships evolve and more data becomes available, it's likely that the repair options will improve, helping to alleviate some of the supply chain pressures and maintenance costs associated with the LEAP engine. Your insights into the industry dynamics are valuable, especially as these developments unfold."

Jay Aiken at Standard Aero advises that the company is heavily involved in a hands-on approach as parts repair development for the LEAP is gaining good momentum, ahead of an anticipated wave of initial performance restoration shop visits (PRSVs). He further points out that: "As a CBSA, StandardAero is able to contribute to the development and industrialization of parts repairs for the LEAP using the extensive capabilities of our in-house Component Repair Services (CRS) team, which has to date completed the industrialization of over 235 repairs. The focus of StandardAero's LEAP component repair effort is our dedicated Repair & Development Center of Excellence at our facility in Cincinnati, OH, and no less than five of our locations – including those in Cincinnati, OH, Kansas City, MO, Miami, FL, Palm City, FL and Cork, Ireland – are involved in the effort."

At MTU Maintenance, Christian Ludwig is clear that as with any new engine, there is still great potential for further repair development. He goes on to explain that: "While the LEAP-1A is ahead in terms of the number of industrialised repairs compared to the -1B variant, the respective gap between what we have in place at MTU for mature engines versus new engine types is still significant. New repairs are steadily being introduced and MTU is continuously striving to acquire the capabilities for them. Shops like us have great capabilities developed over decades to support development and industrialisation in cooperation with and legitimisation by the OEMs."

Jay Aiken, VP Sales for the Americas, Europe, the Middle East & Africa (EMEA), Standard Aero Airlines & Fleets Team

With only the LEAP engine now in production, what role will USM play in the life cycle of the CFM56?

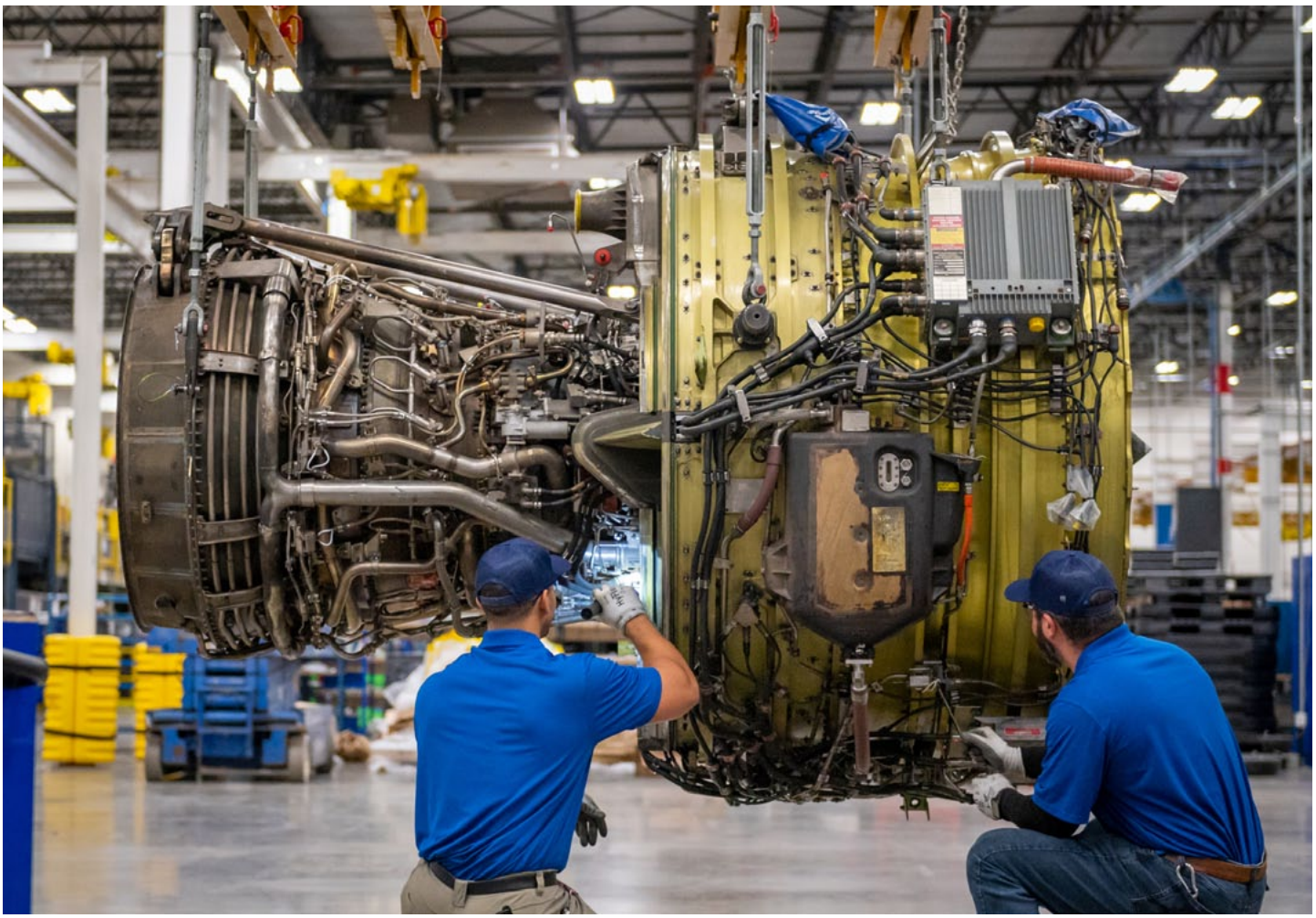
By utilising USM, MROs can manage costs more effectively and enhance the overall economics of engine maintenance. The availability of these components allows operators to mitigate some of the financial burdens associated with major repairs or overhauls. As the industry continues to adapt, leveraging USM will be an important strategy for keeping maintenance costs in check while ensuring operational reliability. Gunnar M. Sigurfinnsson underlines that: "The use of used serviceable materials (USM) is critical for maintaining the CFM56 engine, especially regarding high-value components like life-limited parts (LLPs), high-pressure turbine (HPT) blades, and HPT nozzles. These parts can significantly impact maintenance costs, with replacements for these high-cost airfoils adding substantial expenses—often upwards of US$3 million – to a shop visit." Bruce Ansell makes it clear that USM is key to keeping the CFM56 powered fleet flying, as the older variants no longer benefit from available new stock at the OEM, going on to say that: "It also means that these older engines can be rebuilt to meet a certain time, or cycle driven requirement, i.e., an operator only requires an aircraft for 5 more years. This being the case, the engine would be rebuilt with USM with 6-7k Cycles Remaining, instead of new components with 20k Cycles Remaining. The reduction in component prices is usually directly comparable to the new OEM price."

Christian Ludwig is concise in his assessment of the situation: "Though it is true that production of CFM56s is over, the engine is not going anywhere anytime soon, given how prolific and widespread its use is. This means that used serviceable material will be hugely important for the foreseeable future. It is the most popular engine of all time, so as long we have serviceable modules and parts on the market, we can expect it at our MRO shops in Zhuhai and Ludwigsfelde." However, Jay Aiken adopts a slightly more cautious approach to the role of USM to keep the CFM56 operational. "Used serviceable material (USM) certainly plays a role in supporting the CFM56 maintenance requirements of certain operators, though it is not a panacea. USM can help to bypass long lead times for certain parts, and it may also offer cost savings, especially for those operators who require engines to be "short built" for a specific number of engine flight cycles (EFCs). On the other hand, some operators (and their lessors) will prefer to use OEM-supplied new parts only, in order to ensure the build quality of the engine. More fundamentally, it may not be possible to source USM for all engine components, such as life-limited parts (LLPs): this issue is especially common at present due to the renewed popularity of CFM56-7B powered Boeing 737NGs and CFM56-5B powered Airbus A320ceos as 'fill-ins' for delayed deliveries of new-generation narrowbodies."

What about supply chain issues for the CFM56 or LEAP engine?

The consensus was pretty universal here, though the supply chain issues varied depending on the engine type. However, Bruce Ansell also touched on an additional side-effect of the discontinuance of the CFM56. He confirmed that APOC Aviation had encountered supply chain problems: "... specifically for the older CFM variants, with components no longer manufactured, and the OEM holding onto remaining stocks so as to meet their Operator Customer Support requirements, there is an acute shortage of some of the most common parts requiring replacement. This results

> **"Used serviceable material (USM) certainly plays a role in supporting the CFM56 maintenance requirements of certain operators, though it is not a panacea."**
>
> *Jay Aiken, VP Sales for the Americas, Europe, the Middle East & Africa (EMEA), Standard Aero Airlines & Fleets Team*



Standard Aero CFM56-7 maintenance

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in additional engines being torn down for parts. The other factor is that the dwindling market for the older engines has prompted many MROs/Engine Shops to reduce their capability to maintain or repair these engines, as they instead invest large sums to get set up for the intake of new engines."

At MTU Maintenance, Christian Ludwig adopts a slightly more positive approach to supply chain issues, seeing some light on the horizon: "For the CFM56, specifically, we have been witnessing some ease in the supply chain, though it remains to be seen if this trend will continue. In the recent past, supply chain disruptions and constraints have had an industry-wide impact on turnaround times and overall costs of engine maintenance, as have workforce shortages for those who, unlike MTU Maintenance, laid off staff during the pandemic. To mitigate these on-going challenges, we have focused on bolstering material stock levels, conducting repairs when possible, and investing in training programs to develop skilled technicians." However, at Standard Aero Jay Aiken has been witnessing a mixed bag of problems across the board for both engine types.

"Our biggest supply chain issue related to the LEAP has probably been that of tooling, which reflects the current ramp-up of CFM's open MRO ecosystem for the engine. The members of the LEAP CBSA ecosystem, while competitors, have attempted to minimize this issue by sharing tooling where practical, for the sake of the LEAP operator community. On the CFM56, we are experiencing long lead times on certain parts, which is driving TATs. These delays are largely driven by COVID-era supply chain disruptions, combined with the rapid ramp-up in output that the same suppliers have faced on new programs such as the LEAP. Our extensive in-house component repair capabilities do allow us to minimize the impact of parts shortages to some degree, as do the USM sourcing capabilities offered by our in-house asset management subsidiary, PTS Aviation."

Gunnar M. Sigurfinnsson at GA Telesis is very much in agreement with Jay Aiken in that he is still witnessing problems which originate from the pandemic. He points out that: "The pandemic has had a lasting impact on supply chains across various industries, including aviation. Extended lead times for new materials and longer turnaround times (TAT) at third-party vendors have become common challenges for the CFM56 engine maintenance process.

These delays can significantly affect the operational schedules of airlines and MROs, leading to increased downtime for engines and a ripple effect on overall fleet availability. As the industry continues to recover, addressing these supply chain issues will be crucial for improving maintenance efficiency and ensuring timely access to essential components."

The LEAP engine certainly has 'big boots to fill' as the successor to the exceptionally popular CFM56 engine and that succession brings with it a whole raft of problems. From lack of OEM parts to balancing investment in CFM56 parts with investment in new equipment required to perform MRO operations on the new LEAP engine, challenges will abound. However, with the majority of changes between the CFM56 and LEAP engine being in materials used, the remaining similarities between the two mean that these challenges should not be too great to overcome.


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The Hidden Costs of Paper Records in Aviation: Why the Industry Must Embrace Digital Transformation

By Giovanni Renga

Giovanni Renga is one of the founding partners of AMROS Global and a pioneer of aircraft maintenance, continuing airworthiness and asset management of aircraft. With his background as a certified Part 66 licensed engineer and a nominated person for continuing airworthiness management, Giovanni has managed several hundred aircraft maintenance events. He has also managed over 700 aircraft transitions and has a strong track record with a focus on aircraft records and physical inspections.

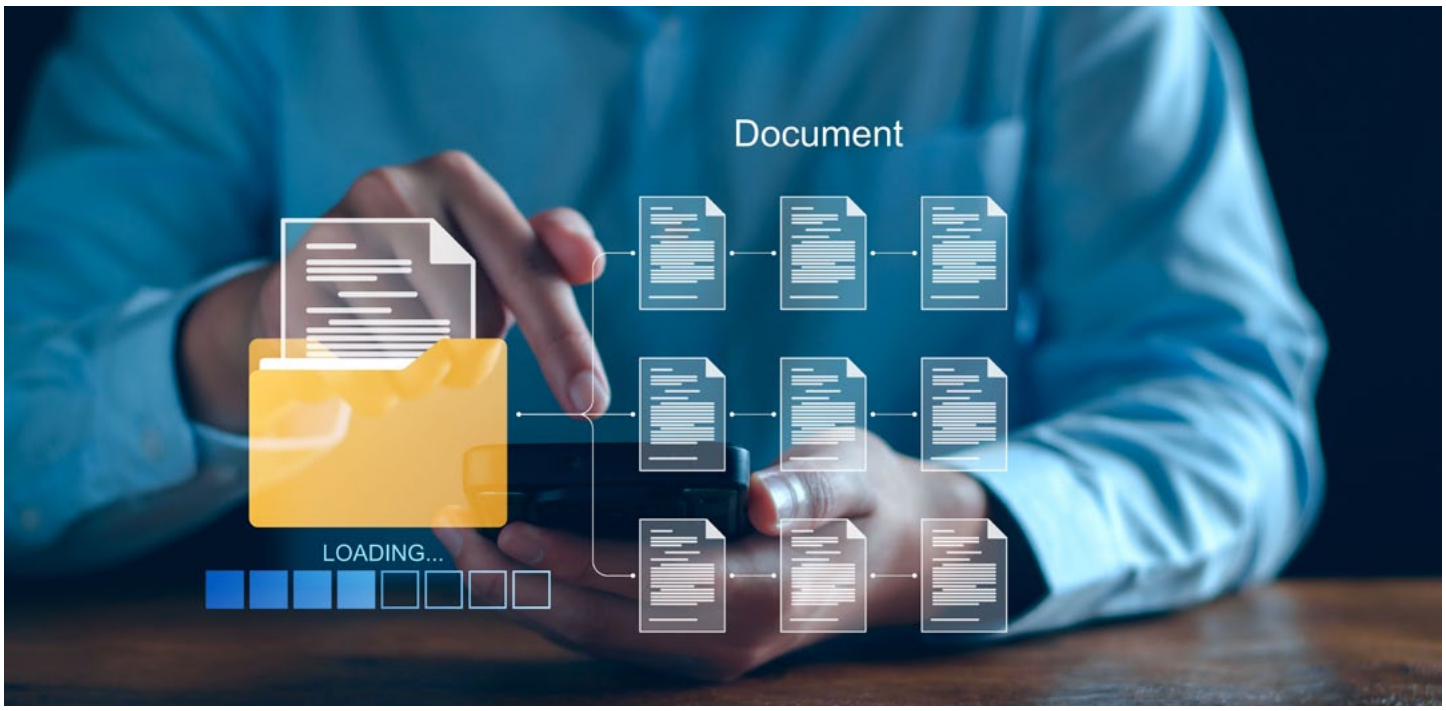
In an era where technological innovation is reshaping industries at an unprecedented pace, the aviation sector remains curiously attached to outdated practices. Despite pioneering advancements in aircraft technology and operations, the management of aircraft records still relies heavily on traditional paper-based systems. While sectors like healthcare, finance, and logistics have embraced digital solutions, aviation's re-luctance to move away from paper records represents a significant missed oppor-tunity for efficiency and cost savings.

So why is an industry that thrives on innovation clinging to antiquated methods? To-day, aircraft fly on autopilot, drones deliver packages, and self-driving cars are on the verge of widespread adoption. Yet, the aviation sector continues to depend on paper records and outdated document management systems. This refusal to fully embrace digital transformation has serious consequences, including financial losses, opera-tional inefficiencies, and risks to compliance and data integrity. These hidden costs, largely overlooked, go far beyond labor expenses and can lead to substantial financial risks, particularly during the transition of aircraft ownership or at redelivery.

Giovanni Renga, CTO, AMROS Group

Unlocking Efficiency with Digital Aircraft Records Management

Digital aircraft records management presents a transformative solution. By automat-ing repetitive and time-consuming tasks, digital systems can streamline the complex process of managing aircraft records for Continuing Airworthiness Management Or-ganizations (CAMOs), records engineers, and asset managers. Tools enhanced by artificial intelligence (AI) can automatically identify document types, categorize them according to IATA delivery binder structures, and manage team collaboration on rec-ord-related issues. The transition to digital solutions is not just



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about convenience—it's about addressing the significant financial, operational, and compliance risks that come with sticking to paper-based systems.

The cost of maintaining paper records is particularly acute during aircraft transitions, where inadequate records management can result in unbudgeted costs. On average, airlines may face up to an additional $4 million cash out per aircraft, and in certain cases more at redelivery if records are poorly maintained. Below, we explore the primary areas where paper-based record keeping is costing the industry, and how digital solutions can mitigate these risks.

The Financial Toll of Outdated Record-Keeping

While the initial investment in digital record management may seem steep, it offers a significant return on investment (ROI) when compared to the long-term costs of stick-ing with paper records. Here are some of the financial pitfalls of traditional records management:

1. Records Reviews and Inspections

Paper-based systems demand labor-intensive efforts to review, sort, and archive records. This can lead to reduced transparency regarding an aircraft's actual condi-tion, hindering decision making and complicating aircraft transitions. Labor costs alone account for 15% of the total transition costs, and failure to manage these rec-ords properly can result in even greater unplanned expenses.

2. Late Delivery Penalties

In the fast-paced world of aircraft leasing and ownership transfers, missing or disor-ganized records can cause significant delays. When records need to be recreated or substantiated, it not only adds extra labor costs but also incurs penalties for late de-livery, non-compliance with regulations, and additional maintenance costs. Such penalties represent around 44% of the unplanned costs during aircraft transitions.

3. Parts, Materials, and Components

A lack of proper documentation, such as certificates and back-to-birth traceability of parts, can disrupt supply chains during aircraft transitions or even during normal op-erations. These delays further compound the costs, which can make up 29% of the unplanned expenses at transition.

4. Maintenance Costs

When records are incomplete or untraceable, maintenance teams may have to recertify parts, leading to further delays and additional expenses. Costs related to maintenance due to poor records management make up approximately 12% of the unplanned costs during transitions.

5. Operational Inefficiencies: The Invisible Burden

In addition to direct financial losses, paper-based record keeping creates significant operational inefficiencies. These inefficiencies can paralyze aircraft management by slowing down processes like record searches, indexing, and archiving, ultimately delaying decision making.

6. Time Wasted on Manual Searches

The manual nature of paper records often results in employees spending excessive time searching for missing documents or information. This inefficiency can cause delays in aircraft transitions and operations, especially when time is critical and also cost-intensive during peak periods.

The Future of Aviation Lies in Digital Transformation

The transition to digital records management isn't just a matter of convenience — it's a necessity for the aviation industry's future success. By embracing digital systems, airlines and aircraft operators can reduce manual burdens, improve transparency, and significantly cut costs. Given that poor records management can result in millions of dollars in unexpected expenses, particularly during aircraft redelivery, the case for going digital has never been stronger.

Ultimately, the best time to make this shift was years ago, but the second-best time is now. Aviation can no longer afford to ignore the advantages of digital transformation, as it not only reduces financial and operational risks but also positions the industry for continued innovation and growth in an increasingly competitive landscape. By investing in digital aircraft records management today, aviation companies can future-proof their operations and unlock the full potential of the digital era.

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Safety & Compliance

Understanding the Role of an MRO's Accountable Manager

By David Dundas

In simple terms, the label 'Accountable Manager' is frequently used to describe that individual in an organisation who has been designated as the person responsible to a Regulatory Authority in respect of the functions which are subject to regulation, and carried out by an aircraft operator, an air navigation service provider, an aircraft maintenance and repair organisation (MRO) or an airport operator. That person should normally have corporate authority to ensure that all operational activities can be financed and carried out to the standard required by the appropriate Regulator(s).

However, the role of an Accountable Manager is complex and involves wearing many different 'hats'. Unlike a CFO or a CISO whose areas of expertise are restricted to finance or (internet) security, an Accountable Manager has to have a comprehensive working knowledge of most of an organisation, e.g., an MRO operator.

The role of an Accountable Manager in greater detail

In the aircraft MRO industry, the role of an Accountable Manager is critical to ensuring regulatory compliance, operational efficiency, and safety across all maintenance activities. This person will most likely be a senior executive, often a director or general manager, who bears ultimate responsibility for the organisation's adherence to aviation regulations and standards.

Key areas of focus for an Accountable Manager in the MRO field include:

• **Regulatory Compliance and Certification** - The Accountable Manager ensures that the MRO organisation complies with all regulatory requirements set by aviation authorities, such as the Federal Aviation Administration (FAA), European Union Aviation Safety Agency (EASA), or Civil Aviation Authority (CAA). They are responsible for overseeing the process of certification and renewal, making sure the MRO operation is qualified and approved to conduct aircraft maintenance, repair, and overhaul.

• **Safety Management System (SMS) Oversight** - The Accountable Manager is ultimately responsible for the MTO organisation's Safety Management System, which is a structured approach to managing safety risks and promoting a safety-first culture. Responsibilities include setting up protocols to identify, report, and address safety hazards, while also fostering an environment where employees are encouraged to participate actively in safety practices.

• **Leadership and Culture Building** - As a senior leader, the Accountable Manager is responsible for setting a high standard for safety, quality, and integrity within the MRO organisation. This involves promoting a culture that prioritises compliance, transparency, and excellence.


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The Accountable Manager's role includes ensuring that everyone in the organisation understands their individual and collective responsibilities and that adequate training and resources are provided.

• **Resource Allocation and Support** - The Accountable Manager should ensure that resources are allocated effectively to support safe and compliant maintenance activities. This includes budgeting for personnel, training, tools, facilities, and equipment required to perform maintenance and repair work to set standards. The accountable manager should also make sure that sufficient qualified personnel are available to handle the workload and maintain required quality and safety standards.

• **Quality Assurance and Audits** - The Accountable Manager is responsible for overseeing quality assurance programmes, ensuring that the MRO meets rigorous internal and external quality standards. The Accountable Manager is also responsible for the approval and implementation of regular audits, both internal and external, to assess the MRO's performance, to identify areas for improvement, and to maintain regulatory compliance.

• **Incident and Non-Conformance Management** - Where there are instances of maintenance discrepancies, non-conformances, or incidents, the Accountable Manager must ensure that effective corrective and preventive actions are taken. The Accountable Manager should also be fully involved in reviewing and signing off on corrective action plans while coordinating with regulatory authorities to ensure all issues are resolved satisfactorily.

• **Liaison with Regulatory Authorities** - The Accountable Manager acts as the primary point of contact between the MRO and aviation regulators. They are responsible for coordinating communications, responding to audits, and handling any regulatory inquiries. This role requires a thorough understanding of regulatory requirements and often necessitates maintaining strong relationships with aviation authorities.

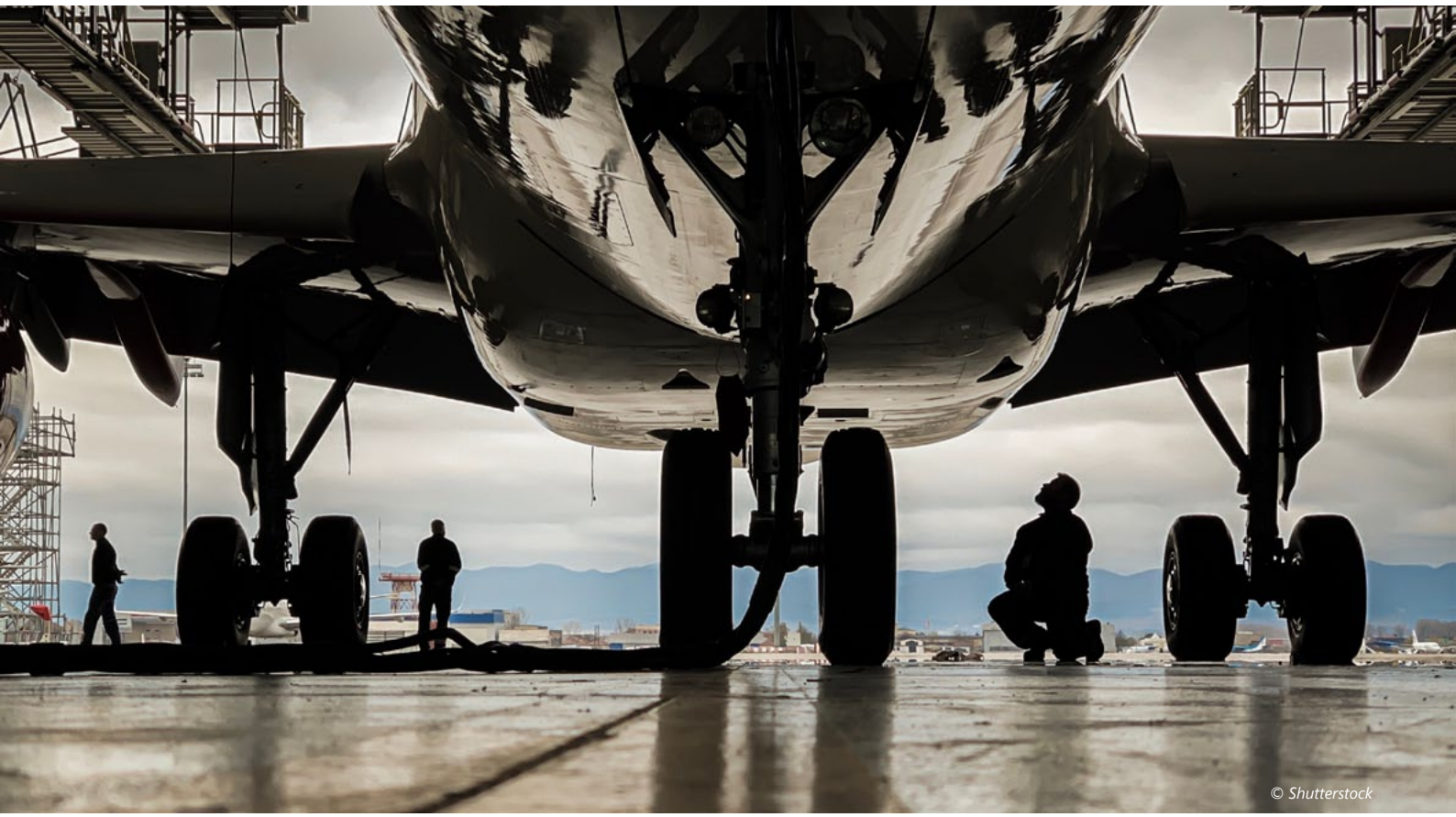
• **Continuous Improvement** - The Accountable Manager is expected to lead initiatives for continuous improvement in maintenance practices, operational processes, and overall service quality. By staying up to date with industry developments and best practices, the Accountability Manager can ensure the organisation adopts innovative solutions and remains competitive in the MRO industry.

The importance of the Accountable Manager in the MRO industry

In summary, the Accountable Manager's role is essential to both the internal operations and external reputation of an MRO organisation. By ensuring safety, regulatory compliance, and operational efficiency, they protect the organisation from legal issues and enhance customer trust. A successful Accountable Manager helps set a high standard for quality and safety, essential in an industry where lives depend on the reliability and integrity of maintenance services.

The relationship between Accountability Managers and Managing Directors

We have touched on the fact that the role of an Accountable Manager is critical to the smooth running of an MRO organisation where compliance with regulations is compulsory. The term 'accountable' needs to be clearly understood, as it means that any of the responsibilities of the role cannot be delegated to anyone else. However, this brings into question the hierarchy within an MRO organisation and whether an



Accountability Manager has supreme authority over their domain, or whether they are still responsible to, say, the company Managing Director (MD).

The answer is a simple "yes", the Accountable Manager is still responsible to the MD, but with certain provisos, particularly where there is potential for the MD's instructions to conflict with the responsibilities of the Accountable Manager in such areas as safety, regulatory compliance, and operational integrity. To help provide a better understanding of the relationship between an MRO's MD and Accountable Manager, let us have a look at four areas where there can be a need for effective two-way interaction.

• **Corporate Oversight and Strategic Direction** - As a senior executive, the Managing Director often provides strategic and financial guidance to the organisation, setting overall priorities and targets. They may give directions related to business goals, budgets, and broader organisational initiatives. The Managing Director might also be involved in major decision making that affects the MRO's growth, resources, and customer relations.

• **Independence in Safety and Compliance Matters** - In the realm of safety, compliance, and regulatory obligations, the Accountable Manager typically has a degree of operational independence. While the Managing Director can provide guidance, they should avoid directives that could compromise the Accountable Manager's ability to maintain regulatory compliance. Aviation authorities expect that the Accountable Manager will have final authority over safety and compliance matters, even if they still have to report to the Managing Director. This ensures that business objectives do not interfere with safety standards.

• **Collaboration on Resource Allocation** - The Managing Director and Accountable Manager often collaborate on budget and resource allocation. For example, the Managing Director might direct cost-saving measures, but these must respect the resources needed for safe and compliant operations. The Accountable Manager must communicate any risks associated with resource constraints to ensure safety remains a priority, even if it requires explaining limitations on cost cutting in critical areas.

• **Escalation and Reporting** - If the Accountable Manager identifies safety or compliance issues that conflict with the Managing Director's business directives, they have a responsibility to escalate these concerns. Aviation regulators require the Accountable Manager to have sufficient authority to make safety-related decisions independently, and regulatory bodies may intervene if they believe an Accountable Manager's duties are being compromised by business pressures.

> "The Accountable Manager is still responsible to the MD, but with certain provisos, particularly where there is potential for the MD's instructions to conflict with the responsibilities of the Accountable Manager in such areas as safety, regulatory compliance, and operational integrity."

In summary, while a Managing Director can provide general directives to the Accountable Manager, safety and compliance responsibilities remain within the Accountable Manager's control. A balanced, collaborative approach helps align strategic goals with the MRO organisation's commitment to safe, compliant operations.

PEOPLE

on the move

Danny Hakker

MAAS Aviation, a specialist in aircraft painting and exterior coatings, has announced the appointment of **Danny Hakker** as its new Chief Executive Officer (CEO). Hakker, who joined MAAS in 2023 as Chief Financial Officer, quickly became a key figure, contributing to the company's strong financial performance. With over 20 years of international experience in sectors including transport, distribution, media, telecoms and services, Hakker is a dynamic leader. Backed by an experienced executive leadership team with over 60 years at MAAS, Hakker brings a fresh approach to the company's strategic direction. Hakker said, "I am excited to continue my journey with MAAS, looking forward to meeting our customers and supporting the talented individuals across our business. Together, we aim to deliver superior quality and added value to our customers."

Pascal Parant

Vallair has appointed **Pascal Parant** as its new Group Chief Commercial & Marketing Officer. Parant joins Vallair during a crucial phase of growth, as the company continues to expand its footprint in the aerospace and mobility sectors. Vallair, headquartered in Luxembourg with facilities across Europe, is recognised for its expertise in aircraft teardown, component support, cargo conversions, and end-of-life solutions. The company offers a comprehensive range of services, including MRO for narrow-body aircraft such as the Airbus A320 and Boeing 737, and leasing solutions to airlines and operators around the world. Before joining Vallair, Parant held several senior roles at AAR Corp, where he developed long-term relationships with airlines, lessors, MROs, and OEMs. In addition to his new role, Parant is the Executive Vice President of USAIRE, an aviation business club, and a Fellow of the Royal Aeronautical Society (FRAeS). He is also a graduate of the French aeronautical school ESTACA. With Parant's appointment, Vallair aims to strengthen its commercial and marketing strategies, enhancing its ability to deliver innovative and cost-effective solutions for mature aircraft management and support, reinforcing its leadership in the aviation aftermarket sector.

Menzies Aviation has announced a series of senior appointments in the Americas region *© Menzies Aviation*

Menzies Aviation (Menzies) has announced a series of senior appointments in the Americas region, enhancing its leadership team. Among the new appointments, **Oliver Ashton** has been promoted to Senior Vice President, Cargo Americas, while **Chris Dohne** steps into the role of Senior Vice President, Sales, Commercial & Business Development. **Arvin Nagules** has taken on the newly created position of Senior Vice President, Organisational Change, Americas, and **Nigel Shuttleworth** assumes the role of Senior Vice President, Ground Handling, North America and the Caribbean. Ashton, now Senior Vice President, Cargo Americas, brings over 20 years of aviation experience, including 15 years at Avianca, where he was instrumental in the airline's integration following mergers in Colombia and Ecuador. He joined Menzies in 2021 as a consultant, later serving as Commercial Director and Cargo Operations Director for the LATAM region. Dohne, who started with Menzies as an intern in 2012, has held several positions including Project Manager and VP Commercial. In his new role, he will oversee Menzies' expansion plans across the Americas. As Senior Vice President, Organisational Change, Americas, Nagules will lead organisational transformation, advance IT strategies, and enhance employee engagement. He joined Menzies in 2020, having previously held leadership roles at WestJet Airlines. After nearly 30 years with Menzies, Nigel Shuttleworth becomes Senior Vice President, Ground Handling, North America & the Caribbean. He has held various roles, including Cargo Operations Manager and General Manager, and will now focus on delivering safe and consistent ground handling services across the region.

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