AviTrader
AVIATION NEWS PUBLICATIONS

avitrader.com | Edition #152
May 2026

MRO 360°

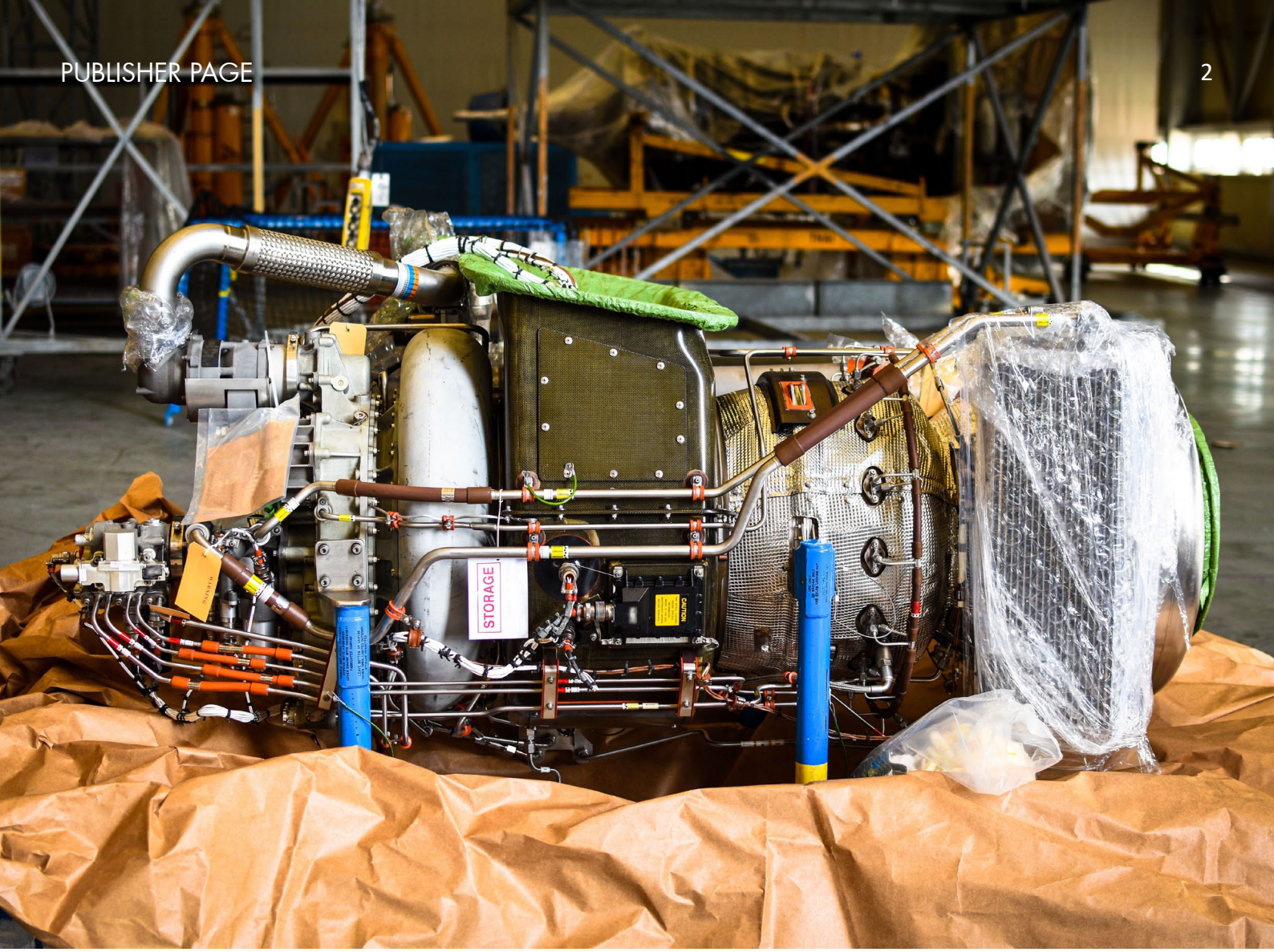
THE UNSEEN WORKHORSE

Talking APU Maintenance

PMA Parts
Assessing their Role and Benefits

AI-Troubleshooting
A Genuine Gamechanger?

ILS Interview
Discussing Inventory Optimisation



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Dear Industry Colleagues,

This month there are two particular areas in the field of MRO that we wanted to take a closer look at – PMA parts and APU maintenance.

Where PMA parts are concerned, we wanted to get a better feel for how these non-OEM parts are viewed, whether as a lower-grade substitute or a key lifeline in the MRO sector that is beset with supply chain problems.

Where APUs are concerned, we see these as the hidden workhorse of an aircraft and, as such, wanted to shine a brighter light on what is involved in their maintenance and upkeep. We wanted to see how critical this is when an aircraft is still deemed fully operational even when its APU is not fully functioning.

Beyond the above, we also chose to investigate the current and potential role of artificial intelligence in aircraft maintenance and whether its introduction could be a real game changer, while this month's 'Mythbuster' article looks at whether or not it is an erroneous assumption that "Digital Maintenance Records Automatically Reduce Errors", which you may have your own opinion on.

As always, we hope you enjoy this edition of AviTrader's MRO 360°.

Torsten Tamm
Publisher

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MRO 360°

Cover image: *StandardAero*

Looking after the unseen workhorse of many an aircraft

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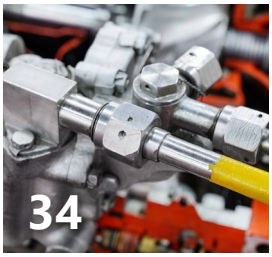

Emirates breaks ground on landmark Dubai MRO hub

Groundbreaking of Emirates new US$5.1 billion engineering complex at Dubai South *© Emirates*

Emirates has officially broken ground on its new US$5.1 billion engineering complex at Dubai South, a major development set to become the world's most advanced aircraft maintenance, repair and overhaul (MRO) facility. The groundbreaking ceremony was attended by senior figures including His Highness Sheikh Ahmed bin Saeed Al Maktoum, Chairman and Chief Executive of Emirates Airline and Group, Sir Tim Clark, President of Emirates Airline, and representatives from Dubai South and China Railway Construction Corporation. Spanning 1.1 million square metres, the facility will rank among the world's largest buildings by volume and will become the GCC's largest steel structure. The complex will feature a unique hangar system capable of simultaneously accommodating 28 wide-body aircraft, alongside two dedicated aircraft painting hangars. The development will also include a 50,000 m^2 administrative headquarters for Emirates Engineering, 15,000 m^2 of training facilities and a dedicated gateway building controlling airside access. Designed with sustainability in mind, the entire complex is targeting LEED Platinum certification and will incorporate rooftop solar panels and other energy-efficient technologies. Construction is expected to be completed by mid-2030, with the new hangars initially handling heavy maintenance work and overflow projects from Emirates Engineering's existing facility at Dubai International Airport.

FDH Aero opens Bengaluru hub

FDH Aero has officially opened its new hub in Bengaluru, India *© FDH Aero*

FDH Aero, a global provider of aerospace and defence supply chain solutions, has officially opened a new sales office in Bengaluru, India, strengthening its presence in one of the world's fastest-growing aviation and defence markets. The opening was marked by a ribbon-cutting ceremony on May 13, alongside a traditional pooja ceremony in line with local customs. The new office brings together FDH's Hardware and Electronics divisions under one roof, creating a regional hub designed to provide integrated supply chain solutions for customers across India and the wider region. Supported by local teams with extensive market expertise, in-country inventory and dedicated customer service, the facility reflects FDH Aero's continued investment in the Indian aerospace and defence sector. "Strong commercial aerospace demand, increasing defence investment and 'Made in India' initiatives are driving significant growth across India's aerospace and defence industry," said Matthew Lacki, President of FDH Hardware. "Our new Bengaluru office positions us to better support Tier 1 customers and manufacturers while enabling local sourcing strategies that improve cost efficiency, availability and overall supply chain performance." FDH Aero has also appointed two in-country leaders to head the operation, with Adhavan Kamalanathan leading FDH Electronics and Victor Bharath heading FDH Hardware. Together, the pair bring decades of experience across aerospace, electronics and engineering, supporting global OEMs and Tier 1 suppliers throughout the region.

GATES USA SPAH secures Panama approval

GATES USA SPAH has secured Panamanian quality certification for its engine maintenance operations in Wilmington, Ohio
© GA Telesis

GA Telesis Engine Services (GATES USA SPAH), the joint venture between GA Telesis and Air Transport Services Group, Inc., has secured Panamanian quality certification for its engine maintenance operations in Wilmington, Ohio. The new approval expands the company's capability to carry out maintenance work on Panamanian-registered aircraft, strengthening its position across the Americas for both single-aisle and wide-body aircraft support. Operating from Wilmington, GATES USA SPAH provides quick-turn engine maintenance services to a growing network of global operators. The facility's strategic location enables faster turnaround times while supporting domestic and international carriers seeking compliant and efficient engine maintenance solutions throughout the region. Jason Reed, President of GATES USA SPAH said: "This highly sought-after certification strengthens our ability to support regional and global airlines operating through CVG and international hubs," said Reed. "Our customers specifically requested CF6 and CFM56 engine maintenance support under this new approval, and we are now able to deliver both scheduled and unscheduled maintenance services for Panamanian-registered aircraft."

Emirates strengthens engine MRO partnership with GE Aerospace

Emirates has signed an agreement with GE Aerospace to develop advanced piece part component repair capabilities for GE90 and GP7200 engines as part of the expansion of its Emirates Engine Maintenance Centre (EEMC) in Dubai. Under the agreement, GE Aerospace will provide technical consultancy and training support to help Emirates establish a dedicated component repair line and transfer specialist knowledge and best practices to EEMC teams. The partnership forms part of the airline's US$300 million investment to expand its engine maintenance, repair and overhaul capabilities across its fleet. The enhanced repair capabilities will support the GE90 engines powering the carrier's Boeing 777 fleet and the GP7200 engines used on part of its Airbus A380 fleet. Emirates said the initiative will strengthen its long-term vision of building world-class engine maintenance and repair operations in Dubai. Emirates Engineering currently provides maintenance support for more than 270 Boeing 777, Airbus A380 and Airbus A350 aircraft, while the Emirates Engine Maintenance Centre has been delivering engine repair and maintenance services since its establishment in 2014.

The new agreement was signed by Adel Al Redha, Emirates' Deputy President and Chief Operating Officer (r) and Mohamed Ali, President & CEO, Commercial Engines & Services, GE Aerospace *© GE Aerospace*

Iridium signs agreement to acquire Aireon

Iridium has signed an agreement to acquire Aireon, the operator of the world's only space-based ADS-B air traffic surveillance network © *Shutterstock*

Iridium Communications has signed a definitive agreement to acquire Aireon LLC, the operator of the world's only space-based ADS-B air traffic surveillance network, in a move that significantly expands its aviation capabilities. The acquisition brings together Aireon's global aircraft tracking and operational data services with Iridium's satellite communications and positioning, navigation and timing (PNT) technologies. The combined business will offer an integrated platform covering aircraft surveillance, pilot communications, navigation integrity and operational data analytics. Aireon's ADS-B system, certified by the European Union Aviation Safety Agency (EASA), operates via payloads hosted on Iridium's satellite constellation and tracks around 190,000 flights daily with full global coverage. The platform captures real-time aircraft data including location, altitude, speed and heading, supporting safer and more efficient airspace operations. Air navigation service providers responsible for more than half of global airspace currently rely on Aireon data to enhance air traffic management and operational safety. Iridium said the acquisition represents a major step in its strategy to build a comprehensive global aviation safety and communications network, particularly as demand grows for resilient navigation and surveillance capabilities in increasingly contested operating environments.

Liebherr Aerospace enhances MRO service capability in China

Liebherr Aerospace has expanded its MRO operations in Shanghai, reinforcing its footprint in China and addressing increasing regional demand for advanced maintenance services. As part of the expansion, the company has set up a dedicated 800 m² MRO area for the testing and re-coring of heat transfer equipment. As part of its commitment to sustainable maintenance solutions, Liebherr has industrialised a REACH-compliant TCS (Trivalent Chromium System) and PACS (Post Application Conversion Sealer) coating process for heat transfer equipment, following extensive validation at its original equipment manufacturing facility in Toulouse, France. With the introduction of these REACH-compliant processes, Liebherr has become the first company in China to offer this service for heat transfer equipment to airline customers. The solution provides a safe and future-ready approach that complies with global aviation standards, reduces regulatory risks and is trusted worldwide. It helps safeguard people, ensure supply stability and support seamless international operations. Thanks to this fully integrated in-house maintenance capability, all future maintenance work can now be carried out on site. TCS improves corrosion resistance and paint adhesion, while PACS seals and strengthens the protective layer to ensure long-term durability. Together, the two processes deliver performance comparable to conventional coatings, without the associated environmental impact. The coating process complies with REACH — the European Union's Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals — which was introduced to enhance the protection of human health and the environment from chemical-related risks. Compliance with the regulation requires the replacement of traditional chromium-based treatments with more environmentally responsible alternatives.

© Liebherr Aerospace

Bharat Forge signs landing gear forgings agreement with Embraer

Landing gear components © *Bharat Forge*

Bharat Forge Limited (BFL), a global provider of advanced forging and precision engineering solutions, has secured a long-term agreement with Embraer for the manufacture and supply of critical landing gear forgings. The partnership marks the first time an Indian supplier has joined Embraer's global aerospace supply chain for forged components. Under the agreement, Bharat Forge will provide high-integrity forged components for landing gear systems used across Embraer's commercial and defence aircraft programmes. The collaboration further strengthens Bharat Forge's growing presence in the global aerospace sector and reinforces its position as a trusted supplier of complex, safety-critical components. The long-term agreement reflects a shared commitment to quality, reliability and sustained collaboration, while highlighting Bharat Forge's capability to deliver forged products that meet rigorous international certification standards. Amit B Kalyani, Vice Chairman and joint MD at BFL commented on the new agreement: "The fact that BFL is the first Indian supplier of forged components for Embraer is a proud moment and a testament to the capabilities we have built in the Aerospace business and we thank them for the trust they have reimposed on BFL. We look forward to growing and adding value to our association with Embraer in the coming years. These contracts will enable [us] to create scale for critical structural components complementing the scale built in the Aero Engine components space." The agreement marks Embraer's first partnership with an Indian company in this segment, highlighting its commitment to supporting the growth of India's aerospace industry and generating long-term value throughout the supply chain. The development also aligns with Embraer's ongoing efforts to strengthen its footprint in India through continued engagement with industry partners and government authorities.

Astronics Aerospace sales climb on strong commercial demand

Astronics Corporation reported strong first-quarter 2026 results, driven by continued momentum in its Aerospace segment and sustained demand from the commercial aviation market. Aerospace segment sales rose 11.7% year-on-year to US$213.8 million, an increase of US$22.4 million, supported primarily by higher demand in the Commercial Transport sector. Test Systems sales also increased, rising 15.4% to US$16.5 million. Commercial Transport sales grew by US$18.9 million, or 13.7%, reflecting stronger demand for seat motion systems, lighting and safety products. General Aviation sales increased 40.7% to US$21.4 million, largely driven by higher inflight entertainment and connectivity (IFEC) product sales for the VVIP market. Military Aircraft sales remained broadly in line with the previous year, while other sales declined as Astronics continued winding down non-core contract manufacturing activities. The Aerospace segment reported operating profit of US$35.3 million, representing 16.5% of sales, benefiting from higher production volumes, improved operational efficiencies and revised programme estimates linked to the MV-75 programme. The results also reflected a US$7 million reduction in litigation-related costs associated with the company's UK patent dispute. Adjusted Aerospace operating profit rose 20% to US$37.2 million, with operating margin expanding to 17.4%. Aerospace bookings totalled US$264.4 million during the quarter, resulting in a book-to-bill ratio of 1.24:1. The segment ended the quarter with a record backlog of US$651.4 million. Peter Gundermann, Chairman, President and Chief Executive Officer of Astronics, said the Aerospace business delivered its second-highest quarterly sales performance on record, surpassed only by the previous quarter, adding that strong market demand positions the company for further growth in the periods ahead.

SMBC Aviation Capital upsizes facility to US$3.7bn

SMBC Aviation Capital has finalised a US$1.7bn greenshoe upsize of its original US$2bn syndicated facility announced in February as part of the acquisition of Sumisho Air Lease Corporation. The upsizing brings the total transaction to US$3.7bn, with the additional capital to be used for general corporate purposes. A total of 33 financial institutions participated in the general syndication, bringing overall participation to 40, following the successful raising of US$2bn from seven banks during the senior syndication phase in February. The participating banks are globally diversified across Asia, Europe and the United States, with 15 new banking relationships established by SMBC Aviation Capital. The upsize increases the five-year tranche to US$2.28bn and the seven-year tranche to US$1.42bn. Commenting on the transaction, Aisling Kenny, Chief Financial Officer of SMBC Aviation Capital, said: "The upsizing of this facility provides long-term, competitively priced capital to support SMBC Aviation Capital's increased scale and strong growth trajectory. This transaction also deepens our existing banking relationships, and we are pleased to welcome an additional fifteen new banking partners. The strong reception to this transaction, reflected in both its scale and the geographic diversity of participating banks, underlines the strength of our franchise and the global reach of our business."

MTU Maintenance Lease Services invests in TRecs

MTU Maintenance Lease Services (MLS), the engine leasing and asset management division of MTU Maintenance, has announced a strategic minority investment in TRecs, a digital platform focused on streamlining Open Item List (OIL) management across the engine lifecycle. Financial terms of the agreement were not disclosed. The investment underlines MLS's commitment to advancing digitalisation within the engine leasing sector through cloud-based and collaborative asset management solutions. TRecs enables the management of technical reviews, lease transitions, shop visits and end-of-lease processes within a single real-time platform accessible to all stakeholders. MLS plans to use the platform throughout the full engine lifecycle, from the technical assessment of acquired or leased engines to documentation management and task tracking during maintenance events and asset transitions. The approach is intended to reduce administrative complexity, improve coordination efficiency and provide a centralised, auditable record for each managed asset. The investment also strengthens the strategic alignment between MLS and TRecs as both companies seek to accelerate digital transformation across the wider engine leasing and asset management market. Remko Bruinsma, Managing Director of MTU Maintenance Lease Services, said the investment reflected the company's belief that further digitalisation of engine transitions is essential to reducing complexity for both lessors and customers. He added that TRecs provides a purpose-built solution tailored to the needs of the sector, with MLS supporting the platform both as a customer and shareholder."

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Satair concludes acquisition of Unical Aviation and ecube

© Satair

Satair, an Airbus subsidiary, has successfully completed its acquisition of Unical Aviation (Unical), along with its subsidiary ecube, creating a leading global provider of Used Serviceable Material (USM) and aircraft lifecycle solutions. The transaction combines Unical's extensive inventory and distribution network with ecube's advanced aircraft disassembly and storage capabilities, alongside Satair's established USM expertise through VAS Aero Services. Under the new leadership structure, Unical CEO Sharon Green will also take on the role of CEO of VAS Aero Services to ensure strategic alignment across Satair's USM operations, while Tommy Hughes will focus fully on his responsibilities as Chief Commercial Officer of Satair. Richard Stoddart, CEO of Satair and Head of Airbus Material Services, commented on the finalisation: "Today is a major step forward. Bringing Unical and ecube into our business isn't just about getting bigger; it's about leveraging the circular economy to the benefit of our customers. We're gaining excellent facilities and, crucially, a team of highly skilled professionals in the USM market. For our customers, this means better parts availability and a simpler way to manage an aircraft's full lifecycle." With the addition of Unical and ecube's key operational facilities across North America and Europe, Satair has significantly strengthened its industrial presence. The acquisition supports Satair's strategy of offering an integrated, end-to-end service covering aircraft storage and dismantling through to technical repair management and worldwide material distribution. The combined businesses will now enter a coordinated integration phase aimed at aligning operations across Satair, Unical, ecube and VAS Aero Services, with the goal of delivering a more streamlined and connected customer experience.

Sunvair acquires Miami-based Aircraft Systems

© Sunvair

Sunvair has acquired maintenance, repair and overhaul (MRO) provider Aircraft Systems, further strengthening the breadth of products and services available to its customers. Financial terms of the transaction were not disclosed. Based in Miami, Florida, Aircraft Systems is an FAA and EASA Part 145 Repair Station with unlimited Accessory Class I, II and III ratings, as well as Limited Landing Gear and Limited Airframe ratings. The company has extensive experience in the repair and overhaul of a wide range of aircraft components for commercial and cargo operators worldwide. Aircraft Systems specialises in hydraulic and electro-hydraulic accessories, landing gear components, mechanical and electro-mechanical accessories, electronic accessories, pneumatic accessories and airframe components. "The acquisition of Aircraft Systems is a continuation of our strategy to expand the accessories and components we offer and provide even more services to our customers," said Kerry Jarandson, President and CEO of Sunvair Aerospace Group. "These additional capabilities enhance the depth of our offering and strengthen our position as a primary service provider for customers' maintenance and repair requirements."

Dornier Technology expands Clark MRO capacity

Dornier Technology is expanding its MRO operations at Clark International Airport in the Philippines, responding to growing regional demand for aircraft maintenance services and a shortage of available hangar capacity across Asia. The company has already brought a second hangar into operation and plans to open a third facility by the end of the third quarter of 2026. The expansion reflects increasing pressure on the region's MRO sector as airline fleets continue to grow faster than maintenance infrastructure. Dornier Technology currently operates Hangar 1, a 4,705m² facility capable of accommodating either one narrow-body aircraft or two turboprop aircraft simultaneously. The newly operational Hangar 2 adds a further 4,401m² of space and can handle up to four turboprop aircraft at the same time. The planned Hangar 3 will provide an additional 4,705m² and will be capable of servicing two narrow-body aircraft simultaneously. The company also has access to a fourth 2,250m² hangar designed for two turboprop aircraft. Expanding from one to three hangars represents a 194% increase in capacity, rising to 241% should the fourth hangar be fully utilised. A major enhancement accompanying the expansion is the introduction of full aircraft painting capability for narrow-body and ATR aircraft. Dornier Technology says this will allow the company to offer operators and aircraft lessors a complete maintenance and repaint solution in a single location. Chief Executive Officer Nick Gitsis said aircraft lessors frequently face difficulties finding MRO providers capable of carrying out both heavy airframe maintenance and full repainting services. The new capability positions Dornier Technology to offer a more comprehensive and competitive service package. Gitsis added that the company's expansion strategy has been driven by strong demand from Asian carriers, particularly low-cost airlines in Southeast Asia and operators in Northeast Asia, where labour shortages continue to place pressure on maintenance capacity.

Dornier Technology is expanding its MRO capabilities at Clark International Airport © *Dornier Technology*

Maverick moves into fuel cell and GSE market

Inspection and on-site fuel cell testing © *Genaire*

Maverick Aviation Group has announced the acquisition of Genaire, a Canadian aerospace company with more than 70 years of experience supporting military and commercial aviation operators across the country. The acquisition widens Maverick's capabilities in fuel cell and ground support equipment (GSE) repair and sales, while also strengthening its position within Canada's aerospace and defence sectors. As part of the deal, Maverick will assume Genaire's role as an original equipment manufacturer (OEM), including the production of Twin Otter skis and pallets for the C-130 Hercules aircraft. These products play an important role in supporting Canada's aviation infrastructure and defence operations. Founded in Ontario, Genaire has established a longstanding reputation as a trusted partner to the Department of National Defence and a wide range of commercial aviation customers throughout Canada. The company will also become Maverick's platform for expansion in Eastern Canada, providing a strategic base to broaden its national footprint beyond Western Canada. Maverick said the acquisition will enhance its ability to deliver integrated support services to both defence and commercial aviation customers across the country.

MAB Engineering doubles Subang capacity

MAB Engineering has doubled its maintenance capacity with the expansion of Hangar 4 at Subang
© MAB Engineering

MAB Engineering Services (MAB Engineering) has doubled its maintenance capacity at Sultan Abdul Aziz Shah Airport (SZB) following the successful commissioning of its new Hangar 4 airframe maintenance facility. The expansion follows a 15-year lease agreement with Impeccable Vintage Properties Sdn Bhd (IVP), a wholly owned subsidiary of Khazanah Nasional Bhd, and marks the next step in strengthening MAB Engineering's position as a regional MRO provider. More than a simple relocation from Hangar 1, the move to Hangar 4 forms part of Malaysia Aviation Group's (MAG) Long-Term Business Plan 3.0, launched in December 2025 to create a more efficient, resilient and future-ready engineering operation. Captain Nasaruddin A. Bakar, President and Group Chief Executive Officer of MAG, said: "The successful commissioning of Hangar 4 marks a significant milestone in strengthening our engineering and maintenance capabilities as part of MAG's long-term growth strategy. This expansion not only doubles our maintenance capacity at Subang but also enhances our ability to serve both MAG airlines and international customers more effectively. "As demand for high-quality MRO services continues to grow across the region, Hangar 4 positions us to compete more strongly, support Malaysia's ambition as a regional aviation hub, and deliver greater long-term value to the Group and our customers." The new facility significantly expands MAB Engineering's ability to support both Malaysia Airlines and Firefly fleets, while also increasing capacity for third-party MRO customers. Around half of the hangar's capacity has been allocated to Malaysia Airlines and Firefly maintenance requirements, with the remaining capacity dedicated to external commercial work as the company seeks to strengthen its position in the regional MRO market. Previously, Hangar 1 was limited to just two maintenance lines due to structural constraints. Hangar 4 now enables four simultaneous maintenance lines, including one wide-body line for Airbus A330-200 and A330-300 aircraft, one narrow-body line for Boeing 737-800 and Boeing 737-8 aircraft and two turboprop lines for ATR72 aircraft.

Voyageur adds ATR landing gear facility in Ottawa, Canada

Voyageur Aviation (Voyageur) has strengthened its aircraft component support operations with the launch of a new landing gear repair and overhaul facility in Ottawa, Canada, dedicated to ATR regional aircraft. The expansion builds on Voyageur's existing in-house component expertise and enhances its overall repair and overhaul (R&O) capabilities. The new Ottawa facility enhances Voyageur's support for ATR operators by increasing capacity and offering a comprehensive range of landing gear services. As a Canadian-owned and operated company, Voyageur provides aircraft maintenance and in-service support across all levels for both commercial and government fleets. Purpose-built for efficiency and quality, the facility is designed to help operators reduce downtime and maintain operational reliability. The investment reflects Voyageur's continued commitment to expanding its specialist maintenance capabilities in response to growing demand from regional aircraft operators. By concentrating dedicated expertise and resources at the Ottawa site, the company aims to deliver faster turnaround times, improved service flexibility and consistent technical support for ATR fleets operating across North America and international markets. Equipped with advanced tooling and inspection technologies, the facility will support a wide range of landing gear maintenance activities, including overhaul, repair, testing and component replacement. The expansion also reinforces Voyageur's position as a trusted maintenance partner for operators seeking reliable and cost-effective support solutions throughout the aircraft lifecycle. In addition to strengthening customer support, the new facility is expected to create skilled employment opportunities in the Ottawa region and contribute to the continued development of Canada's aerospace maintenance sector. Voyageur remains focused on delivering high standards of safety, quality and operational performance across all of its services.

Rionegro MRO implements AMOS solution

Rionegro MRO implements AMOS solution

Rionegro MRO, based in Rionegro, Colombia, has successfully implemented Swiss Aviation Software's AMOS maintenance and engineering platform, becoming the first standalone MRO provider in the Americas to deploy the system. The adoption of AMOS gives Rionegro MRO a centralised digital platform to manage and optimise its maintenance activities, covering everything from planning and execution to reporting and record management. The new system is designed to improve operational performance, enhance service delivery and strengthen collaboration with airline customers. The rollout includes a range of AMOS modules, including Production, Staff, Shops, Procurement and Stores. Among the key capabilities introduced is the Workpackage Cycle, which allows seamless data exchange between Rionegro MRO and customer systems, helping to ensure maintenance tasks are efficiently managed and accurately completed. "The strong communication and synergy between the teams were key to successfully integrating the adopted solutions. I'm proud to have been part of a project that stands out not only for its technical success, but also for its strong human values and professional excellence." stated Giovanny Velez, Maintenance Coordinator at Rionegro MRO. "This project shows what's possible when a partner truly aligns with its customer. Commitment, collaboration, and understanding of our needs made the difference. Thank you to Swiss-AS for a great start to a relationship that will undoubtedly continue to grow." added Elisa de Saravia, CIO of MRO Holdings.

StandardAero acquires Unified Turbines in all-cash transaction

StandardAero has acquired Unified Turbines, LLC (Unified Turbines) in an all-cash transaction. Unified Turbines marks StandardAero's 14th acquisition since 2015 and its eighth within the Component Repair Services (CRS) segment. Founded in 1997 and operating from its facility in Milton, Vermont, Unified Turbines is an FAA Repair Station. The company provides hot section component repair and overhaul services for a range of Pratt & Whitney and Honeywell engines powering a variety of turboprop aircraft, including the King Air, Cessna Caravan, Pilatus PC-12, ATR 42 and 72, and De Havilland Dash 7 and Dash 8 regional aircraft, among other platforms. Unified Turbines has also been a high-performing StandardAero vendor since 2001. The acquisition adds critical engine component repair capabilities across key engine platforms where StandardAero already holds a strong market position, including Pratt & Whitney's PT6A and PW100 turboprop engine families. These capabilities are closely aligned with StandardAero's Engine Services segment, which uses faster component repair turnaround times to deliver high-performance solutions to customers. "Unified Turbines represents a strategic addition to StandardAero and supports our commitment to disciplined, value-accretive growth," said Russell Ford, Chairman and Chief Executive Officer of StandardAero. "This acquisition expands our capabilities across several key turboprop platforms where we already support a large global customer base, while strengthening the technical depth we provide throughout our MRO network. Unified Turbines has been a trusted partner for years, and bringing its expertise in-house will create meaningful value for our customers and shareholders as we continue to pursue our strategic growth priorities." Organisationally, Unified Turbines will be aligned with StandardAero's CRS segment, a key driver of the company's strategic growth. StandardAero has established more than 20,000 unique repairs across its broad portfolio of commercial, military, helicopter and aeroderivative engines.

Do228NXT ground tests mark key milestone

Do228NXT © *GA-ATS*

General Atomics AeroTec Systems (GA-ATS) has reported that ground tests of the first Do228NXT successfully began, marking an important step forward in the development of the new aircraft series. The programme now advances to engine testing, a critical phase in bringing the aircraft to operational readiness. The multirole Do228NXT is powered by two Honeywell TPE331-10 turboprop engines, each delivering 579 kW (776 SHP). Their single-shaft configuration — where compressor, turbine and propeller operate on a common shaft — enables an almost instantaneous thrust response. This characteristic provides a clear advantage for short take-offs and landings, as well as for demanding special-mission operations, underpinning the aircraft's exceptional STOL performance. Following the successful initial engine runs, the focus now shifts to precise engine fine-tuning. This phase requires a high level of technical expertise and careful calibration to ensure optimal performance. Properly tuned engines are essential to achieving the efficiency, reliability and safety standards expected of the Do228NXT.

Safran opens helicopter engine MRO hub in Germany

Safran Helicopter Engines has opened a new facility in Norderstedt (Schleswig-Holstein), near Hamburg, Germany. The 3,000m2 site is dedicated to the support, maintenance and repair of helicopter engines, strengthening the company's ability to meet growing demand in the European helicopter market. The official opening took place in the presence of Claus Ruhe Madsen, Schleswig-Holstein's Minister for Economic Affairs, Transport, Labour, Technology and Tourism, alongside 200 customers, partners and institutional representatives. Safran Helicopter Engines has been established in Germany for 35 years and provides in-service support to 300 helicopter operators across Northern, Eastern and Central Europe, covering a fleet of 2,300 engines. With its new site, the company can offer customers a full range of support services for Arrius, Arriel and RTM322 engines, including local maintenance, on-site spare parts storage and round-the-clock availability. The new facility, 50% larger than its predecessor, is designed to achieve carbon-neutral operations through a range of initiatives, including photovoltaic panels, a green roof to absorb CO_2, and energy-efficient systems such as heat pumps and heat-recovery ventilation, while also ensuring optimal working conditions for staff. "The launch of our new German site is essential for delivering the highest standard of proximity service and support to our customers in the region. The opening of this facility is a direct response to the strong growth in both the civil and military helicopter markets in Europe. It also strengthens German sovereignty by enhancing local expertise, particularly with the introduction of new helicopters into the German armed forces." stated Cédric Goubet, CEO of Safran Helicopter Engines.

New Safran facility opening in Norderstedt, Germany © *Claudia Höhne / Safran*

IAI advances A330-300 P2F conversion effort

A330-300 P2F conversion © *IAI*

Israel Aerospace Industries (IAI), a global provider of passenger-to-freighter (P2F) aircraft conversions, has reached a major breakthrough in the expansion of its Airbus A330-300 conversion programme. With the aircraft now off jacks, the programme has completed its primary structural work and achieved significant progress towards full conversion and certification. The programme is now moving into the ground and flight-testing phase, with the first flight of the converted aircraft scheduled in the coming weeks. Certification of the A330-300 P2F programme is expected by the end of the year. The company is one of only a small number worldwide with proven expertise in carrying out advanced conversions for both Boeing and Airbus aircraft, including complex wide-body platforms. As global demand for freighter aircraft continues to grow, IAI is expanding its international network of conversion facilities to provide flexible, high-value solutions for airlines, leasing companies and cargo operators around the world. Boaz Levy, President and CEO of IAI commented on the milestone: "This achievement marks another step in executing IAI's long-term vision to expand its role in the global air cargo market. By continuously advancing our technological and industrial capabilities, we are positioned to deliver scalable and reliable solutions that align with our customers' evolving operational needs, while reinforcing our leadership in the conversion arena." Yaacov Berkovitz, EVP & GM, IAI's Aviation Group added: "This milestone reflects IAI's ability to transform decades of experience and advanced engineering expertise into long-term value for our customers. Our A330-300 passenger-to-freighter conversion has been purpose-built to meet evolving market demand, delivering a highly competitive value proposition and strong market appeal. As one of the few companies worldwide with the capability to execute comprehensive and highly complex conversions across both narrow-body and wide-body aircraft, IAI offers customers greater fleet flexibility, long-term confidence and resilient investment value across market cycles."

WLFC reports record quarterly lease rent revenue in Q1 2026

Willis Lease Finance Corporation (WLFC) has reported its financial results for the first quarter ended March 31, 2026 and announced a quarterly dividend of $0.40 per common share. The dividend is scheduled to be paid on 22 May 2026 to shareholders on record as of the close of business on May 11, 2026. Willis Lease Finance Corporation reported strong first-quarter 2026 results, with total revenue increasing 23.2% year-on-year to US$194.3 million. Income from operations rose 41.4% to US$33.8 million, while pre-tax income climbed 45.9% to US$36.8 million. Diluted earnings per common share increased 47.5% to US$3.26, and net income attributable to common shareholders rose 52.9% to US$23.7 million. Adjusted EBITDA also improved 19.9% to US$123.8 million. The company achieved record quarterly lease rent revenue of US$77.4 million, up 14.2%, alongside record maintenance services revenue of US$9.8 million, an increase of 74.9%. Gains from the sale of leased equipment rose 304.8% to US$18.0 million, while portfolio utilisation improved to 85.8% at quarter end, compared with 79.9% previously. For the three months ended March 31, 2026, total revenue increased 23.2% to US$194.3 million, compared with US$157.7 million during the same period in 2025. During the first quarter of 2026, combined core lease rent and maintenance reserve revenues reached US$132.9 million, up 8.4% from US$122.6 million in the corresponding period last year. The growth was primarily driven by stronger core lease and maintenance revenues, reflecting continued strength across the aviation market as airlines increasingly utilise the company's extensive portfolio of in-demand engines, together with its parts and maintenance capabilities, to avoid lengthy and costly engine shop visits. "In the first quarter we outperformed nearly every revenue and earnings metric compared to Q1 2025," confirmed Austin Willis, CEO of WLFC, adding: "And, thanks to the capital strategy we executed, we are poised for significant growth."

Liebherr delivers first A350F nose landing gear

Liebherr-Aerospace has delivered its first nose landing gear for the Airbus A350F freighter, extending a partnership with Airbus that spans more than five decades. The company has been a core programme partner since the launch of the A350, providing critical flight control components alongside the nose landing gear, while continuously advancing its technology to meet evolving aircraft requirements. The A350F, designed for long-haul cargo operations, required significant modifications to the baseline aircraft and its onboard systems. One of the principal challenges is maintaining ground stability during loading, particularly as the main deck cargo door is positioned behind the landing gear. This configuration introduces a risk of tail tipping if loading is not properly managed. To address this, Airbus has developed an advanced tail tipping warning system as part of its Safety Beyond Standard approach. The system determines the aircraft's ground balance using load data from the nose landing gear. To enable this, Liebherr has engineered a new electronic pressure sensor integrated within the changeover valve, capable of monitoring internal shock absorber pressure with high precision. Across the A350 family, Liebherr supplies a broad range of systems and components, including the flap differential gearbox, load-sensing drive strut, lower deck cargo door actuator, moving damper, nose landing gear and slat actuation systems. The A350F nose landing gear is developed, qualified and manufactured at Liebherr's Lindenberg facility in Germany, with comprehensive maintenance, repair and overhaul support provided through its global aftermarket network.

Liebherr team with nose landing gear for the A350F *© Liebherr Aerospace*

Boeing and Ontic broaden global valve supply partnership

At MRO Americas, William Ampofo, SVP Parts & Distribution and Supply Chain for Boeing Global Services (l) and Brian Sartain, COO for Ontic (r) *© Boeing*

Boeing and Ontic have announced a new distribution agreement at MRO Americas to supply Grimes engine valves to commercial airlines worldwide. The collaboration brings together Boeing Distribution's extensive global network with Ontic's expertise in critical aircraft components, including fuel management systems, ensuring operators have consistent access to high-quality valves essential for safe and efficient flight operations. The agreement further strengthens a long-standing partnership between the two companies, expanding the scope of support available to airline customers. It leverages Boeing Distribution's worldwide presence, advanced supply chain capabilities and global logistics infrastructure, including 24/7/365 aircraft-on-ground support. Combined with Ontic's role as OEM and licence holder, the partnership offers a robust and reliable solution for operators seeking both performance and cost efficiency. Under the terms of the agreement, airlines will benefit from comprehensive support services, including technical expertise, strategically positioned global inventory, and streamlined procurement processes designed to reduce lead times and improve operational continuity. The enhanced collaboration is aimed at helping operators optimise fleet performance while maintaining tight control over maintenance costs.

Air Nostrum E&M renews ATR maintenance agreement

ATR and Air Nostrum Engineering & Maintenance Operations (ANEM), the maintenance arm of Spanish regional airline Air Nostrum and its subsidiary, Mel Air, have agreed a further five-year extension to their global maintenance agreement (GMA). The renewal represents another key milestone in one of ATR's longest-running partnerships. ANEM has been relying on ATR's maintenance expertise since 1999, underscoring more than 25 years of consistent confidence in the manufacturer's support capabilities. Air Nostrum and Mel Air currently operate a fleet of 12 ATR 72-600 aircraft, the latest-generation turboprops recognised for their fuel efficiency and reduced emissions. By renewing the GMA, ANEM ensures continued access to ATR's comprehensive maintenance services for systems and components,

Air Nostrum ATR 72-600 aircraft © *AirTeamImages*

helping Air Nostrum maintain strong dispatch reliability while supporting essential connectivity across Spain and beyond. The agreement includes a wide range of services aimed at maximising aircraft availability and delivering more predictable maintenance costs. These cover access to ATR's global pool of line replaceable units (LRUs), along with exchange, repair and dedicated component support services.

ITP Aero starts development of new Hyderabad aerospace facility

Groundbreaking ceremony in Hyderabad, India © *ITP Aero*

ITP Aero has marked the expansion of its Hyderabad operations with a groundbreaking ceremony for a new facility in Hyderabad, India. The development will further strengthen the company's presence in the country and reflects its continued long-term investment in the region. Having operated in Hyderabad for 15 years, ITP Aero has established strong engineering and industrial capabilities, developed a skilled local workforce and built close partnerships within the regional aerospace sector. The new Hyderabad facility, scheduled to become fully operational in 2027, will manufacture components for commercial aviation engines, including fabricated and machined parts, supporting rising demand across the civil aerospace sector. The site represents the next stage of ITP Aero's expansion in India and will strengthen its role within the global aviation supply chain. The development is expected to create more than 350 skilled jobs over the next five years, in addition to the company's existing 250 manufacturing roles in the region. As part of its continued growth in India, ITP Aero has also appointed Sandeep Sharma as Managing Director India, bringing more than two decades of aerospace industry experience. Carlos Alzola, Managing Director of ITP Aero Group, commented on the new expansion: "Hyderabad has been part of our industrial journey for 15 years, we have seen this site grow and evolve alongside our business. This expansion is a source of pride, reflecting what we have achieved together and our confidence in the region's people and manufacturing capabilities. It also reinforces our long-term commitment to supporting the continued growth of commercial aviation worldwide, made possible by the consistent support of the Government of Telangana throughout this journey". The expansion comes amid continued global growth for ITP Aero, which reported revenues of €1.88 billion in 2025, up 17%, while EBITDA increased 28% to €379 million. The company has also committed €1.2 billion towards research and development and capital expenditure across its global operations by 2030. (€1.00 = US$1.18 at time of publication).

TrueNoord confirms Arcus as new majority investor

TrueNoord confirms Arcus as new majority investor © *TrueNoord*

TrueNoord has disclosed that investor Arcus Infrastructure Partners has firmly agreed to acquire an approximate 74% stake in the business, while founding investor Freshstream will re-invest to retain the remaining share. The move marks a significant step in the company's growth, providing stable capital to support future aircraft acquisitions as TrueNoord continues to build a global leased fleet of Embraer, ATR, Airbus and De Havilland Canada jets and turboprops. Anne-Bart Tieleman, CEO of TrueNoord, expressed delight in welcoming Arcus Infrastructure Partners as a new long-term investor, highlighting its role in supporting the company's growth in the 50–150 seat regional aircraft leasing sector. She stated: "They are investing in our business development expertise, our knowledgeable and experienced team, as well as our dynamic brand. Over the past ten years we have steadily become one of the world's leading specialist lessors, and I would like to thank Freshstream for their instrumental role in backing us from the start, alongside our previous investors and shareholders, BlackRock, Patria and many others, for the confidence that enabled us to build a super-successful business. The whole team at TrueNoord embraces this change and the momentum of our future trajectory." Michael Allen, Partner and Head of Transport at Arcus, commented: "Anne-Bart and team have done a phenomenal job building the TrueNoord platform over almost a decade, and the regional aircraft which they own and lease provide critical connectivity across dozens of cities and nations worldwide, powering economic and social development. We are excited to partner with the team for the next stage of their growth journey." Rayhan Davis, Managing Partner at Freshstream, proudly acknowledged the strength of the partnership with TrueNoord and the progress achieved alongside Anne-Bart and his team: "From a fleet of just three aircraft to one of the largest pure play regional aircraft lessors in the world, TrueNoord's trajectory has been exceptional, reflecting our strategy of backing entrepreneurial businesses and their management teams. We are excited to continue the journey and welcome Arcus on board for the next stage."

Asia-Pacific push for Cabinair–Summit platform

Cabinair Group and Summit Lenso have entered into a strategic partnership to create a new aircraft modification and cabin solutions platform in the Asia-Pacific region, with initial operations centred in Thailand. The venture brings together complementary capabilities, combining Cabinair's EASA-certified expertise in design, certification and modification with Summit Lenso's advanced aerospace manufacturing credentials and strong local presence. The partnership is structured to deliver a fully integrated service offering, spanning engineering, certification, production, installation and ongoing support. This end-to-end approach is intended to streamline project execution, reduce turnaround times and provide airlines and operators in the region with more efficient, locally delivered solutions. Asia-Pacific continues to be one of the fastest-growing aviation markets globally, supported by expanding fleets, rising passenger demand and increasing requirements for cabin upgrades and connectivity enhancements. Against this backdrop, Thailand is positioning itself as a key regional hub, offering both strategic geographic access to Southeast Asia and a rapidly maturing aviation ecosystem. Cabinair Group has already established a foothold in the region through its Sri Lanka-based subsidiary AeroKnow, acquired in 2024, and operates additional facilities across Europe and the United States. This global footprint supports a wide range of aircraft interior and modification programmes, enabling the company to serve an international customer base. The collaboration with Summit Lenso is expected to strengthen Cabinair's regional capabilities while leveraging local manufacturing expertise. By combining international certification standards with on-the-ground execution, the new platform aims to provide a more flexible and responsive solution to meet the evolving needs of airlines across Asia-Pacific.

VSE Corporation completes takeover of Precision Aviation Group

VSE Corporation finalises its Precision Aviation Group acquisition © *PAG*

VSE Corporation (VSE) has disclosed that it has successfully finalised its acquisition of Precision Aviation Group (PAG), a portfolio company of GenNx360 Capital Partners (GenNx), in a transaction valued at approximately US$2.025 billion in cash and equity. "Today marks a significant milestone in executing our strategy to build a focused, high-quality aviation aftermarket platform," said John Cuomo, President and Chief Executive Officer of VSE. "The addition of PAG meaningfully expands our global footprint, strengthens our repair capabilities, and enhances our ability to deliver integrated, end-to-end solutions to our customers." "Today marks a significant milestone in executing our strategy to build a focused, high-quality aviation aftermarket platform," stated John Cuomo, President and Chief Executive Officer of VSE. "The addition of PAG meaningfully expands our global footprint, strengthens our repair capabilities, and enhances our ability to deliver integrated, end-to-end solutions to our customers. Cuomo continued: "With the transaction closed, our focus shifts to integration and synergy realisation through cross-selling, repair insourcing, and procurement efficiencies. PAG's margin profile is immediately accretive and supports a clear path to exceeding 20% consolidated Adjusted EBITDA margins over time." Details of the transaction include a purchase price of approximately US$2.025 billion, comprising US$1.75 billion in cash and around US$275 million in equity issued to GenNx, exchangeable for VSE common stock. The agreement also includes a potential earnout payment of up to US$125 million, subject to PAG's 2026 performance targets.

The acquisition was financed through proceeds from VSE's February 2026 equity and tangible equity unit offerings, together with US$900 million raised under a new Term Loan B facility maturing in 2033. VSE said further details on the combined company's outlook, capital structure and integration plans will be provided alongside its first-quarter 2026 earnings results.

AMETEK strikes deal to acquire First Aviation Services

AMETEK has announced that it has entered into a definitive agreement to acquire First Aviation Services, a provider of highly engineered, mission-critical defence and aviation maintenance, repair and overhaul (MRO) services, as well as a manufacturer of related proprietary components. First Aviation's MRO capabilities encompass advanced electronics, rotor blades and assemblies, propellers, landing gear and flight controls. The company also specialises in the design, engineering and manufacture of critical components across a wide range of defence and aviation platforms. The First Aviation companies will continue to operate under the leadership of President and COO Paul Bolton. The business will form part of the North American Business Unit within AMETEK's MRO Division. Paul Bolton commented on the acquisition: "AMETEK is an outstanding company with a strong track record of performance. They understand our industry and bring important resources to support First Aviation's continued growth." "First Aviation is a strong strategic fit with our MRO platform, providing attractive market expansion opportunities and broadening the scope of our component MRO services," said David A. Zapico, AMETEK Chairman and Chief Executive Officer. "Their proprietary products and services further broaden our differentiated products serving mission critical applications. We look forward to leveraging our respective operating, engineering and distribution strengths to continue to grow our combined capabilities." First Aviation Services generates annual revenues of approximately US$80 million and operates six centres of excellence across the United States. The transaction remains subject to customary closing conditions, including relevant regulatory approvals.

Bird Aviation signs three-year MRO deal with KM Malta Airlines

© Bird Aviation

Bird Aviation has signed a three-year agreement with KM Malta Airlines to provide heavy maintenance services, strengthening the existing relationship between the two companies.
Under the deal, Bird Aviation will support the airline's fleet with a range of base maintenance activities, including C-checks and other scheduled work, carried out at its facilities in Larnaca, Cyprus. The agreement extends cooperation into a longer-term framework at a time when reliability, planning and close technical collaboration remain critical across the aviation sector.
Frederic Pralus, Chief Executive Officer of Bird Aviation, commented on the partnership: "This agreement reflects the trust that has been built through our cooperation with KM Malta Airlines. In a period where predictability and close coordination matter more than ever, having partners you can rely on makes a real difference. Our team remains focused on delivering the level of support and consistency that operators expect from us." "Securing dependable maintenance support is an important part of maintaining operational stability. Our collaboration with Bird Aviation has shown the value of working with a partner that understands both the technical and operational aspects of our requirements. This agreement allows us to plan ahead with confidence." added David Curmi, Executive Chairman at KM Malta Airlines. The agreement further reinforces Bird Aviation's position as a trusted maintenance provider in the region, while supporting KM Malta Airlines in maintaining fleet performance and availability.

ABL Aviation expands Asia footprint with Manila technical hub

ABL Aviation has opened a new technical office in Manila, reinforcing its presence in the Asia-Pacific region as airline demand continues to recover despite ongoing aircraft supply constraints. The facility will operate as a dedicated technical hub, supporting aircraft inspections, lease management and technical oversight across the company's expanding Asian portfolio. The Manila office complements ABL Aviation's existing regional bases in Hong Kong and Tokyo, while strengthening its wider global network spanning New York, Dublin, Casablanca and Dubai. This move underscores the company's long-term commitment to Asia-Pacific and its strategy of investing in in-house technical expertise to remain close both to airline partners and deployed assets. Led by Chief Technical Officer Donal O'Shea, the new office will ensure alignment with ABL Aviation's global technical standards while improving operational responsiveness on the ground. Establishing a local technical team is expected to enhance service delivery, enabling faster decision-making, improved asset management and stronger support for airline customers across the region. The expansion comes at a time of sustained growth in Asia-Pacific aviation markets, where rising passenger demand and limited aircraft availability are driving increased competition for assets. By strengthening its regional technical capabilities, ABL Aviation is positioning itself to respond more effectively to these market dynamics while maintaining high performance across its portfolio. The Manila hub also aligns with the forthcoming launch of ABL Industries, the company's Casablanca-based maintenance, repair and overhaul (MRO) and technical platform. Together, these initiatives reflect a broader strategy to build comprehensive in-house expertise across the entire aircraft lifecycle, from initial delivery through mid-life management to end-of-lease transitions. Through this investment, ABL Aviation continues to develop a fully integrated global platform that combines financial structuring expertise with robust technical capabilities, reinforcing its role as a trusted partner both for airlines and investors worldwide.

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APU Maintenance

Looking after the unseen workhorse of many an aircraft

By David Dundas

Hidden away in the tail of an aircraft, it is quite remarkable just what an Auxiliary Power Unit (APU) provides and what it can do in terms of an aircraft's functionality. It is perhaps the use of the word 'auxiliary' that most likely undermines its perceived value and capabilities. From the moment the main engines shut down and in the absence of ground equipment, the APU becomes responsible for the provision of all electrical power for the likes of hydraulics and instrumentation through to cabin lighting, as well as air conditioning for optimum passenger and crew comfort. Of course, one mustn't forget that the APU is also responsible for providing the power to restart the main engines from 'cold'. In relation to the term 'auxiliary', the APU is more than capable of providing power throughout the aircraft in the event of total engine failure, but that when in flight, the APU literally becomes surplus, auxiliary to requirements and is switched off.

Noelia Hernandez, Strategic Asset Manager, AJW Group

We wanted to lift the lid on just how much work is involved in maintaining APUs, so we spoke to five leading companies fully versant in all aspects of APU maintenance to get their take on this specific element of MRO operations.

How critical is the APU to day-to-day airline operations from a reliability and cost standpoint?

Because of its role when there is no ground equipment available, Vitalija Zutautaite, VP Trading at AerFin Ltd describes the APU as "fundamental" to day-to-day operations. She further explains: "If the APU becomes unserviceable, the aircraft is immediately subject to minimum equipment list restrictions, with defined time limits to restore serviceability. That

> ***"When an APU goes down, airlines become dependent on ground support equipment like GPUs (Ground Power Units), which introduces costly delays and additional handling requirements, so a reliable APU is the foundation of smooth turnarounds for airlines."***
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> *Noelia Hernandez, Strategic Asset Manager, AJW Group*

creates operational pressure quickly. At worst, an APU failure can lead to delays or cancellations, with knock-on costs including passenger compensation depending on the regulatory environment. While APU maintenance costs are modest compared to main engines, the operational impact of failure is anything but." Noelia Hernandez, Strategic Asset Manager at AJW Group uses the word "vital" to describe an APU, adding that "While the APU isn't a propulsion engine, its failure creates significant operational disruption. When an APU goes down, airlines become dependent on ground support equipment like GPUs (Ground Power Units), which introduces costly delays and additional handling requirements, so a reliable APU is the foundation of smooth turnarounds for airlines. While typically turned off during flight, the APU is an emergency source of electrical power during flight. For example, if an aircraft lost both IDGs, the APU can be turned on to power avionics and is also an emergency back-up for pneumatic systems."

The term chosen by Darran Brunton, Sales & Business Development Manager at EirTrade Aviation to describe the APU's role is "a key component" in terms of airline operations. He expands on this by advising that "APUs are generally quite reliable as they are treated like mini engines with tracked TSN and CSN, and in most examples contain LLPs. Maintenance on APUs can get expensive, with variable lead times depending on findings at shop inspections, making forward planning key to minimise costs. Most airlines now will have hot spares or short-term lease options to cover these gaps." He then adds that "From a reliability standpoint, the APU is a high cost, but standard system used across virtually all commercial airlines globally, though it is not strictly essential for dispatch as aircraft can operate under MEL (minimum equipment list) with ground support. However, because APUs can burn a lot of fuel when in operation, airlines generally try to limit their use on the ground to reduce costs, particularly fuel burn." Meanwhile, Marcy Broadway, Interim Director of APU Programs at StandardAero finds the word "critical" appropriate when considering the need for an APU because, as she tells us, "The APU acts as a vital backup for electrical and hydraulic systems in case of main engine generator failures. While aircraft can fly without a functioning APU under the Minimum Equipment List (MEL), this does increase operating costs due to a reliance on external ground equipment. The APU itself is very reliable as long as all OEM maintenance guidelines are followed.

We finally have the use of the word "essential" coming from Quincey Pagani, Director of Sales – APU, at Werner Aero LLC. She succinctly points out that "If the APU is inoperative, airlines would have to be dependent on ground equipment, which could increase delays / cancellations, costs, and overall operational complexity. Unscheduled maintenance events can cause major schedule and cost impacts for operators."

In what ways does APU performance impact overall aircraft turnaround and on-time performance?

As with most technology, the more complex and greater the number of parts, the greater the chance there is of something going wrong. While an APU may in many ways be indispensable where the functionality of an aircraft is concerned, we wanted to know when having an APU can also create additional challenges.

"APU performance has a direct impact on turnaround efficiency and on-time performance. A fully operational APU allows aircraft to operate independently during ground handling without having to wait for external (GPU) support," says Noelia Hernandez, adding that "... any performance degradation, whether reduced electrical output or compromised bleed air pressure, extends start times and can lead to failed engine starts, which lengthens turnaround times. This is particularly relevant for short-haul operators, where tight scheduling means even minor delays can have significant operational and financial impact." However, Darran Brunton has taken a more optimistic view of the situation, concentrating on the

AJW HQ, Slinfold, United Kingdom

plus side of things. "APU performance accelerates TAT (turnaround times) by providing immediate onboard electrical power and bleed air, enabling rapid operation of aircraft systems. It supports operational autonomy, allowing crews to start engines and power systems without waiting for ground support equipment. APUs are generally highly reliable and offer flexible capability compared to ground-based support, although they are more expensive to operate in terms of fuel and maintenance. They also simplify and streamline pre-departure and turnaround procedures, helping aircraft maintain tight TAT schedules and reducing dependency on airport infrastructure availability," he explains.

The APU provides essential electrical power and pneumatic air, used for air conditioning and main engine start, Marcy Broadway tells us, before pointing out the pros and cons of an APU: "A functioning APU enables airliners to 'turn around' faster, compared to aircraft lacking an APU (or with a non-functioning unit), which necessitates a reliance on ground equipment. An APU is already running when an aircraft arrives at the gate, and the main engines are shut down. By comparison, if the aircraft is reliant on an external power unit there will be extra steps – and time – required to get the aircraft running on ground power, resulting in deplaning delays and longer turnaround times. A running APU keeps tight turnaround schedules flowing!". Quincey Pagani also sees the upside and downside of the APU, noting that as it provides so much support to operating systems when an aircraft is on the ground

Marcy Broadway, Interim Director, APU Programs, StandardAero

its functionality is directly related to aircraft turnaround and on-time performance." She goes on to say that "When the APU is not operating reliably, the poor performance of the APU could cause delays in boarding or departure, which would negatively impact on-time performance for the operator. Another point is that when an operator experiences less-efficient aircraft turnarounds, it could increase fuel burn and emissions that would increase overall operating expenses. Maintenance issues are not the only things that are affected when an APU performance is less than optimal but also increases in ground-operating costs can result as well as impacting an operator's flight schedule."

Lastly, Vitalija Zutautaite points out just how problematic a non-functioning APU can be, commenting that: "APU performance has a direct impact on turnaround times and schedule reliability. A slow start or failure delays engine start and pushback, while poor bleed performance affects cabin conditioning – particularly critical in extreme climates where turnaround windows are tight. In airports with limited ground support equipment, the APU is often the only available solution. In those environments, a failure can quickly escalate into a significant delay or even a diversion. There's also a supply challenge. APU removals are typically unplanned, and without spare units available, operators are forced into urgent sourcing – driving AOG exposure and additional cost."

What are the typical maintenance intervals and shop visit drivers for APUs?

Every component on an aircraft requires regular checks and inspections, while those components with LLPs, such as an APU, present even greater challenges. How the subject of APU maintenance is approached would seem to be reasonably uniform where this article's contributors are concerned, though some additions were of great interest. "APUs are included in scheduled maintenance checks (often within A-checks etc), where they undergo visual inspections and may include more detailed tasks such as borescope inspections. EGT margins are continuously monitored and drops in performance or starting capability can lead to APU removal for a shop visit. APU maintenance is generally 'on-condition', meaning there are no fixed overhaul dates. Maintenance and removal are driven by condition, performance, and life-limited part tracking. APUs remain in service until performance degrades i.e., reduced EGT margin, reliability issues or when LLP limits are reached," Darran Brunton suggests. Marcy Broadway is primarily on LLPs as the principal driver for driving shop visits. "This depends on the APU type. The main shop visit drivers are for life limited parts (LLP) time expiration, with the APU's life limits driving maintenance schedules. Any LLPs experiencing reliability issues – such as cracked discs or cracked and liberated blades – will result in higher-than-normal shop visit frequency (and repair costs)", she says.

Like Marcy Broadway, Quincey Pagani is also focused on LLPs. "Depending on usage and typical operating conditions of the APU, most shop visits are typically around 5-7k hours of usage. However, maintenance intervals are typically driven by hours / cycles and the life remaining on the LLPs. The main scheduled drivers are hot-section wear, combustor and compressor deterioration, LRU condition, and LLP wear. For many APU models, some units can have a lighter repair work scope to restore the serviceability of the APU and then others will have a heavier shop visit that would involve a full disassembly of the APU, with LLP replacement based on wear or cycle limitation," she advises. Noelia Hernandez reiterates Pagani's recommendation over the number of usage hours between shop visits, though adds the codicil of the operating environment: "Aircraft operating in hot or harsh climates, for example, may experience more

> ***"The main shop visit drivers are for life limited parts (LLP) time expiration, with the APU's life limits driving maintenance schedules. Any LLPs experiencing reliability issues – such as cracked discs or cracked and liberated blades – will result in higher-than-normal shop visit frequency (and repair costs)."***
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> *Marcy Broadway, Interim Director, APU Programs, StandardAero*

Maryville tech & APU
© StandardAero

conservative intervals. New APUs often achieve longer initial intervals before their first shop visit, but subsequent removals tend to follow tighter cycles. Shop visits are primarily driven by performance deterioration, particularly hot section degradation, typically observed through reduced EGT margins and increased fuel burn, and scheduled events such as life-limited part (LLP) replacements." Vitalija Zutautaite perhaps sums up the above comments very succinctly as she informs us: "APUs are largely maintained on an on-condition basis, with shop visit intervals typically ranging between 4,000 and 8,000 flight hours, depending on utilisation and operating environment. In addition to performance-driven removals, life-limited parts on certain platforms – such as the GTCP131-9A and -9B – can also dictate shop visits."

What are the most common failure modes or drivers for unscheduled APU removals?

The failure of an APU is not as catastrophic as it may sound, providing the aircraft is flying to an airport with an available Ground Power Unit (GPU). In addition, while it can cause inconvenience and problems, an aircraft is still considered safe to fly without a functioning APU. What we wanted to know was root cause of APU failures and reasons for unplanned maintenance is.

Like several others, Darran Brunton at EirTrade Aviation was quick to identify the hot section of an APU as being a focal point of problems as it "... operates under high stress, making wear and damage relatively common." He adds that "The main driver is EGT margin erosion, where internal wear reduces efficiency and leads to higher operating temperatures. Mechanical failures can also occur, particularly in the starter-generator and Fuel Control Unit (FCU). Other common issues include oil seal leaks, foreign object damage (FOD), and compressor blade erosion. Foreign material ingestion can be more likely when aircraft are idle or not properly stored." Quincey Pagani at Werner Aero LLC is pretty much in lockstep with Brunton as she tells us that "Deterioration / wear and tear and external component failure are typically the main drivers for unscheduled removals where these drivers can cause the unit to be no longer serviceable. The most common unscheduled removal drivers can include hot-section wear, oil system issues, and common failures of the LRUs such as the starter, fuel control unit, or ECU. Unscheduled removals are generally one of the main cost drivers for operators within their APU maintenance programmes."

Vitalija Zutautaite at AerFin Ltd, Noelia Hernandez at AJW Group and Marcy Broadway at StandardAero all provide similar variations on a theme with Zutautaite suggesting that "The most common triggers are fail-to-start events, performance deterioration linked to EGT margin loss, oil leaks, and component failures such as starter generators and bleed valves. External factors also play a role. Foreign object damage and harsh operating environments – particularly hot and high conditions – accelerate wear and increase removal rates." Hernandez indicates that the removal of an APU is usually as a result of the loss of its "... functionality such as complete power loss or the inability to generate sufficient bleed air pressure for engine starts. The failures are often symptomatic of underlying factors like foreign object damage (FOD), oil system issues, or excessive vibration." She then adds that "You might see progressive performance deterioration within the hot section through EGT margin erosion or reduced output performance. It is a reliable performance indicator, so it's important to recognise it as a symptom of deterioration rather than a

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Quincey Pagani, Director of Sales – APU, Werner Aero LLC

Maryville tech & APU © StandardAero

root cause. Other parameters captured by the ACMS data (via DMM downloads) or health monitoring system, such as IGV data and other control system metrics also provide valuable insight into the overall APU condition." Broadway concludes by stating that much depends on the APU type, pointing out that "Most failures that we see are caused by operators exceeding the OEM's recommended 'soft time' maintenance interval, resulting in blade or disk failures. The other major drivers for unscheduled removals are high exhaust gas turbine (EGT) temperatures, oil leaks or high oil consumption," she says.

Darran Brunton, Sales & Business Development Manager, EirTrade Aviation

How has predictive or condition-based maintenance (CBM) changed APU maintenance planning?

While an APU failure won't necessarily result in an AOG scenario, it still has the potential to cause problems. As with all aspects of aircraft maintenance, anything that can help foresee a potential problem has to be of benefit. So, what difference has predictive maintenance or CBM made?

According to Noelia Hernandez, "Predictive maintenance is rapidly becoming the industry standard. OEMs like Honeywell and Pratt & Whitney have developed their own monitoring systems, and some independent MRO providers are developing sophisticated condition-monitoring platforms. This shift enables operators to move from reactive, failure-driven maintenance to data-driven decision-making. By continuously tracking EGT trends, bleed air performance, oil consumption, and start times, operators can anticipate deterioration before it becomes critical, avoiding unscheduled removals and inflated repair costs. The result is not just improved reliability but a fundamental redesign of maintenance planning that eliminates unnecessary shop visits." In addition, Darran Brunton is also one to mention 'on condition' when referring to APU maintenance. He explains that "Predictive maintenance has shifted APU planning from rigid schedules to more data-driven, on-condition strategies. This allows operators to maximise the utilisation of LLPs and keep units on wing until performance degradation is observed. By using sensor data and trend monitoring (e.g., EGT margin, start performance), airlines can anticipate failures in advance, reducing unscheduled removals and AOG events, while improving maintenance planning and resource allocation."

"The use of predictive maintenance and

> ***"Predictive maintenance has shifted APU planning from rigid schedules to more data-driven, on-condition strategies. This allows operators to maximise the utilisation of LLPs and keep units on wing until performance degradation is observed."***
>
> *Darran Brunton, Sales & Business Development Manager, EirTrade Aviation*

CBM has led to a greater focus on data-driven maintenance planning, rather than removals based on calendar dates. The use of real-time data has allowed airlines and MROs to provide more accurate removal schedules, which helps to keep fleets flying longer while reducing the incidence of unscheduled removals. In addition to improving maintenance planning and removal schedule visibility, this proactive data-driven approach also allows airlines to identify potential issues in advance, before critical failures actually occur," Marcy Broadway informs us, underlining what a difference the ability to be proactively reactive rather than solely reactive makes. Quincey Pagani and Vitalija Zutautaite are of a similar mind to Broadway in terms of being more proactive. Pagani explains that "Predictive or condition-based maintenance has changed APU maintenance planning by allowing operators to be more proactive on being able to predict maintenance issues early and overall reducing unexpected failures. Based on trend behaviour, utilising predicative maintenance can provide recommended actions before an operator experiences an unscheduled removal." "Predictive and condition-based maintenance have shifted APU management from reactive to proactive. Operators now have access to real-time performance data, including EGT trends, oil parameters and start behaviour. That visibility allows issues to be identified earlier, reducing AOG risk and enabling more controlled maintenance planning. It also supports a move away from fixed intervals towards true on-condition maintenance – improving reliability while avoiding unnecessary shop visits. Increasingly, OEMs and MROs are supporting this with digital health monitoring solutions that can forecast maintenance requirements in advance," Zutautaite concludes.

What strategies are airlines using to reduce APU-related maintenance costs?

While predictive maintenance may help to reduce unexpected APU problems and even failures, reducing the cost of any maintenance also has to be a priority. "Airlines can reduce APU-related maintenance costs by: limiting run time of the APU by utilising ground power which can reduce the amount of fuel used and slows down wear accumulation; using used serviceable material during shop visits or implementing exchange pool agreements to improve availability and reduce downtime; and adapting predicative maintenance mechanisms to help for better planning of maintenance events rather than waiting until an event becomes AOG," Quincey Pagani suggests. Marcy Broadway on the other hand looks at a slightly different aspect of maintenance planning, and that is the use of data, because "Airlines are using a more proactive data-driven approach, which helps to avoid unnecessary removals and shop visits. The data-driven approach to removals also helps repair shops to more efficiently schedule induction slots, resulting in less down-time for APUs while they are in the shop. In addition, many airlines are working closely with MROs in order to help keep maintenance costs down, using serviceable or repaired components when possible to realise cost savings versus the use of new parts. Finally, many airlines are standardising their fleets and their maintenance practices when it comes to APUs and specialised maintenance training associated with them."

Just-in-time maintenance certainly helps to avoid costly unscheduled APU removals as well as AOG incidents according to Darran Brunton. He further advises that "Maintenance teams may also perform compressor washes to help recover performance and improve EGT margin, extending time on wing (benefits vary by condition and environment). Additionally, many operators use power-by-the-hour (PBH) or leasing/exchange programmes to stabilise long-term costs and transfer overhaul risk to third-party providers." "There is a dual approach at play here. Forward thinking airlines are optimising APU use while also refining maintenance strategies," says Noelia Hernandez. "First, they're minimising unnecessary APU operation by utilising ground power when available (GPU). They're also partnering with independent MRO providers who deliver faster turnarounds and greater flexibility. Lastly, they're strategically using serviceable (SVC) components with remaining life rather than using new parts. Access to extensive APU portfolios and flexible material support solutions, such as those offered by AJW, also play a key role in minimising downtime and managing maintenance costs. Together, these strategies enable airlines to balance maintenance spend with operational effectiveness, something that potentially gives them a competitive advantage in today's margin-conscious environment."

Airlines are taking a practical, multi-layered approach. Reducing APU run time is key – using ground power and pre-conditioned air wherever possible limits wear and extends time on wing, says Vitalija Zutautaite. She then explains further that "Commercial strategies also play a role. Power-by-the-hour agreements provide cost certainty and access to serviceable units, helping minimise downtime during maintenance events. There's also a clear shift towards serviceable and overhauled material in place of new OEM parts, without compromising reliability. Underpinning all of this is better data. Proactive monitoring and condition-based maintenance allow operators to intervene early, avoiding secondary damage and costly repairs. The result is lower overall maintenance cost and more consistent operational performance."

Vitalija Zutautaite, VP Trading, AerFin Ltd

> ***"Proactive monitoring and condition-based maintenance allow operators to intervene early, avoiding secondary damage and costly repairs. The result is lower overall maintenance cost and more consistent operational performance."***
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> *Vitalija Zutautaite, VP Trading, AerFin Ltd*

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Inventory Locator Service

Talking Inventory Optimisation

By David Dundas

Company History

The origins of Inventory Locator Service LLC (ILS) date back to 1979 in Memphis, Tennessee, when John Williams, founder of The Memphis Group, established a business-to-business marketplace that allowed aviation parts buyers and sellers to search inventory, connect with suppliers, and negotiate orders more efficiently. At a time when much of the aviation aftermarket still depended on phone calls, paper catalogues, and fragmented supplier relationships, ILS helped pioneer a more transparent and searchable approach to aircraft parts sourcing.

Over the decades, ILS evolved alongside the aviation aftermarket itself. The company became part of Aviall, later came under Boeing ownership, and in 2019 was acquired by CAMP Systems, a Hearst company. That progression reflects a broader industry shift: from basic inventory location to a more connected aviation software and services ecosystem, where marketplace visibility, data quality, supplier intelligence, and digital commerce increasingly influence how buyers and sellers operate.

Today, ILS remains rooted in its marketplace heritage while serving a broader role in the global aviation aftermarket. Its history as an early digital parts marketplace gives it a distinctive position: ILS is both a long-standing sourcing platform and a growing intelligence layer for customers navigating a more complex, data-driven supply environment.

Operational Services

ILS provides a global digital marketplace and aerospace business intelligence services for buyers and sellers of parts, equipment, and services across the aviation aftermarket. The platform supports Commercial, OEM, MRO, Trader, Defence, Business Aviation, and General Aviation customers by helping them identify available inventory, evaluate sourcing options, understand market activity, and make faster, more informed purchasing decisions.

The marketplace includes access to OEM, USM, PMA, Airworthiness Directive, MRO services, and unapproved parts information, along with aftermarket supply, demand, and pricing data. With more than 298,000 users across over 165 countries, ILS provides broad visibility into verified global aerospace parts inventory and market activity.

ILS also supports suppliers through SalesEdge Commerce™, a fully integrated eCommerce solution designed for the aviation aftermarket. The platform enables aviation parts and services suppliers to promote their businesses through branded eCommerce storefronts, helping connect marketplace visibility with digital commerce.

More broadly, ILS operates as part of a wider aviation software and services ecosystem that includes airframe and

engine health management systems, ERP platforms, business and general aviation services, and trip logistics capabilities. Within that ecosystem, ILS helps customers connect sourcing visibility, market intelligence, and transaction enablement in a way that supports both day-to-day purchasing and longer-term inventory strategy.

These capabilities are increasingly relevant as aviation companies rethink how they manage parts availability, working capital, supplier responsiveness, and operational risk. In an environment shaped by supply chain volatility, longer lead times, repair constraints, and continued pressure to avoid AOG disruption, inventory optimisation depends on more than what a company owns. It also depends on what it can see, source, forecast, and act on across the wider market.

That context formed the basis of AviTrader's discussion with several ILS leaders, who shared their perspectives on how inventory strategies are changing and how data, visibility, pooling, and AI-enabled intelligence are influencing the future of aviation aftermarket planning.

AviTrader MRO: How has the post-pandemic recovery and supply chain volatility changed inventory strategies?

Ashley Neeley, VP of Product Services: Post-pandemic supply chain volatility has pushed some airlines away from lean, just-in-time inventory models toward more resilient, buffer-based strategies... or just-in-case availability without just-in-case ownership. To balance out the added cost and risk of holding more stock, airlines are getting creative. Some are offloading certain parts packages or using consignment models, so they can access what they need without tying up as much capital. At the same time, there's a shift toward shared, network-based inventory, where suppliers and MROs manage pooled stock across multiple operators. Overall, I believe the priority has shifted. It's no longer just about minimising inventory. It's about making sure the right parts are available when and where they're needed to keep operations running smoothly.

Ashley Neeley, VP of Product Services, ILS

What data inputs are most critical for accurate demand forecasting?

James Scott, VP of Information Services: The most critical inputs for accurate demand forecasting start with buyer intent data. Search activity, including part-number lookups, keyword trends, and repeated searches for the same components, often provides the earliest signal of rising market interest. RFQ volume is equally important because it reflects stronger buying intent, especially when measured by part number, condition, quantity, and urgency. In an aviation industry where many transactions still move offline through phone, fax, and email, these marketplace signals are especially valuable because they reveal demand patterns even when final order data is not fully visible. Just as important are the supply-side and market-response inputs that help explain whether demand can be met. Quote activity, including no-quote rates, supplier response times, and price variation, can indicate tightening supply or growing urgency in the market. The number of active suppliers per part, visible inventory, lead times, and inventory updates—especially decreases in available quantity that may suggest fulfilment—also provide important forecasting context. To make these signals accurate, they must be supported by clean part master data such as normalised part numbers, interchangeability, condition codes, and aircraft applicability. Together, these inputs can provide a clearer view of demand by combining buyer behaviour, supplier responsiveness, and market availability.

James Scott, VP of Information Services, ILS

What are the biggest inefficiencies today: overstocking, understocking, misallocation, or data quality?

Ashley Neeley: I believe the biggest inefficiency in aviation today is poor data quality, which drives many downstream problems across inventory and operations. Because systems are fragmented and data is inconsistent, companies can struggle with accurate forecasting and real-time visibility. This leads to misallocation, where parts exist within the network but are in the wrong locations, often causing costly AOG situations. To compensate for uncertainty, companies can overstock inventory, tying up capital, while still experiencing pockets of understocking when critical parts aren't available where needed.

How do pooling agreements influence internal stocking levels?

Greg Creekmore, Regional Sales Manager: Pooling agreements fundamentally change how one

Greg Creekmore, Regional Sales Manager, ILS

might think about stocking. Instead of carrying deep inventory, they can rely on shared access to parts across a network. That lets you reduce internal stock levels without increasing risk.

Rob Suhs, VP of Global Sales: I see pooling as a tool for access, not a replacement for inventory strategy. Its real value is that it gives operators a way to access high-value, lower-frequency material without having to own every unit themselves. That can lower the capital tied up in inventory, but in the current environment, I do not think pooling is driving broad de-stocking. What I am seeing instead is a more selective approach to internal stocking. Operators still need to protect the parts that are truly dispatch-critical or time-sensitive, especially when supply conditions remain uneven. So, the stronger model today is a hybrid one: hold the inventory that directly protects the operation and use pooling to add flexibility where ownership is less efficient. That is also where market visibility becomes much more important. The better informed you are about supply options, the better decisions you can make about what to stock internally, what to source externally, and where pooling makes the most sense.

What are the operational risks of over-relying on external pools?

Greg Creekmore: One has to trust the performance of the pooling providers fill rates, response times and logistics. If that slips, your operation feels it immediately. So, while pooling reduces inventory burden, it raises the importance of vendor performance and contract structure.

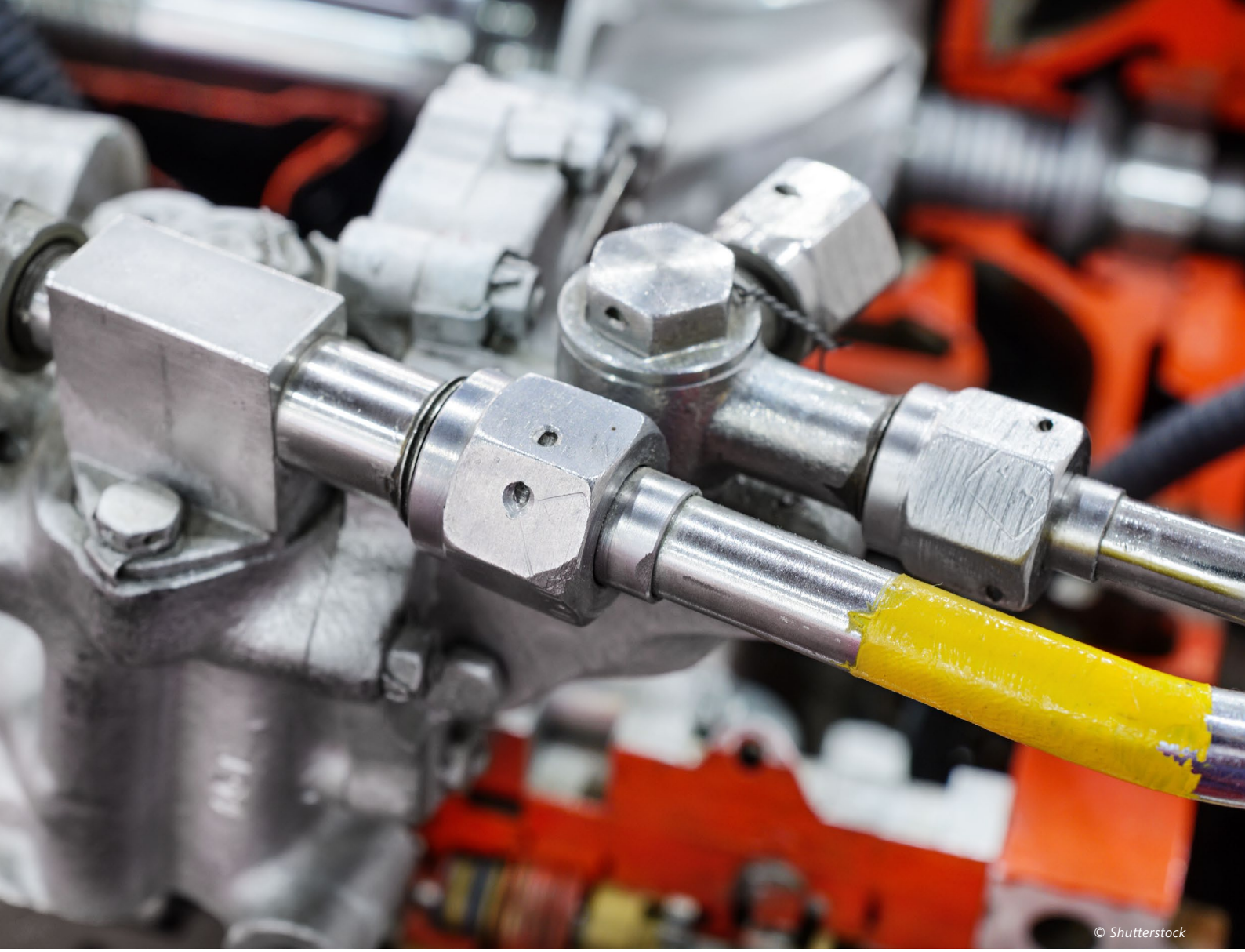
Rob Suhs: In my view, the biggest risk is loss of control. A pool can work very well when conditions are stable, but when the market tightens, the question is no longer whether a part exists somewhere. The question becomes whether it is available in the right place, at the right time, with enough certainty to protect the operation. That is where over-reliance can become a problem. If too much of your strategy depends on outside access, you can end up exposed to slower response times, lower priority in a constrained environment, and higher AOG risk when multiple operators are competing for the same material. So, I think pooling is most effective when it is part of a broader resilience strategy, not the entire strategy. Operators still need enough internal protection, enough sourcing flexibility, and enough visibility into alternatives to avoid turning an external pool into a single point of failure.

How do you see AI influencing spare parts forecasting?

Greg Creekmore: One I see AI taking a lot of the guesswork out of spare parts forecasting, which has always been part science, part experience. It builds on historical usage and seasonality but goes further by processing far more variables and surfacing patterns you'd otherwise miss, like failure trends, shifts in demand, and early reliability signals. That lets one forecast more accurately and adjust stocking before issues hit operations. It also helps strike a better balance between availability and cost, so operators can run leaner without increasing risk. Tools like ILS add another layer by bringing in real-time market data and sourcing visibility, strengthening both forecasting and supply decisions. That said, AI doesn't replace experience. It's a tool. You still need someone who understands the operation, the fleet, and AOG realities. The best results come from combining AI, trusted data sources like ILS, and practical judgment.

Rob Suhs: I think AI will have a meaningful impact on spare parts forecasting, but probably not just in the way people first describe it. The biggest value is not simply better prediction. It is better decision-making. Forecasting has always depended on the quality of the underlying signals. If your inventory data is incomplete, your lead times are moving, or your repair cycles are inconsistent, even a good forecasting model can only do so much. Where AI becomes powerful is in improving the signal itself by identifying patterns earlier, surfacing anomalies faster, and connecting maintenance, usage, and supply data in a way that helps teams act sooner. Over time, I think the real shift will be from static forecasting to more dynamic planning. Instead of asking what we used last quarter, teams will be better positioned to ask what we are likely to need next, where the risk is building, and what action we should take now. That is where the business value sits: less excess inventory, faster sourcing decisions, and fewer avoidable disruptions.

Rob Suhs, VP of Global Sales, ILS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PMA Parts Review

Assessing the role and benefits of PMA parts in today's MRO environment

By David Dundas

It wasn't until the 1950s that the need for Parts Manufacturer Approval (PMA) parts appeared when repurposed and surplus wartime aircraft needed repairs, but the aircraft were no longer being manufactured, so there was an automatic shortage of OEM parts. With necessity being the mother of invention, it was decided that parts could be manufactured by anyone and used by carriers and MRO operatives, but that these parts would still be subject to the strictest regulations and scrutiny under the watchful eye of the US Federal Aviation Administration. This solution to the previous single option of using OEM parts gained traction and in the 1980s and 1990s, PMA parts became more and more popular.

We decided to take a closer look at the PMA landscape today with the help of three respected industry professionals.

What role do PMA parts play in today's aircraft maintenance ecosystem?

Jeremy Hahn, VP of Engineering at Jet Parts Engineering is quick to point out that PMA parts take pressure off the OEM supply chain as well as providing cost relief, while adding that: "They return leverage to operators and hold OEM manufacturers accountable in how they price and support their products. And the beneficiaries extend well beyond the maintenance shops: operators, airlines, and ultimately passengers all gain with PMA when parts availability improves, problems are addressed, and costs are held in check." Virgil D. Pizer, Chief Executive Officer at PEM-AIR Turbine Engine Services is of a similar mind to Hahn in terms of supply chains and costs. He feels that where PMA parts are concerned, "They enable operators and lessors to manage lifecycle economics more flexibly, reducing dependency on OEM lead times while maintaining full regulatory compliance. As fleets age and secondary engine programmes remain active longer than forecast, PMA adoption helps sustain airworthiness and operational continuity without compromising reliability or traceability." He continues: "For us at Pem Air, PMA integration is a practical extension of our customer first approach. It allows us to tailor workscopes to each operator's economic and technical reality, balancing OEM, PMA, and DER solutions to achieve the best long-term outcome. By combining PMA parts with DER repairs where appropriate, we preserve performance standards while keeping maintenance predictable and cost aligned, ensuring

> ***"Not enough OEM support or planning can lead to issues like long lead times, and shortages. Critical OEM part shortages in the aftermarket cause operators expensive delays, AOGs and even cancellations."***
>
> *Jelani Cain, Director of Repairs, Werner Aero, LLC*

engines stay productive assets, not financial liabilities." Over at Werner Aero LLC, company Director of Repairs, Jelani Cain, is also a proponent of the belief that "PMA's offer a solution to material supply chain issues in a market where options are often slim." She advises that "PMA parts play a critical role in keeping aircraft maintenance ecosystems going. Airlines are operating aircraft in their fleet for longer lifespans and OEMs are focused on supporting their on-wing and stock-inventory requirements; sometimes that focus on the airlines comes to the detriment of the aftermarket. Not enough OEM support or planning can lead to issues like long lead times, and shortages. Critical OEM part shortages in the aftermarket cause operators expensive delays, AOGs and even cancellations."

How has the perception of PMA parts evolved over the past decade?

While PMAs may have been around for over 70 years, their adoption into the MRO ecosystem was never really overwhelming and it wouldn't be unreasonable to assume that for some time they were looked upon more as an inferior alternative or last-resort solution. All three respondents are in accord when it comes to seeing the opinion surrounding PMA parts changing quite dramatically today, primarily based on quality issues.

Virgil D. Pizer believes that over the past decade, PMA parts have moved from being viewed as cost-driven alternatives to being recognised as strategic enablers of reliability and continuity across the engine maintenance landscape. He explains further: "Broader industry acceptance has followed proven performance and regulatory confidence; major airlines, independent MROs, and even OEM-aligned shops now routinely incorporate PMA solutions into lifecycle planning. The remaining hesitation largely sits with lessors, who tend to prioritise asset conformity and remarketing flexibility, though even that stance is softening as PMA traceability and documentation standards continue to mature. For us at Pem Air, this shift has opened the door to deeper collaboration and technical trust. Operators increasingly approach PMA integration as part of a planned lifecycle strategy rather than a last-resort measure. By pairing PMA with DER repairs, we help customers achieve predictable performance and cost stability, turning what was once a tactical choice into a cornerstone of sustainable turbofan maintenance."

Jelani Cain certainly feels that over the last decade the industry as a whole has become more accepting of PMA parts, telling us that "Some of that has to do with the supply chain disruption caused by COVID. COVID's unforeseen disruption led to material shortages across the globe and industries worldwide, aviation being no different. While commercial air traffic drastically decreased during this time, the surge in air cargo demand meant most cargo freighters saw an increase in usage. PMAs played a pivotal role in keeping those freighters operating by providing an alternative to the OEM's bottlenecks, delays and obsolescence. Many in the industry have a greater appreciation for PMAs after seeing how they helped the industry during COVID." Jeremy Hahn sees the perception of PMA parts changing over the decade from a solution once met with scepticism and reluctance to one that airlines now seek out with eagerness and even urgency. However, he cautions that "... that transformation wasn't handed to the industry; it was earned through decades of outstanding engineering, reliable supply chain support, and first-rate customer service. Today, the dynamic has reversed entirely. Rather than PMA suppliers selling into a hesitant market, forward-looking airlines are aggressively driving PMA adoption, pushing the boundaries of PMA acceptance and integrating these parts into increasingly critical areas of their fleets."

Jelani Cain, Director of Repairs, Werner Aero, LLC

What are the main compliance challenges operators face when introducing PMA parts into their fleets?

Because PMA parts are an alternative, a replacement for OEM parts, their introduction within the parts supply chain has to come with considerable oversight from the FAA to ensure the highest safety standards are upheld. However, this has to present its own set of challenges for fleet operators, as you will now discover.

For Virgil D. Pizer, the toughest compliance hurdle is traceability and documentation. He further informs us that: "Regulators demand clear proof that PMA parts meet or exceed OEM standards and that installation records align with approved data. Operators must ensure every component carries proper FAA or EASA approval, conformity tags, and integration into maintenance tracking systems - especially when engines cross borders or leasing contracts with differing conformity clauses." He then adds: "... we treat compliance as a partnership, not paperwork. Our teams maintain full traceability from certification through installation, validating both engineering data and documentation when PMA parts are paired with DER repairs. This approach keeps airworthiness intact while giving operators confidence that every decision meets regulatory expectations and supports long term asset value."

Jelani Cain is more concerned about FAA approval. He advises that "Operators are responsible for verifying that all PMAs are FAA approved before being installed by checking the 8130-3 certificate with

the unit. Operators can check PMA parts are listed in the FAA Dynamic Regulatory System on the FAA's website. Even after an operator confirms 8130-3 is correct, they still need to verify the part is applicable to their aircraft before installing." Jeremy Hahn, on the other hand, is more focused on aircraft eligibility, commenting that he sees no barriers to introducing PMA parts into customer fleets as PMA parts satisfy the same airworthiness regulations as their OEM counterparts. He notes, however, that: "The primary exception arises when a PMA supplement lacks the necessary aircraft eligibility. Since PMA approvals encompass eligibility on top of design and production approval, incomplete eligibility listings can drive short term issues and isn't uncommon. In those cases, the PMA holder must pursue an eligibility expansion through the FAA, or the operator can directly write the part into their service manuals. Beyond this, operators may also encounter internal hurdles such as obtaining engineering acceptance, procurement authorisation, or fleet configuration approval before a PMA part can enter service."

What kind of cost savings can operators realistically expect from using PMA parts?

It would not be unrealistic to expect that PMA parts would be less expensive than OEM parts, but perhaps that simplistic opinion might mask the true value of PMA parts in connection with overall MRO costs, especially when it comes to avoiding problems that the delay in OEM parts' provision can create. All three respondents have identified indirect cost savings beyond actual price. For example, Jeremy Hahn is quick to point out that "The cost savings associated with PMA parts are frequently underestimated when the analysis stops at unit price. While a straight OEM-to-PMA price comparison may show savings of 20% or so, the broader picture tells a more compelling story. In reality, the full value proposition extends well beyond unit price. Larger discounts are regularly available, and when you factor in the cost relief that comes from consistent product availability and reduced AOG exposure with the responsiveness of attentive supplier relationships, the cumulative savings can be overwhelming. Viewed in their entirety, PMA parts frequently deliver meaningful relief to operational costs and a large impact to the overall bottom line, all with the customer support of a partner whose goals are aligned."

Virgil D. Pizer, Chief Executive Officer, PEM-AIR Turbine Engine Services

Virgil D. Pizer backs up Hahn's opinion when he tells us that "The most meaningful savings come not from lower part prices but from availability and turnaround time. PMA parts shorten maintenance cycles by reducing dependency on OEM lead times, often cutting weeks off an engine's off-wing period. That faster access translates directly into higher aircraft utilisation, fewer lease penalties, and less disruption to flight schedules. For smaller and mid-size operators, those gains can outweigh material cost differences entirely. In our approach, we see PMA integration as a way to keep engines earning revenue instead of waiting on parts. By maintaining consistent supply and pairing PMA solutions with DER repairs when appropriate, we help customers avoid costly downtime and preserve planning stability. The result is a measurable improvement in operational efficiency, where time saved becomes the real economic advantage."

For Jelani Cain, looking beyond the obvious cost saving where price is concerned is imperative. As he details: "While it is more difficult to calculate the exact dollar amount, operators can estimate the cost avoidance savings of not having delays, AOGs or even cancelations due to lack of availability of OEM parts. This is where one of the real values of PMA comes into view. The cost of AOGs and cancelations quickly add up to more than the savings from most PMA parts. When OEMs struggle to support the aftermarket, having one, or multiple PMA options not only saves operations money, but also headaches from operational delays due to lack of part availability. PMAs usually offered a cheaper alternative to their OEM counterpart."

Beyond cost, what operational advantages (e.g., availability, lead times) do PMA parts offer?

To expand on what was pointed out above, we wanted to know more about any indirect benefits PMA parts offer beyond cost benefits. Unsurprisingly, all three contributors were very clear in their opinion with regard to providing a viable solution to supply chain problems connected with OEM parts. While Virgil D. Pizer refers us to the answer he provided for the previous question, which comprehensively answers this question simultaneously, Jeremy Hahn expands further. "The most urgent draw of PMA parts today is supply chain relief. Operators are dealing with disruptions severe enough to ground aircraft, and PMA has stepped into that gap with real effect. Cost savings remain a powerful secondary benefit but there is a third dimension that deserves more attention: the way PMA companies conduct business. Their genuine commitment to customer care stands in sharp contrast to the experience many operators have with suppliers who recognise they hold a captive market. That responsiveness and accountability matter. Ultimately, the operational advantages of PMA are only as broad as an operator's willingness to look beyond unit cost savings

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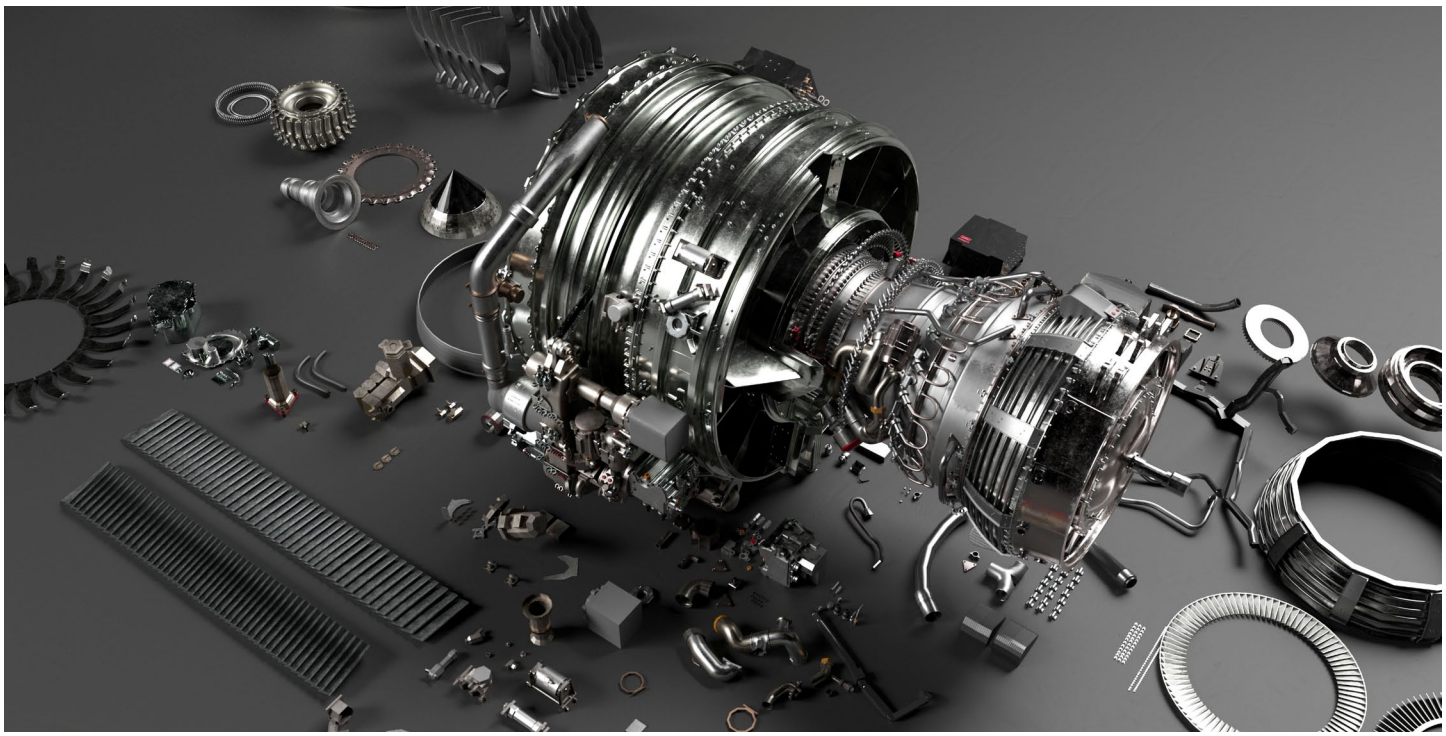

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and recognise the full scope of value that PMA parts provide," he says. This opinion is supported by comments on the issue from Jelani Cain, when he advises that: "Besides cost, PMA parts offer operators alternative options to OEM supply chain issues. Critical part shortages have a compounding effect on operations. When operators can't get parts for their inventory or refill it at the same rate they're using the component, they'll end up using all their stock. Once that occurs and an operator needs that part again to clear a deferral or fulfil an AOG, the ability to obtain the part in a timely manner is critical in keeping operation going. Operators can turn to PMAs to keep their aircraft airworthy and their operation going."

What are the main barriers preventing wider adoption of PMA parts?

Would it surprise you that OEMs haven't exactly welcomed the introduction of PMA parts? However, is this the only challenge faced by PMA parts, or are there less-obvious disadvantages and drawbacks? At Werner Aero LLC, Jelani Cain is very succinct in his reply. "Many OEMs have policies that protect their market share in the aftermarket by putting pressure on operators against using PMA parts in their products. One example is when OEMs void warranty of a unit if a PMA was used in it. Another example is when OEM engine shops rejecting engines that have had PMA parts installed in them," he says. Meanwhile, Jeremy Hahn at Jet Parts Engineering looks at the situation from a different angle as he feels that: "The single greatest barrier to wider PMA adoption is operator conservatism, but that position is proving increasingly hard to defend. Operators who have yet to embrace PMA are finding themselves at a measurable disadvantage relative to peers who are capturing significant cost and operational benefits. That gap is hard to ignore, and the hesitation that once characterised the industry is steadily eroding. Looking ahead, critical parts and leased aircraft represent the final frontiers for PMA acceptance, but even those boundaries are beginning to soften as operators grow more sophisticated in how they evaluate risk and aggressively seek to maximise their value propositions.".

Virgil D. Pizer at PEM-AIR identifies the problem of perception and details how he looks to challenge asset conformity. He explains further: "Despite proven reliability, PMA adoption still faces perception and procedural barriers. The biggest hurdle remains asset conformity; lessors and financial institutions often prefer OEM-only configurations to simplify remarketing and residual value assessments. In parallel, some operators hesitate due to internal approval processes and legacy maintenance programmes that were built around OEM documentation. These factors slow integration even when technical and economic benefits are clear." He then adds that the company "... focuses on the challenge of education and transparency. By demonstrating traceability, performance data, and regulatory alignment, we help customers and lessors gain confidence in PMA use. As documentation standards and cross-fleet experience continue to mature, these barriers are steadily eroding - making PMA parts a practical, compliant, and increasingly accepted component of modern turbofan maintenance."

How do airlines and MROs typically evaluate whether to use a PMA part or stick with OEM?

Unsurprisingly, there is no single element that has to be taken into consideration, but more a case of balancing the pros and cons of several options. Virgil D. Pizer sums up the situation well as he explains: "Most airlines and MROs weigh the decision through a mix of technical validation, economic impact, and asset strategy. They look at part cruciality, fleet age, and remaining engine life, balancing reliability data, warranty implications, and long-term maintenance planning. For many, the choice hinges on how a PMA solution fits within their approved maintenance programme and whether it supports turnaround goals without compromising conformity or resale flexibility. While that decision ultimately belongs to the customer, we see our role at Pem-Air to act as a trusted advisor, presenting clear data on performance, traceability, and lifecycle

economics so the operator can make an informed choice. We keep the customer's best interest front and centre, whether that means recommending OEM, PMA, or a blended approach that includes DER repairs to achieve the most efficient and compliant outcome."

Jeremy Hahn is more focused on the role played by OEMs when it comes to the adoption of PMA parts. He tells us that "OEM conduct is most often what initiates PMA consideration in the first place and from there, airlines and MROs typically weigh overall OEM performance history and part criticality when evaluating a formal switch. PMA exists largely as a market response to inadequate OEM support: chronic pricing pressure, extended lead times, limited responsiveness to operator concerns, and even problematic parts have collectively created the conditions in which PMA thrives. PMA providers have deliberately positioned themselves as the solution providers to these issues, offering dramatically reduced lead times, collaborative supplier relationships, meaningful cost savings, and refined engineering. As operators experience those benefits first hand and stack them against the frustrations of entrenched vendor relationships, many are now actively pursuing PMA solutions across nearly their entire parts catalogues." Jelani Cain certainly feels there is more than one key influencing factor, and details three of them for us. He begins by pointing out that: "Reliability is one of the first things that come to mind when thinking about using a PMA. While all real PMAs have gone through an extensive certification process to prove their airworthiness, some operators still would ask for additional reliability data to ensure the unit is up to par, or better than its OEM counterpart. Availability and cost also play a big factor. If an operator has access to an OEM part where its cost is similar to its PMA alternative, and there is no reliability improvement, there would be no need to switch."

How do aircraft lessors view the use of PMA parts on leased assets?

Leases can vary from lessor to lessor, but it is not uncommon to find a lease that requires the lessor to only use OEM parts where MRO is concerned. This can create a situation at handover at the end of the lease where a lessor can accept a financial penalty or consider replacing all current PMA parts with OEM parts. Is it a case that the lease requires the returned aircraft to contain only OEM parts, but allows for the use of PMA parts in the interim? Would this allow for an MRO strategy where a PMA part is used owing to OEM supply chain delays in order to avoid a lengthy AOG, but that subsequently a USM OEM is acquired at a later date, either with a view to replacing the PMA part during the ongoing MRO strategy, or in preparation for end-of-lease handover? Jelani Cain is certainly wary about potential problems created in advance of an aircraft's return to the lessor. "Some operators might be hesitant to install PMA's on leased aircraft in order to comply with the lessor's contract because some leases are set up where the lessor will only accept the aircraft back if it has fully OEM parts installed. If an operator installs too many PMAs and the lease is up, the operator would need to replace certain PMA components with OEM. This can become expensive depending on what and how many parts are being replaced. PMA might also affect the resale value of a component, as some operators are still wary of accepting them. This can decrease the demand for units with PMAs in them, reducing their resale value," he suggests.

Jeremy Hahn is keen to explore a different approach and attitude that may well become 'the norm' in time. He explains: "Lessors are following a path of PMA acceptance that closely mirrors where operators were a couple of decades ago: they're currently resistant, but with growing curiosity. As that curiosity matures into a recognition that PMA can deliver a genuine competitive advantage over other lessors, adoption is likely to accelerate and, much like operators before them, not look back. The aerospace leasing market is simply too competitive for this opportunity to remain unexplored indefinitely. Lessors are beginning to understand that if operators — with far more direct exposure to these parts — have grown comfortable with PMA, there is little basis for their own hesitation. The sooner that realisation takes hold, the longer they will have to enjoy the advantage it brings."

To conclude, Virgil D. Pizer picks up on the advantages of PMA parts in relation to potential and unnecessary grounding of aircraft owing to a lack of OEM parts. He advises that: "Lessors have traditionally approached PMA use with caution, prioritising asset conformity and remarketing flexibility. However, that view is evolving, especially for mid to-late-life engines nearing their economic end of service. The conversation has shifted from theoretical asset value to real revenue impact, as OEM part lead times increasingly keep engines off wing and aircraft out of operation. Our teams at Pem-Air work closely with lessor customers to evaluate total lifecycle cost, weighing the marginal value of OEM exclusivity against the tangible losses of downtime. For engines expected to operate through their economic end of life, PMA integration often proves the more rational choice, preserving airworthiness, shortening turnaround times, and keeping assets generating revenue. The result is a balanced view of value: one that favours operational continuity over theoretical resale premium."

> ***"PMA exists largely as a market response to inadequate OEM support: chronic pricing pressure, extended lead times, limited responsiveness to operator concerns, and even problematic parts have collectively created the conditions in which PMA thrives."***
>
> *Jeremy Hahn, VP Engineering, Jet Parts Engineering*

Jeremy Hahn, VP Engineering, Jet Parts Engineering

Is AI Troubleshooting a Genuine Gamechanger for Aircraft Maintenance?

As we strive for ever more effective operating methods, will AI-assisted troubleshooting give us the edge the MRO sector needs to become not just more proactive but also more effective?

By David Dundas

There is no substitute for experience, and nowhere is that more applicable than on the shop floor of an aircraft hangar where a commercial jetliner is undergoing routine maintenance. That said, some of the necessary experience is in a different area to hands-on physical work and is becoming more focused on data analysis. The reason? To predict when a part is likely to fail or need replacing as operating methods transition from being predominantly reactive in years gone by, to being far more proactive today.

The greatest advantages of proactive MRO systems are fewer costly unplanned AOG incidents, and the implementation of more streamlined and cost-effective maintenance programmes. So how do we see Artificial Intelligence (AI) as becoming a potential gamechanger in the MRO sector when massive steps have already been taken to improve predictability through the extensive use of onboard sensors? Well, with so many technological solutions today, they tend to bring with them a new set of problems.

Predictive and proactive maintenance relies on data and trends. While sensors can generate massive amounts of data, that data still has to be analysed to give it value. The results of that analysis have to then be compared to previous results to identify trends, and in turn, those trends have to be interpreted to establish at what point action needs to be taken. This is all very well and good, and it has worked well for some time, but the downside has been the need to deal with the constant generation of more and more data as a sensor-driven digital monitoring system becomes the norm.

However, the use of AI can also help with fault troubleshooting, an area of MRO which is notorious for the cause of so many faults not being immediately recognisable. Rather than adopting a 'trial and error' approach, especially when trying to fix intermittent faults, AI troubleshooting has the potential to identify 'the most likely cause' based on a wealth of data related to previous similar problems. The savings on time alone could be very substantial at a time when operating costs are so critical.


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With the current trend to adopt and adapt AI to provide so many improvements in how businesses and systems function, data analysis has almost become its 'bread and butter' modus operandi. Thus, the arrival of AI to coincide with the deluge of sensor-generated data in aircraft would seem to be a potential marriage made in heaven.

Combined, AI and sensor-generated data have the potential to transform how we identify probable problem root causes, and improve our decision-making during troubleshooting activities. For airlines and MROs facing growing operational pressure, technician shortages, and increasing fleet complexity, AI-assisted troubleshooting could more than level the playing field.

Why Troubleshooting Is Becoming More Complex

Modern aircraft systems are interconnected in ways that were unimaginable only a generation ago. Aircraft such as the Airbus A350 and Boeing 787 Dreamliner rely heavily on integrated avionics, digital communication networks, and advanced software-controlled systems. While these technologies improve aircraft performance and efficiency, they also create new maintenance challenges.

A single fault can generate multiple warnings across different aircraft systems, making root cause identification difficult. Technicians frequently encounter intermittent faults that disappear before inspection or defects that cannot easily be replicated on the ground. In many cases, troubleshooting becomes a lengthy process involving repeated inspections, component replacements, and extensive system testing.

At the same time, maintenance organisations are under constant pressure to reduce aircraft downtime and improve turnaround times. Every additional hour spent troubleshooting affects operational schedules, maintenance costs, and fleet availability.

AI technologies are being developed specifically to address these challenges by helping technicians process and interpret complex maintenance data more efficiently.

What AI-Assisted Troubleshooting Means

AI-assisted troubleshooting uses machine learning algorithms and large datasets to support maintenance personnel during fault diagnosis. These systems analyse information from aircraft sensors, maintenance histories, flight operations data, and previous repair records to identify patterns that may not be immediately visible to human technicians.

Instead of relying solely on static troubleshooting manuals, AI systems can dynamically compare current aircraft behaviour with thousands of historical maintenance events. Based on these comparisons, the system can recommend probable root causes, suggest optimised troubleshooting procedures, and even predict which components are most likely responsible for a fault.

The technology essentially acts as an intelligent diagnostic assistant that continuously learns from operational experience.

This approach represents a significant shift from reactive troubleshooting toward data-driven maintenance intelligence.

From Predictive Maintenance to Intelligent Diagnostics

AI-assisted troubleshooting is closely related to predictive maintenance, although the two concepts serve slightly different purposes.

Predictive maintenance focuses primarily on identifying early signs of component degradation before failures occur. By monitoring trends in vibration data, temperatures, pressures, or performance parameters, predictive systems help operators schedule maintenance proactively and avoid


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unscheduled events.

AI-assisted troubleshooting, by contrast, becomes active once a fault or anomaly has already occurred. Its objective is to accelerate diagnosis, improve fault isolation accuracy, and reduce unnecessary maintenance actions.

In practice, the two technologies increasingly work together. A predictive system may identify abnormal engine vibration trends, while the troubleshooting system helps technicians determine the exact source of the problem and recommends the most effective corrective action.

Applications in Modern Aircraft Maintenance

One of the most important applications of AI-assisted troubleshooting is engine diagnostics. Modern engines generate enormous amounts of health monitoring data during every flight. AI systems can analyse subtle performance deviations and identify early signs of wear or degradation long before conventional warning thresholds are exceeded. This allows maintenance teams to address issues proactively, reducing the risk of unscheduled engine removals and aircraft-on-ground events.

Avionics troubleshooting is another area where AI offers significant advantages. Intermittent avionics faults are notoriously difficult to diagnose because they may only appear under specific operational or environmental conditions. AI systems can correlate flight phases, environmental data, historical defect records, and system interactions to identify probable root causes more effectively than traditional troubleshooting methods.

Digital maintenance assistants are also becoming increasingly common within MRO organisations. These AI-powered systems allow technicians to interact with maintenance documentation in a more intuitive way. Instead of manually searching through extensive technical manuals, technicians can query systems conversationally and receive targeted troubleshooting guidance based on historical maintenance knowledge and aircraft-specific data.

Operational Benefits for Airlines and MROs

The operational benefits of AI-assisted troubleshooting are substantial. Faster fault diagnosis directly reduces aircraft downtime, improving fleet utilisation and operational efficiency. Even small reductions in troubleshooting time can generate major savings across large fleets.

Improved diagnostic accuracy also reduces unnecessary component replacements. In traditional troubleshooting, uncertain diagnoses sometimes lead to multiple component swaps before the actual fault is identified. AI systems help narrow down probable causes more effectively, reducing inventory consumption and maintenance costs.

Another important benefit is knowledge retention. Many airlines and MRO providers face the challenge of losing experienced technicians through retirement. AI systems can help preserve valuable troubleshooting expertise by learning from historical maintenance actions and making that knowledge accessible to newer technicians.

The technology also improves

maintenance planning by helping organisations anticipate resource requirements, allocate labour more efficiently, and optimise spare parts positioning.

Challenges and Limitations

Despite its potential and as previously alluded to, AI-assisted troubleshooting also presents several challenges.

One of the biggest obstacles is data quality. AI systems depend heavily on accurate and consistent maintenance records. In reality, maintenance data often contains incomplete descriptions, inconsistent terminology, or human reporting errors. Poor-quality data can limit the effectiveness of AI algorithms and reduce trust in system recommendations.

Regulatory considerations also remain important. Aviation authorities require maintenance organisations to follow approved procedures and maintain clear accountability for airworthiness decisions. AI systems can support troubleshooting, but they cannot replace licensed personnel or approved maintenance processes.

Human acceptance is another critical factor. Technicians may initially hesitate to trust AI-generated recommendations, particularly if systems produce occasional inaccuracies. Successful implementation requires transparent system design, strong user training, and close involvement of maintenance personnel throughout deployment.

Cybersecurity is an additional concern as maintenance systems become more connected and data driven. Protecting maintenance data and aircraft health monitoring networks from unauthorised access or manipulation is becoming increasingly important in modern aviation operations.

The Continuing Role of Human Expertise

Although AI technologies are advancing rapidly, aircraft maintenance remains fundamentally dependent on human expertise. Technicians continue to play the central role in inspection, judgment, safety evaluation, and certification decisions.

AI systems can process data and identify patterns far more quickly than humans, but they lack practical experience, contextual understanding, and operational judgment. They cannot physically inspect aircraft structures, evaluate unusual conditions, or make final airworthiness decisions.

The future of aircraft maintenance is therefore unlikely to involve fully autonomous troubleshooting. Instead, the industry is moving toward collaborative intelligence, where technicians use AI tools to improve efficiency and decision-making while maintaining full responsibility for maintenance actions.

Looking Ahead

Over the next decade, AI-assisted troubleshooting is expected to become increasingly integrated into everyday maintenance operations. As aircraft systems become more complex and operational pressures continue to grow, maintenance organisations will need more advanced diagnostic capabilities to remain competitive.

Airlines and MRO providers that successfully integrate AI into their maintenance workflows may benefit from lower operational costs, faster turnaround times, improved reliability, and better fleet availability. However, technology alone will not determine success. Effective implementation will require high-quality data management, strong regulatory oversight, robust cybersecurity, and continued investment in technician training and development.

In conclusion, aircraft maintenance has always been about solving problems quickly, accurately, and safely. AI-assisted troubleshooting may soon become one of the industry's most valuable tools in achieving that goal.

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Maintenance Mythbusters: "Digital Maintenance Records Automatically Reduce Errors"

By David Dundas

Impeccable maintenance records are perhaps one of the most critical aspects of MRO operations. Not only are they an essential element of aircraft safety, but they are also a legal requirement. Beyond this, there are also the financial implications as any inaccurate or missing data can result in massive financial penalties, whether it is when returning an aircraft at the end of its lease, or when being sold, either for teardown or to another operator.

So, with the digitisation of aircraft record keeping, is it fair to say that there has been a noticeable reduction in the number of errors, or is this yet another area of technological advancement that is hampered by the adage: "Rubbish in, rubbish out" or "Garbage in, garbage out" (RIRO/GIGO), depending on which side of the Atlantic you live on? This is a principle which states that the quality of output is directly determined by the quality of input. In other words, if flawed, inaccurate, or low-quality data is entered into a system, the results produced will be equally flawed, regardless of how advanced that system or its equipment is.

Across the aviation industry, there is no question that digital transformation has become one of the most powerful trends shaping maintenance operations. Paper task cards are now being replaced by electronic work packages, maintenance records are moving into cloud-based systems, and MROs are investing heavily in digital tools to improve efficiency, traceability, and compliance. In theory, with this shift, a widely held belief has emerged: that the creation of digital maintenance records has automatically reduced the number of errors. The logic certainly is sound: If paperwork is eliminated and processes become electronic, mistakes should decrease. However, while digital systems offer major advantages, the assumption that technology can singlehandedly reduce the volume of record-keeping errors has become one of the most persistent misconceptions in modern aircraft maintenance.

Technology Changes Processes, Not Human Nature

Certainly, digital maintenance records can improve documentation, accessibility, and standardisation, but they do not eliminate the fundamental realities of working practices. Maintenance errors were never a direct consequence of the fact records were paper based. They occur because aviation maintenance, by its very nature, is complex, high-pressure work performed in dynamic environments. Fatigue, distractions, time constraints, and miscommunication remain just as prevalent in a 'digital environment' as they are in traditional ones. A technician can misinterpret an instruction on a screen just as easily as they can on a sheet of paper. Data can be entered incorrectly, steps can be skipped unintentionally, and assumptions can still influence decision-making. Digital systems do not remove the

simple fact that humans are not infallible.

New Systems Introduce New Error Pathways

While digital records can certainly help to reduce certain types of mistake, new systems are renowned for introducing new categories of risk. Electronic documentation relies heavily on effective software interfaces, system design, and user interaction. Poorly structured task card layouts, confusing navigation, or excessive drop-down selections can lead to incorrect entries or incomplete signoffs. Automation frequently creates a false sense of security, where users can become guilty of making the erroneous assumption that the new system will prevent mistakes without verifying the underlying work. In some cases, technicians may well end up spending more time managing the interface than focusing on the physical task at hand, particularly if systems are not optimised for real hangar conditions. Digitalisation does not necessarily remove complexity but instead frequently shifts complexity into new areas.

The Illusion of Accuracy Through Digital Data

One of the greatest misconceptions about electronic records is the assumption that digital information is inherently more accurate. A record stored electronically may look complete, but its quality still depends on the correctness of the input, or as touched on at the beginning of this article, RIRO or GIGO. If a maintenance action is signed off prematurely, if an inspection is recorded incorrectly, or if data is copied forward without proper verification, the system will preserve that error perfectly. Digital records can create an illusion of reliability because they appear clean and professional, yet they remain vulnerable to exactly the same procedural weaknesses that exist in paper systems. In aviation maintenance, traceability is only valuable when the recorded information is a 100%-accurate record of the actual tasks performed.

Integration Challenges and Data Overload

Modern aircraft maintenance environments often involve multiple digital platforms: maintenance management systems such as OEM documentation


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portals, electronic logbooks, inventory software, and health monitoring tools. When these systems are not fully integrated, technicians and planners may face problems such as fragmented information, duplicated entries, or conflicting records. The consequence? Instead of reducing errors, poor integration can increase workload and confusion, while the volume of digital data itself can become overwhelming. Fault messages, sensor reports, and automated alerts require interpretation and prioritisation. Without strong processes, critical information can be missed amid the digital noise.

Cybersecurity and Configuration Control as New Maintenance Concerns

There is another area of concern created by the digitisation of maintenance records and that is cybersecurity, something that was irrelevant where paper records are concerned. Cybersecurity, system access control, and software configuration management are now part of the airworthiness ecosystem where unauthorised changes, data corruption, or system outages can disrupt maintenance operations and compromise documentation integrity. Maintaining the reliability of digital records requires robust IT governance alongside traditional maintenance discipline.

Digital Tools Work Best When Combined With Strong Workplace Culture

The true value of digital maintenance records can be achieved when technology supports, rather than replaces, sound maintenance culture. Electronic systems improve audit trails, reduce the paperwork burden, and enhance operational visibility, but they are never going to be substitutes for training, procedural compliance, and human accountability. MROs that achieve the greatest benefit from digitalisation are going to be those that invest equally in human-factor awareness, user-centred system design, and continuous improvement. Without doubt, technology is always going to be most effective when it strengthens disciplined behaviour rather than encourages the assumption that discipline is no longer required.

In Conclusion: Digitalisation is a Tool, Not a Guarantee

The belief that digital maintenance records automatically reduce errors is an understandable but dangerous oversimplification. Certainly, paperless systems offer major advantages in terms of efficiency, traceability, and data accessibility, but for certain they do not eliminate human error. Aircraft maintenance remains a human-centred activity performed in complex operational environments, and today's digital systems have the downside of introducing new challenges alongside their benefits. Ultimately, digitalisation is not a safety solution by itself but instead is a powerful tool that should be paired with strong training, robust processes, and a culture of accountability. In aircraft maintenance, advancements in technology can reduce risk — but only when applied with the same discipline and professionalism that the aviation industry has always demanded.

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Jérémie Papin

Thales has appointed **Jérémie Papin** as Senior Executive Vice-President, Finance and Information Systems, effective from July 1, 2026. He will succeed **Pascal Bouchiat**, who is set to retire after serving in the role. Papin will join the Thales Executive Committee and report directly to Chairman and Chief Executive Patrice Caine. Papin joins from Nissan Motor Co., where he served as Chief Financial Officer and Executive Officer, overseeing finance, management control, mergers and acquisitions, tax, treasury, investor relations and information systems. He was also appointed to Nissan Americas' Management Committee in 2021, having previously held the position of CFO for the region since 2018. Before joining Nissan, Papin held a number of senior roles within Renault and the Renault-Nissan Alliance, focusing on business development, planning and strategy. He began his career in investment banking in 1999 as a financial analyst covering the European automotive sector at Deutsche Bank before moving to Lehman Brothers and Nomura.

Mark McConnell

AJW Group has appointed **Mark McConnell** as Business Development Manager for Europe, where he will work alongside **Alexander Paul** to strengthen the company's presence across the region. Bringing nearly 40 years of customer-facing experience and a strong engineering background, McConnell will support AJW's European growth strategy by developing customer relationships and expanding business opportunities across the continent. The appointment enhances AJW's ability to support European airlines and MRO providers with specialist expertise in aircraft component sourcing, supply chain solutions and long-term partnership development. McConnell also brings extensive commercial knowledge and an established industry network that will further strengthen the company's regional capabilities. AJW said the move reflects its continued commitment to delivering tailored support and strategic value to customers across the European aviation market.

Eoin Doherty

EirTrade Aviation has promoted **Eoin Doherty** to the role of Vice President – Pricing, where he will lead the company's highly analytical pricing team responsible for airframe and engine evaluations supporting the acquisition of a broad range of aviation assets. The detailed market intelligence and analysis produced by the team play a key role in maintaining EirTrade's competitive edge within the aviation asset trading sector. Widely regarded within the business as fair, driven and proactive, Doherty is described by his team as a logical thinker, strong problem solver and valued mentor. In his new role, Doherty will continue to be involved across multiple areas of EirTrade's operations, ensuring the pricing team remains closely aligned with current market values at both asset and component level. The insights generated by the team support senior stakeholders in making critical strategic and commercial decisions.

Lee Whitehurst

BeauTech Power Systems (BeauTech) has appointed **Lee Whitehurst** as Vice President of Acquisitions and Trading, strengthening the company's leadership team as it continues to expand its global engine leasing and trading operations. In his new role, Whitehurst will focus on identifying and executing aircraft and engine trading opportunities while working closely with BeauTech's existing partners and developing new relationships across the global aviation

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market. He will also support the continued growth of the company's asset portfolio, including its strategic expansion into the wide-body aircraft sector. Whitehurst joins BeauTech from GE Aerospace, where he most recently served as commercial director leading the company's global trading and leasing team. He brings more than 20 years of industry experience and extensive expertise across major engine platforms including the GE90, GEnx and CF6-80E1, further enhancing BeauTech's capabilities in the wide-body market. "We are very pleased to welcome Lee to BeauTech," said **Stefanie Jung**, SVP and Head of Global Acquisitions at BeauTech. "His extensive market experience, deep industry relationships and strong track record in trading and leasing will be highly valuable as we continue to strengthen and expand our platform."

Lorenzo Mariani

Leonardo has appointed **Lorenzo Mariani** as Chief Executive Officer and General Manager, effective from May 7, 2026. Mariani brings extensive leadership experience across the aerospace, defence and security sectors, with a strong international background and a track record of managing businesses across the full industrial lifecycle, from research and development through to production and commercialisation. Prior to his appointment, Mariani served as Executive Group Director Sales & Business Development at MBDA from April 2025, while also holding the position of Managing Director of MBDA Italia. As a member of MBDA's Executive Committee, he played a key role in strengthening the company's position within a rapidly changing global defence environment. His work focused particularly on enhancing production capacity, improving operational efficiency and increasing competitiveness in increasingly complex international markets. Mariani also has significant previous experience within Leonardo, where he held a number of senior leadership roles of increasing responsibility. He ultimately became Co-General Manager and Director of Business Operations, contributing to the management and development of the group's operational activities during a period of transformation and growth. His appointment comes at a time of heightened demand across the global defence sector, with companies facing increasing pressure to expand industrial capacity, strengthen supply chains and accelerate technological innovation. Mariani's combined experience in operations, strategy and international business development is expected to support Leonardo's continued growth across its aerospace, defence and security activities. Leonardo is one of Europe's largest defence and aerospace groups, with operations spanning military aircraft, electronics, helicopters, cyber security and space systems.

Scott Butler

Ascent Aviation Services (Ascent) has reported a senior leadership change, appointing **Scott Diaz** as Executive Vice President of Sales & Marketing while confirming the imminent departure of Chief Commercial Officer **Scott Butler**. Butler, who has held the CCO role for nearly eight years, is set to leave the business later this month. During his tenure, he was instrumental in shaping and executing Ascent's commercial strategy, helping to expand its global customer base and reinforce its standing within the aviation services sector. His leadership is widely credited with supporting sustained company growth and broadening the scope and quality of its service offerings. Taking on an expanded leadership remit, Scott Diaz steps into the role of Executive Vice President of Sales & Marketing shortly after joining the company. He brings significant industry experience and a proven ability to drive revenue growth, deepen customer relationships and enhance market engagement—capabilities seen as critical as Ascent continues to scale its commercial operations. The transition marks a notable shift in Ascent's executive structure, with a clear emphasis on continuity in commercial performance while positioning the organisation for its next phase of growth.

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