

# MRO

Aerospace Magazine



## New trends in surplus inventory management

### **FL Technics**

Big plans to  
expand capacity

### **Asia Pacific**

Strong demand  
returns to region

### **News In Brief**

MRO news from  
around the world

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## The changing faces of the aftermarket

**T**he conference season is upon us, and many industry colleagues are already gathering at various events around the world including Aero Engines in Madrid and of course MRO Europe in Amsterdam next month. Getting together gives us all a fantastic opportunity to catch up and discuss industry trends and opportunities as we continue to see significant recovery in all the global regions.

As the recovery continues, we are observing some changes in surplus inventory management. One of our experts in the US has noticed parts services now moving away from flight hour service agreements and more towards long-term lease, exchange, and purchase. Apparently, several operators realised that during a downturn, they would continually face minimums in their service agreements proving to be costly at the absolute wrong moment in time. An interesting viewpoint.

Others see persistent delays continuing to plague the supply chain, primarily attributed to extended lead times from OEMs for spare parts required for repairs. This dynamic has resulted in a remarkable trend for certain newly stocked materials that are rapidly depleted within a span of seven to 14 days. Our cover story this month provides an in-depth review of the situation.

In this issue, we also travel to the Asia-Pacific region to catch up with the recovery situation there. By all indications, demand for air travel is bouncing back strongly but cargo remains weak. Our colleagues at HAECO told us that the MRO workload in the wider Asian region is expected to increase significantly, necessitating capacity expansions to meet the rising demand. With the anticipated increase in lease returns and retirement of older aircraft types, as well as the phased introduction of newer aircraft types, there is a need for expanded capacity.

Despite strong order books, analysts have observed slightly subdued deliveries to the region this year due to ongoing supply chain issues.

**Peter Jorsssen**  
Publisher

Managing surplus inventory with precision is a balancing act.  
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DHL Global Forwarding



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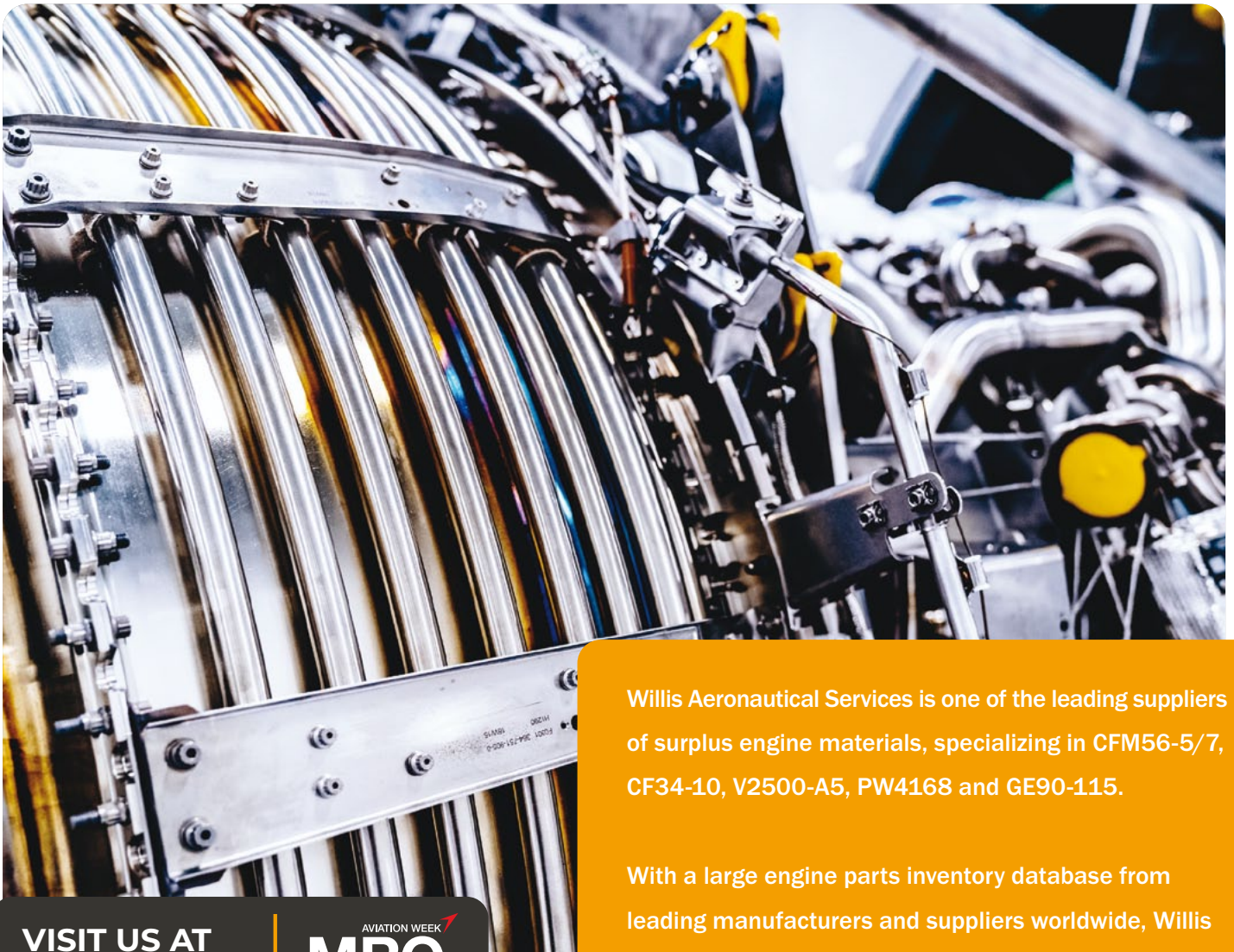




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## Airbus and Air France to create JV for worldwide A350 component maintenance services



Airbus and Air France to create JV for worldwide A350 component maintenance services

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It has been announced that Airbus SAS (Airbus) and Air France SA (Air France), the subsidiary of Air France-KLM, are to combine resources for the creation of a 50:50 joint venture. This JV is for the provision of component maintenance services (supply chain management, repairs, creation of a worldwide pool of aircraft components for the Airbus A350 long-range, wide-body twin-engine jet airliner. The collaboration will see the transfer of aircraft component assets belonging to both partners into the JV pool. It will also amalgamate the expertise of Air France Industries KLM Engineering & Maintenance and Airbus, to better meeting the growing long-term

maintenance requirements of the Airbus A350 worldwide fleet (over 1,000 aircraft on order and 550 aircraft presently in service worldwide) through enhanced capacity, an expanded global footprint, and the development of innovative solutions. The aim is for the joint venture to be up and running by the first half of 2024 in line with all compliance requirements and subject to approval from all relevant authorities. Anne Brachet, Executive Vice President Air France-KLM Engineering & Maintenance, declared: "This project aims to bring customers the best expertise of our two companies on a product as high-tech as the A350. We will be able to better

respond to the needs of the market, and to guarantee the satisfaction of our customers over the long term, with support solutions that are always responsive, of high quality and at the right price". Cristina Aguilar, Senior Vice President Customer Services at Airbus, added: "We're in the business of offering the very best service to our customers, and as the world's A350 fleet grows, so does the necessary support. Air France-KLM Engineering & Maintenance and Airbus have a long-standing relationship and pooling our complementary A350 component skills and capabilities will deliver an enhanced service."



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## Saab and Boeing sign 787 Dreamliner agreement



Saab and Boeing sign 787 Dreamliner agreement

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Saab has signed an extension agreement with Boeing for the manufacturing of large cargo doors, bulk cargo doors and access doors for the Boeing 787 Dreamliner. The framework agreement is an extension of an existing contract signed with Boeing in 2004 for the 787 Dreamliner programme. "With this contract extension we continue to be a proud partner to Boeing on the successful 787 programme, one of the world's best-selling wide-body aircraft. It strengthens our good and long relationship with Boeing and enhances the cooperation we have, both on commercial aero structures and the T-7A trainer on the defence side," says Lars Tossman, head of Saab's business area Aeronautics. Since the programme started, Saab has delivered in excess of 1,100 shipsets for the Boeing 787 Dreamliner programme. Saab has considerable experience in supplying major aerostructures for military as well as commercial aircraft programmes. Like many other major 787 structures, the doors will be mainly made of composite materials. A range of systems are built into the doors' composite structures, providing Boeing with lightweight doors that are easy to install.

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## MTU Maintenance opens new training centre at Zhuhai location

MTU Maintenance has officially opened its training centre at its Zhuhai location in China, on September 11. The central focus of the centre will be the training and education of new recruits in engine maintenance and professional training in disassembly, assembly and repair. It will have the capacity to train up to 100 participants a year. Upon completion, participants are then taken on to work in the shops at MTU Maintenance. "We are very proud to be opening our centre and expanding our existing training programme significantly with this dedicated area for trainers and trainees," Gert Wagner, President and CEO of MTU Maintenance Zhuhai, said: "It is of utmost importance to MTU to secure a steady influx of well-educated technical personnel and with this center, we are ensuring that for both our existing and new locations as we grow." MTU Maintenance Zhuhai is currently constructing a second engine disassembly and assembly facility in neighbouring Jinwan district. The new training centre will serve the needs of both sites. Housed in a brand-new three-story building at the present Zhuhai site, the facility's main floor has ten stations equipped with whole engines, engine modules and practice tables. On the second and third floors, trainees can make use of meeting rooms, an English language lab and study areas



© MTU Training Centre Zhuhai

to prepare for their technical examinations. MTU Maintenance Zhuhai, which specializes in MRO work for CFM International's LEAP-1A/1B and CFM56-5B/7 engines, as well as International Aero Engines' V2500-A5 and Pratt & Whitney's GTFM PW1100G-JM, has already set two milestones this year. This June, the company opened its second test cell at the Jinwan site, followed by the completion of its 4,000th shop visit in July.

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The background of the entire page is a photograph of a male technician in a red polo shirt, black cap, and safety glasses. He is focused on working on the complex machinery of an aircraft engine, specifically the compressor section. He is holding a flashlight in his right hand. The scene is set in a well-lit maintenance hangar with yellow overhead structures.

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## Air France-KLM and Etihad Airways expand partnership

Air France-KLM Group and Etihad Airways, the national airline of the United Arab Emirates have signed a Memorandum of Understanding (MoU) aiming at enhancing their collaboration across passenger operations, loyalty programmes, talent development, and maintenance. The signing ceremony took place at the Air France-KLM Group's headquarters in Paris, France in the presence of Angus Clarke, Chief Commercial Officer, Air France-KLM, and Arik De, Chief Revenue Officer, Etihad Airways. Through this partnership, and subject to any necessary regulatory approvals, Air France-KLM and Etihad contemplate expanding their codeshare and interline agreements initiated in 2012. As a first step, more than 40 new routes covering destinations across Europe, the Middle East, Asia Pacific and Australia have been made available for booking as of today, for travel as early as the winter 2023 season. The MoU also proposes the ability for frequent flyers of both Flying Blue and Etihad Guest to earn and redeem miles with Air France, KLM, and Etihad. The airlines will also explore terminal co-location, reciprocal lounge access and ground handling, among other initiatives. Etihad currently operates



Air France-KLM and Etihad Airways expand partnership

© Air France-KLM

daily flights to both Paris-Charles de Gaulle airport and Amsterdam Schiphol airport from Abu Dhabi international airport. Air France will start operating daily flights between Paris-Charles de Gaulle airport and Abu Dhabi International Airport from October 29, 2023. "This 11-year collaboration is now expanding even further, as we aim to explore opportunities in maintenance and loyalty, in addition to enhancing our route network for the benefit of our customers from all

around the world. The attractiveness of Abu Dhabi as a destination and a hub, powered by Etihad's large footprint spanning South and Southeast Asia, as well as Australia, brings significant richness to this partnership. This moment marks our shared commitment to providing seamless, premium, customer-centric travel experiences to our shared global customer base." commented Angus Clarke, Executive Vice President and Chief Commercial Officer, Air France-KLM.

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## SIA Engineering Company signs MOU with Xiamen Iport Group

SIA Engineering Company (SIAEC) and Xiamen Iport Group (IPOINT Group) have signed a legally non-binding Memorandum of Understanding (MOU) to explore Maintenance, Repair and Overhaul (MRO) opportunities in Fujian, China. IPOINT Group owns and operates airports in Xiamen, Fuzhou, Wuyishan and Longyan. The objective of the MOU is to establish a framework for both parties to work together and identify potential areas of collaboration. Leveraging SIAEC's comprehensive MRO service offerings, certifications and maintenance capabilities and IPOINT Group's extensive infrastructure and resources in Fujian, SIAEC and the IPOINT Group will evaluate various MRO collaboration opportunities under this MOU. As at the date of this announcement, no definitive or binding agreements have been entered into or reached by SIAEC in respect of the matters contemplated by the MOU, and there is no assurance or certainty that such agreements will be entered into or reached or that such matters will be proceeded with. The Company will make the necessary announcement(s) in relation to the potential collaboration as and when there are any material developments on the matter, including the signing of any definitive agreements. Xiamen Iport Group Co., Ltd, a modern state-owned enterprise, ranks among China's top 500 multinational enterprise groups. It is engaged in the business of services and investment holding of trans-national and diversified businesses, primarily in four sectors: aviation management, logistics and supply chain business, tourist hotels and the development and management of ports in economic zones.



SIA Engineering Company signs MOU with Xiamen Iport Group © SIA Engineering Company

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Eurowings Discover goes live with AMOS

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Following the successful implementation of AMOS at **Lufthansa** in 2022, **Lufthansa Group Technical Fleet Management** has launched a new project named **BlueFins**. With this new initiative, a new Business Group CAMO was created to enable Lufthansa Airlines Technical Fleet Management to streamline its organisational setup supported by the use of one unique IT solution, AMOS, that is already the leading CAMO and Part-145 software within the Lufthansa Group. With AMOS as the fundamental base of the LH's Technical Fleet Management business unit related processes as well as their IT infrastructure,

the **Eurowings** Discover fleet of 22 aircraft has recently been migrated into the existing AMOS centric eco system of Lufthansa Airlines. This brings the total fleet managed of both AOCs in AMOS to 325 aircraft. **Swiss-AS** as an industry leading M&E / MRO software provider offers an end-to-end integrated, highly intelligent software suite, designed to cover the management of the entire spectrum of maintenance activities. AMOS in combination with its mobile package empowers its large and loyal aviation customer base – ranging from pure operators of all sizes, over major low-cost, regional and flag carriers, and large airline groups to MRO providers – to digitalise and automate their maintenance processes and connect with other industry solutions beyond the boundaries of AMOS via the data messaging platform called Central.

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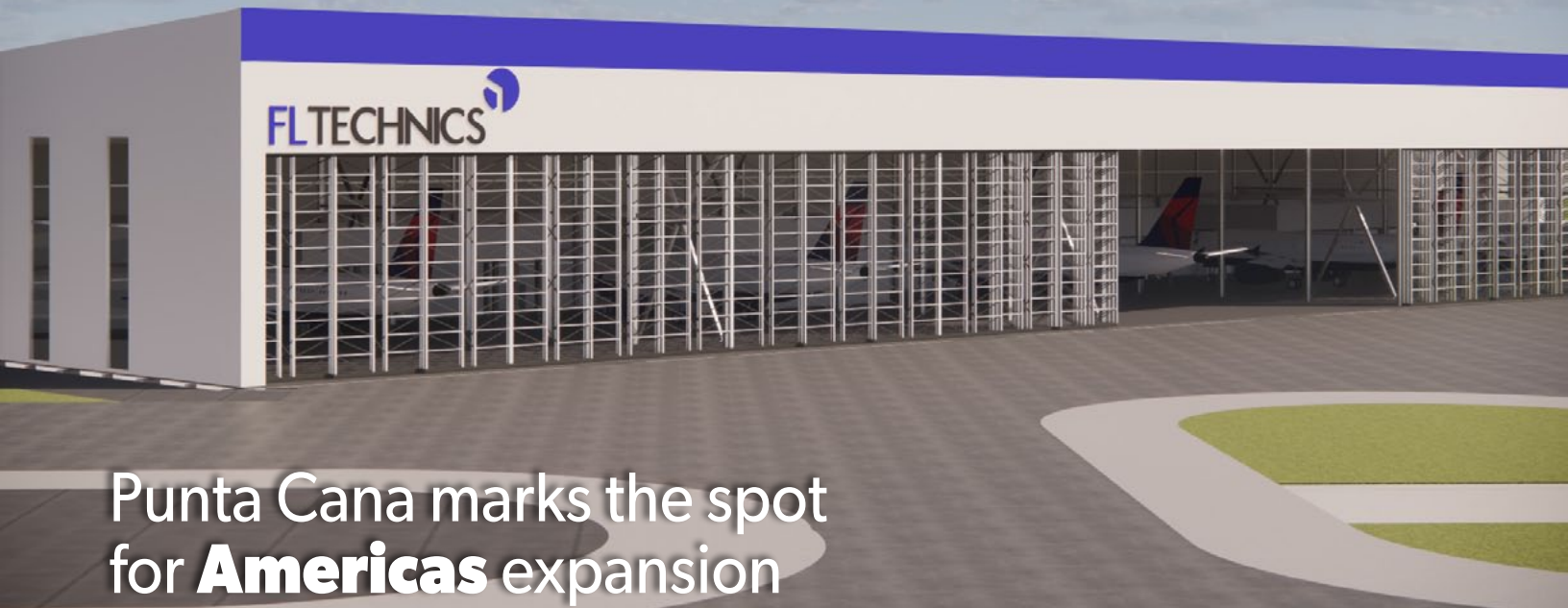


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## Punta Cana marks the spot for **Americas** expansion

FL Technics has set out big plans to expand its MRO capacity and build a new aircraft maintenance facility at Punta Cana International Airport (PUJ) in the Caribbean and it's seen as a steppingstone for future expansion into the Americas region.

By Keith Mwanalushi

According to details from FL Technics, the new facility will include five bays for base maintenance operations including a complex of fully-fledged supporting shops. The total area of the new infrastructure will be 52,000 sq. m and will take up to two years to build. It is the first physical base maintenance foothold in the region, following the existing FL Technics operations in the Americas, including a line maintenance network in Canada.

Zilvinas Lapinskas, CEO of FL Technics

tells *AviTrader MRO* that the decision to establish a facility in the Caribbean was strategic – “The airport is the second busiest in the Caribbean with feasible indications of a fast recovery in operations, traffic, and MRO services demand, reaching and surpassing the pre-COVID levels. The region itself is an optimal location with potential to grow into an MRO hub to service both North and South Americas.”

PUJ and the Punta Cana Free Trade Zone are in a strategic alliance with FL Technics to offer the MRO services at



Zilvinas Lapinskas, CEO of FL Technics

“We have a strong financial background, sharp vision for further development stages and global expertise in delivering such MRO projects. We are aiming to bring people and resources necessary to meet this demand for MRO services.”

*Zilvinas Lapinskas, FL Technics*



the airport which include scheduled inspections, component repairs, cabin modifications, and painting, essentially creating a one-stop shop location for operators.

Lapinskas highlights some potential partners (namely Grupo Puntacana) bringing expertise in the related industries and resources that will thrust the development of the project in a fast and efficient timeframe.

Post-pandemic, the industry has seen scarce shop capacity at MRO facilities in the Americas and Lapinskas points to this as a key criterion for selecting the location, which holds potential and a business case for future growth. "We have a strong financial background, sharp vision for further development stages and global expertise in delivering such MRO projects. We are aiming to bring people and resources necessary to meet this demand for MRO services. Even in the initial stage of the MRO hub operations with the five-bays facility, we are also looking at the extension of the capacity, with clear prospects to scale the business," he says.

Additionally, across the industry maintenance costs have risen due to supply chain disruptions and MROs and airlines around the world are having to change strategies to mitigate the

effects. FL Technics state they can provide competitive cross-continent base maintenance and related MRO solutions, citing successful business cases such as SAUDIA in the Middle East that brings its aircraft to Europe for seasonal base maintenance services. "Such competitive advantage consists of vast number of reasons and capabilities that would require additional overview," Lapinskas indicates.

However, FL Technics are looking at several strategies including LEAN-based operations and planning: global network of suppliers and partners to source assets, components, and other resources and staff competences. "It's a lot to unpack from an in-depth business case, but to sum it up – Punta Cana has a clear foundation to attract airlines and lessors from lacking and costly surrounding regions," he adds.

With technical skill shortages expected to drag on for a while yet, MROs are also having to reevaluate plans to ensure they have the right workforce (man hours) rate per day to manage heavy maintenance checks. FL Technics will be looking to tap into similar strategies at its other MRO hubs in other regions and apply those at the new facility. Lapinskas points to strategies that include unique planning and delivery methods, as well as FL Technics' own base system for managing

operations to ensure maximum efficiency with existing people and resources.

"Also, these strategies are supported by our expertise at home where we leverage our knowledge and expertise of people to support local and regional schools, universities and other organisations and boosting the development of new talent for the industry," Lapinskas comments.

FL Technics plan to bring experts as a foundation of such development, including but not limited to shaping technical training programmes, investing in scholarship and related projects, and providing platforms to gain theoretical and practical skills for people willing to join the industry.

Looking ahead, and with further investments across the Americas in mind, the Punta Cana project is expected to lead to an expansion with an additional seven bays in the second phase of construction increasing to 12 bays, adding crucial capacity for base maintenance slots in the region.

In addition to the new facility in Punta Cana, FL Technics owns base maintenance hangars at Vilnius and Kaunas International Airports in Lithuania, London Stansted and Glasgow Prestwick in the UK and Jakarta International Airport in Indonesia.



The MRO hangar facilities in Punta Cana will take two years to build.

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## Strong demand powers long term recovery in Asia Pacific region

There are several key trends emerging in the maintenance landscape in the region.  
© GAMECO

Despite the ongoing supply challenges, the MRO sector in the Asia Pacific regions is expected to gather pace significantly quickly as airlines continue to bring back capacity, strongly.

By Keith Mwanalushi

The Association of Asia Pacific Airlines (AAPA) has reported sustained solid recovery in passenger demand in the region with some 27.2 million international passengers carried by Asia Pacific airlines in July, a 146.6% increase compared to the same month last year. According to AAPA, demand averaged 81.4% of the corresponding month in 2019 but cargo markets remain soft. Other industry forecasts suggest the MRO segment will reach a value of U\$23.07bn from 2021 to 2028.

During the pandemic, the industry observed a trend in Asia moving towards

specific cost-oriented shop visits that included more repairs and more used parts.

Post-pandemic, HAECO are witnessing several key trends in the maintenance landscape. Firstly, mature fleets are seeking more cost-effective maintenance solutions, notes Caray Fang, Senior Vice President Group Commercial (Chinese Mainland). He says this entails evaluating the use of alternative repairs, such as used serviceable materials (USM) and parts with parts manufacturer approval (PMA), to identify potential cost savings in operations. "The advancement of maintenance tools and

data analytics enables more detailed analysis, facilitating smarter maintenance programmes. Additionally, newer fleets are being managed with predictive maintenance tools to optimise costs and increase reliability."

In the Chinese Mainland, airlines are currently recovering from the resumption of travel. However, Fang feels there are no significant changes in cost-saving shop visits for airframe services or engines and parts. He also observes that cabin retrofitting was generally not a common repair maintenance practice for Chinese Mainland airlines, except for some regional modifications. "The usage of USM remains a popular topic as it offers potential cost savings for engines. It's worth noting that the well-developed high-speed rail network in the Chinese Mainland continues to foster fierce competition among airlines," he comments.

According to HAECO, Chinese Mainland airlines have anticipated a surge in

“It is unusual to see MROs quoting even lower prices during bidding processes, whether for airframe services or components. This situation highlights the intense competition among MRO providers in the Chinese Mainland.”

*Caray Fang, HAECO*

“Some Asian countries, like China for example, are trying to ease some of their restrictions on the type of certifications they will accept, so they can get parts from western suppliers.”

*Mike Cazaz, Werner Aero*

maintenance costs due to the significant post-pandemic demand. Fang adds: “However, it is unusual to see MROs quoting even lower prices during bidding processes, whether for airframe services or components. This situation highlights the intense competition among MRO providers in the Chinese Mainland.”

In Asia, airlines and MRO providers are working closer to optimise costs without compromising safety and quality, observes Markus Yee, Managing Director, Asia-Pacific at Kellstrom Aerospace. He says this involves exploring cost-effective repair solutions, better resource utilisation, and streamlining maintenance processes. “While cost-oriented practices were prominent during the pandemic, airlines are now focusing on striking a balance between cost efficiency and sustainability. This involves optimising maintenance practices to reduce operational costs while also considering environmental impacts.”

The MRO industry is also facing a shortage of skilled technicians and



Markus Yee, Managing Director, Asia-Pacific at Kellstrom Aerospace

engineers, and MRO providers are investing in training programmes and partnerships with educational institutions to develop a pipeline of qualified professionals, Yee notes. “Through the pandemic, vulnerabilities in global supply chains have also been exposed. As such, a lot of the airlines and MRO providers are now diversifying their supplier base, expanding cooperation with the supplier base and OEM, and exploring innovative inventory management strategies to ensure a more resilient supply chain that can withstand disruptions,” he adds.

Overall, as Yee states, the post-pandemic aviation landscape has been characterised by a blend of technological advancement, enhanced safety measures, sustainable practices, and a shift towards proactive and data-driven maintenance strategies.

Kellstrom Aerospace's expertise in distributing factory new and used surplus aircraft parts aligns with the trend towards more cost-effective MRO practices. Yee feels that offering serviceable parts can help MRO providers manage costs while maintaining quality. “Through our OEM distribution network, we also collaborate closely with MRO providers, OEM partners, and airlines to develop innovative approaches that align with the evolving trends and industry requirements,” he says.

Mike Cazaz, Chief Executive at Werner Aero feels in many cases shop visits were avoided by airlines in Asia due to market closures, for a long period of time. “We are now seeing high demand for spare parts as they are still trying to put aircraft back into service and from long term storage. In addition to that, the global supply chain problem our industry is facing makes things even more difficult.”

As Cazaz observes, most of the tier two and three suppliers are in some Asian countries, and they are significantly behind



Mike Cazaz, CEO at Werner Aero Services

the curve which inflates the problem even further, he suggests. “Some Asian countries, like China for example, are trying to ease some of their restrictions on the type of certifications they will accept, so they can get parts from western suppliers. Some simple items such as pitot probes, oxygen face masks and passenger masks, lavatory equipment, oxygen bottles and batteries are in huge demand. There is a rush to get their unserviceable materials repaired but the supply-chain problems put a major toll on TAT.”

### Managing supply challenges and higher costs

Given the economic and industrial situation the aviation sector is currently facing, notably in terms of supply chain delays, repairs and the use of USM are key levers to mitigate the impact, according to Derk Nieuwenhuijze, AFI KLM E&M VP Strategy, Marketing and Communication. For example, he says AFI KLM E&M is actively working with OEMs to develop and certify repairs for engines and components – “This helps lower pressure on rising cost as well as providing more flexibility to manage the supply chain. Concurrently, we see a lot of airlines who want to quickly ramp up operations and many new aircraft are entering the fleets. That means that on certain platforms and in specific regions demand is currently outstripping supply,



putting further pressure on prices.”

There is significant pressure on global production and supply chains for new parts. At AFI KLM E&M, they try to deploy a mix of different solutions. Due to its dual role as both an operator and an MRO, Nieuwenhuijze says this helps the company identify solutions that work best as well as develop certain capabilities that are unique to those situations. He gives another example, indicating that AFI KLM E&M extensively uses predictive maintenance to better forecast when certain parts are needed, optimise the stock levels and avoid AOGs, which is greatly helping the operators they support, including their own fleet – “Furthermore, we continuously optimise the mix of repairs, USM and new parts that create solutions that work for the needs of each operator.”

The global supply chain causes major delays in getting parts and engines repaired and brought back into service. Consequently, Werner Aero are seeing some aircraft that are still grounded while waiting for supply. “On the engine side, we are seeing some new generation engines having some major problems. To rectify some of these problems, replacement parts are required, which again are being delayed due to the supply chain issue. That is causing some older aircraft to stay in service longer than anticipated while some of the new generation aircraft are grounded,” Cazaz tells.

In response, Werner Aero are investing capital in parts, APUs

and gears to get them certified and ready to go, in order to support the airlines in this region. “We hold a large inventory in stock of ready to go items and make visits to our customers in the region to try and work with them on finding creative solutions to these short-term problems,” he says.

Meanwhile, at Kellstrom Aerospace, they understand that mitigating the challenges caused by supply chain disruptions in the Asia region requires a combination of proactive strategies that enhance resilience, flexibility, and adaptability. Yee explains: “We are utilising data-driven inventory management systems to optimise stock levels while minimising excess. This enables us to monitor supply chain performance, forecast demand, and identify potential disruptions early. Also, by establishing strong partnerships with our key suppliers and partners, we collaborate to navigate challenges, explore innovative solutions and problem-solving approaches together.”

Globally, supply chain disruptions and increased demand have led to higher prices for aviation components and spare parts. MRO providers are faced with sourcing components at elevated costs, which can significantly impact their operational expenses, Yee highlights. He explains that as component prices rise, the overall cost of repairs and maintenance activities also increases, impacting their margin. “Higher costs can also slow down the recovery of the aviation industry post-pandemic. Airlines

might be reluctant to undergo necessary repairs and maintenance due to financial constraints, potentially impacting safety, and operational efficiency.”

To mitigate the impact of rising costs, Yee advises that MRO providers in Asia should be, or are exploring strategies such as improving supply chain variations, diversifying suppliers, negotiating long-term agreements, optimising inventory management, and embracing digital solutions to enhance operational efficiency. He says the goal is to strike a balance between managing costs while ensuring high-quality maintenance and repair services for aircraft operators.

Lars Moeslein, the recently appointed Senior Vice President of Group Commercial for Asia Pacific Region at HAECO reckons the MRO workload in the wider Asian region is expected to increase significantly, necessitating capacity expansions to meet the rising demand. “With the anticipated increase in lease returns and retirement of older aircraft types, as well as the phased introduction of newer aircraft types, there is a need for expanded capacity.”

While newer aircraft types, engines, and components are expected to demonstrate reliability during operations, Moeslein feels it is important to acknowledge that modification programmes may be required along the way, further emphasising the need for capacity – “It is crucial not only to increase capacity but also to secure a skilled workforce to support the increased workload,” he concludes.



Chinese airlines have anticipated a surge in maintenance costs.  
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“The entire world is facing shortage of parts and LRUs, the OEMs have not been capable of sustaining the rate of manufacture to match demand.”

*Armando Filho, VALLAIR*

## Evolving landscape sparks changes to **inventory** management

There is huge appetite for components while facing significant changes in part services.

© AAR

With the backdrop of supply chain disruptions in the aftermarket, MROs and parts suppliers are having to rethink their strategies for managing surplus inventory.

By Keith Mwanalushi

The post-pandemic recovery is now in full swing and there is a huge appetite for aircraft parts, however, the industry is facing significant changes in part services. “The entire world is facing shortage of parts and line replaceable units [LRUs], the OEMs have not been capable of sustaining the rate of manufacture to match demand,” indicates Armando Filho, Director of Material Management at VALLAIR.

Filho reckons it will take a few years for this situation to recover and as a contingency plan, many operators and MROs are looking for used serviceable material (USM) and green time parts to replace critical LRUs until stock levels have recovered - “normally, major shortages are related to engine parts,



Armando Filho, Material Management Director at Vallair

and critical components like APUs, nacelles, landing gear, wheels and brakes and the like.”

VALLAIR has been working with consumables on consignment, however their recent aircraft teardowns have enabled the company to power-up on parts fast. “This is primarily due to efficient management of repairs and ensuring that exchange units are aligned with the historical consumption for each type of aircraft. However, this varies a great deal because each customer has been flying under different circumstances, so we need to be flexible and always search for alternative solutions as they are needed,” he tells.

VALLAIR is focused on acquiring aircraft for airframe teardown,



The industry is steering towards maintaining comprehensive stock levels.

© JSSI Parts & Leasing

segregating all parts and identifying LRUs for which they have demand or historical usage and sales data as a guide. "Basically, we are generating surplus material from our own activities and external sales from any of our commercial aircraft teardowns," Filho states.

At Magellan Aviation Group, they see the landscape continuously evolving with distinct challenges and opportunities. "The significant workforce shortage in MRO facilities coupled with airlines' strategic decisions to cannibalise parts instead of incurring costs for replacements or repairs during the pandemic have given rise to complex supply chain challenges, primarily a bottleneck in parts services from repair vendors," says Richard O'Grady VP, Trading and Asset Management.

With air travel resuming and airlines swiftly reestablishing their schedules, Magellan have noticed a robust appetite for single-aisle narrowbody aircraft parts and their respective engines (-5B, -7B,

and V2500). Most notably, the demand for B737NG material is at an all-time high.

O'Grady observes that one of the more notable shifts caused by the pandemic has been the turnaround in

favourability of certain freighter aircraft and their engines. As such, when demand for airfreight surged, the B777F emerged as a reliable option powered by the GE90. "This shift in the market caught the attention of Magellan early on, fuelling our interest and recent acquisitions of two GE90-115B engines."

Magellan's move into the GE90 market will explore opportunities brought about by changing circumstances. "It serves as a reminder that having an agile inventory management plan allows for unexpected changes to drive growth in surprising directions," O'Grady adds.

During the recovery phase, airlines have been intensifying their efforts towards aircraft maintenance and upgrades, says Aaron Shellie, Vice President Sales at Setna UK. "These efforts are aimed at swiftly reintegrating their fleet into service while amplifying overall capabilities." However, Shellie feels persistent delays continue to plague the supply chain, primarily attributed to extended lead times from OEMs for spare



Aaron Shellie, Vice President of Sales Setna UK





Mark Elliot, Director of Inventory Strategy at AJW Group

parts required for repairs. "This dynamic has resulted in a remarkable trend; we see that certain newly stocked materials are rapidly depleted within a span of seven to 14 days."

In addition to managing routine operations, Shellie sees a noticeable surge in demand for essential components pertaining to avionics, engines, and landing gears emerging. He says this underscores the aviation industry's heightened reliance on these critical elements.

Over the past two years, Setna iO have strategically acquired more than 40 commercial aircraft for teardown but despite these efforts, specific part scarcities persist, prompting their global sales team to diligently manage stock levels through collaborative market engagement.

The approach at Setna involves orchestrating seamless cooperation with vendors, necessitating vigilant oversight of Airworthiness Directives (ADs) and Service Bulletins (SBs). "Agility is the watchword, as vendors must promptly secure material for shelving post-SB issuance or rapidly engage with MROs to enhance material suitability. Our operational tempo is characterised

by same-day decision-making, a keen pace, and resolute efforts to sustain comprehensive inventory coverage," says Shellie.

As we steer towards the goal of maintaining comprehensive stock levels, the interplay between supply and demand occasionally results in gaps. "However, our commitment to nimble thinking and rapid decision-making remains unwavering. In this realm, the ability to swiftly analyse situations and arrive at informed judgments is the cornerstone of our operational efficacy," Shellie continues.

According to Mark Elliot, Director of Inventory Strategy at AJW Group, the current market circumstances are adding a slightly different aspect to the issue of changes in parts services. "There are the normal high removal parts that we see flying off the shelves in the summer season when flight hours are high. However, there are also components where demand clearly exceeds supply due to ongoing supply chain challenges, such as vacuum generators, landing lights, and engine control units."

Where this is the case, Elliot says there can be a tendency to protect stock holdings, so organisations will be willing to loan or exchange components, but less willing to sell them. "This trading balance is something AJW must consider to ensure we hold stock for our contracted customers. However, we try to predict these situations and maintain appropriate stock levels, to not constrain our trading activity, and ensure that we still have items available to sell as well as exchange or loan."

Elliot compares the current aviation market to the state of the UK economy where demand remains high, despite the cost-of-living crisis, but supply chain challenges are driving inflation in market prices for the most severely affected components. He adds: "As these challenges unwind, the market prices should return to a more normal equilibrium level with lower volatility. This will facilitate a smoother path for airlines and other aviation industry organisations to meet customer demands as the recovery continues."

AJW uses sophisticated statistical and



Demand exceeds supply on some components due to ongoing supply chain challenges.

© AJW Group

probability-driven internal inventory optimisation tools to manage its inventory. “We take a forward-looking, proactive strategic approach to ensure we invest in the right areas to support our forecast business growth. This forward focus minimises the need to react to changes in demand or supply. If there are market movements in these areas that require amendments to the variables in our tools, these can be adjusted quickly, and our agility allows us to action the revised modelling results rapidly,” Elliot explains.

Elliot advises to manage the shop servicing times rather than investing in additional stock. “You find the balance between where you’re willing and not willing to invest in stock and where you want to focus on the vendor relationship to get issues resolved.” Due to AJWs global stock availability, the company often holds units that can be harvested for piece parts to alleviate issues with vendor supply chains and allow repairs to proceed.

Additionally, Elliot feels the key element of inventory planning is to

predict a change in demand rather than having to react to it. “We have variables within our internal models that allow us to select categories where we would like to increase our stock holding. This helps facilitate business growth in those areas and to meet predicted and expected future increases in demand.”

Over the last three years, Jason Reed - President of Flight Solutions Group – a GA Telesis company- has observed some key trends – one of the key areas in parts services is the move away from flight hour service agreements and a move more towards long-term lease, exchange, and purchase. “Many operators realised that during a downturn, they would continually face minimums in their service agreements proving to be costly at the absolute wrong moment in time. Couple that scenario with a high interest rate environment as well as a delay in OEM parts deliveries, and you get a heavy shift upwards in airframe USM parts buying and exchanges.”

Due to this perfect storm, Reed reports that Flight Solutions Group are currently recognising the highest



Jason Reed, President, Flight Solutions Group

airframe sales to date. He says single aisle APU sales and leases are the highest that can be recalled also due to the enormous lift requirements being demanded within the industry. “Engine product sales are still on the upswing, but teardown management in those areas is supporting operators’ in-house utilisation of LLPs before going to the market. We anticipate that trend to end by next year when in-house teardowns slow heavily, assets hit the market again via teardowns, and MRO shops begin to have even fuller engine shop visits,” he anticipates.

At GA Telesis, they are utilising an ingenious digital process that tells them in real time what products are needed and when. Reed says by using their own algorithms, they can identify daily supply, demand shifts, and react quickly with the procurement and repair teams to ensure they have the right product at the right time and place. “Not to mention, because the industry faces a hurdle in operations, the open order book and age of aircraft create a simple formula for success in managing your procurement cycle. The cycle is quite repetitive in nature and easily forecastable,” Reed states.

Single-aisle demands have always



Predicting stock levels ensure that items are available.

© APOC Aviation



been the more significant requirement, as Reed observes but now, looking toward the future, he feels that demand is increasing even more. "It's a law of predictability and overall odds when looking at your airframe procurement, and single aisle has an overall greater chance of success."

On the engine side, the situation is even more straightforward, according to Reed, with hours and cycles being the key driver in the life of an engine. "The only change we have seen on that side is the longer life utilisation and rebuild process being much greater than initially predicted ten years ago. The growth of the e-commerce market has driven the cargo market and belly space utilisation to new heights, thus the need for more maintenance events per engine serial number."

At Horix Aerospace in Switzerland, they are currently doing good numbers on rotables, avionics, and turbine engine parts, as well as hard to find and obsolete components; that said, being a small player in the market, these relatively small numbers gives the company a clear indication that their acquisition strategy works fine for both crisis and recovery phases.

"We simply do not relax on good results," says Simone Intini, Components Trading Manager at Horix Aerospace. "Our dismantling programme demonstrated to be a winning solution for owners and operators in search of an economic opportunity to get more value from older platforms."

Under its Trust Consignment Programme, MROs and operators can let Horix manage their surplus stock. "Markets are continuously moving and so are we, searching or proposing dismantling or consignment opportunities. It is a sort of plan as you



Simone Intini, Components Trading Manager at Horix Aerospace

work approach, where our supply adapts to demand, seamlessly," says Intini.

Marco Taufer, Chief Commercial Officer at Horix Aerospace says the strategy is to think and act exactly in the opposite way to the just-in-time principle. "We try to fill our warehouses with as much material as possible. While selling materials is a fully automated process managed by our company operating system, buying or collecting materials under consignment is a process that involves effective marketing strategies and human interactions. The basic principle is that the more material we stock, the more linear the supply chain becomes," he explains.

Taufer gives a few reasons why consignment is having so much success

including the economical returns – "the large MROs serving airlines have finally realised that selling surplus material under a consignment makes about six times more money than selling their material in bulk through an auction.

"If a customer calls an MRO or an operator to ask for a spare parts quote, this is a task that takes a back seat to the main activity because the team has higher priorities. For a company that manages spare parts instead, then the priorities change, and an RFQ becomes the number one priority to be processed," Taufer adds.

Filho from VALLAIR stresses that companies with enough space and workforce to manage consignments alongside their day-to-day activities have minimal stocking costs. "For the consignee it could be helpful in the first instance in terms of cash flow because you just pay the consignor when the part is used or sold, however, unless the consumption of parts is high for the consignee it could end up being more costly than beneficial."

“ We try to fill our warehouses with as much material as possible. The basic principle is that the more material we stock, the more linear the supply chain becomes. ”

*Marco Taufer, Horix Aerospace*



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## »»»» → *on the move*



Richard Hough (right), will succeed Tom Barret (left) as the new President & CEO

© elfc

Engine Lease Finance Corporation (elfc), has announced the retirement of its President & CEO **Tom Barret**. Barret joined elfc shortly after its inception in 1990 and since then has been centrally involved in every transaction that the company has conducted, with more recent highlights being the 2011 acquisition of the Macquarie engine portfolio, the 2014 acquisition of elfc by Mitsubishi HC Capital Inc. and the 2017 acquisition of majority of (now 100%) in-house engine parts company, INAV. After 33 years of leadership and dedication to the company's success, Barret has fostered a culture of innovation, teamwork, and customer centricity that continues to define the company's values. Barret will be stepping down from his role on December 31, 2023. elfc's current Chief Operating Officer, **Richard Hough**, will succeed Barret as the new President

and CEO effective from the January 1, 2024. Hough is a 33-year veteran of the industry, having started his career as an apprentice aircraft maintenance engineer in 1990, before joining elfc in 1997 as Technical Services Manager for a 15-engine portfolio worth \$60m. Hough has been responsible for the development of elfc's technical asset management capabilities now managing a 350-engine portfolio worth in excess of US\$3bn (£2.4bn). He previously held the position of Chief Technical Officer from 2011 until his appointment as Chief Operating Officer in January 2022. With a proven track record of accomplishments and a deep understanding of elfc's culture and values, Hough is well equipped to lead the company into its next phase of growth and innovation. With Hough moving to the President and CEO position, **Darren Wormald**, elfc's Executive Vice President & General

Counsel has been appointed as the new Chief Operating Officer, effective from the January 1, 2024. Wormald has been a pivotal asset to elfc since he joined in 1999, has worked on the key industry-leading transactions executed by elfc, and has provided invaluable legal expertise and guidance during his tenure as Executive Vice President and General Counsel. Wormald also took a lead role in guiding the company through the COVID period, expertly managing workout solutions between elfc and its customers. Wormald is succeeded by Senior Vice President Legal, **Bruce Ross**, who takes up the role of Executive Vice President & General Counsel. Bruce joined elfc in 2010 as a lawyer and has over 15 years of experience in providing legal advice in the spare engine leasing and finance sector. Ross has worked in the London, Hong Kong, and Singapore offices providing transaction and general legal advice, including advising on several joint ventures and large-volume acquisitions. Ross will also take up his new role on the January 1, 2024. As one of the world's leading independent spare engine leasing companies, elfc remains steadfast in its dedication to excellence, expertise, and customer satisfaction, values that have been ingrained in the company's DNA by Tom Barret's leadership. The company looks forward to a promising future under the guidance of its new President & CEO, Richard Hough.

## »»»»» → *on the move*



West Star names Eric Valdes as Program Director for Embraer, accessories and NDT © West Jet

West Star Aviation has appointed **Eric Valdes** as the Program Director role responsible for Embraer, Accessories, and NDT at the company's East Alton, IL (ALN) facility. Valdes has over 30 years of aviation experience, with the past 16 years at WSA. He served in the U.S. Air Force as an AWACS crew chief at Tinker AFB. He received his A&P license at Southwestern Illinois College. Valdes was previously responsible for doubling revenue and work force within the ALN Gulfstream programme over the past ten years. "Eric's long tenure at West Star gives him the experience and relationships needed to grow and support the Embraer program to meet current and future customer needs," comments **Brian Bauwens**, General Manager, ALN.

Joramco, the MRO facility and engineering arm of Dubai Aerospace Enterprise (DAE), has named **Petra Lindemann** as the new Vice President of Supply Chain. With nearly two decades of experience, Lindemann is an aviation professional who brings a wealth of expertise to the table. Throughout



Joramco has appointed Petra Lindemann as Vice President of Supply Chain © Joramco

her career, Lindemann has held leadership roles. At Swiss International Air Lines in Zurich, she took the role of the Director and Head of Procurement Services and interior. Prior to that, she was the Head of Strategic Logistics and Strategic Procurement Improvement and analysis at SR Technics in Zurich. She already gained experience in the Middle East during a secondment to ADAT in Abu Dhabi. At Joramco, Lindemann will be leading the Supply Chain department to meet the growth plans aimed at providing customers with a more connected experience. Commenting on Lindemann's appointment, Chief Executive Officer, **Fraser Currie**, said, "As Joramco continues to solidify its presence as a global leader in aviation maintenance and engineering, the appointment of Petra Lindemann further confirms the company's dedication to have a talented and professional senior management team. Under Lindemann's leadership, our team will continue to excel in delivering excellence and innovation. We are particularly excited about the strategic growth plans ahead and look forward to the valuable contributions from Lindemann and the entire team."





# MRO MAGAZINE EDITORIAL CALENDAR

## January

Used serviceable engine material market overview

Effective aircraft transition management

## February

Challenges of the passenger to freighter conversion market

Component pooling market

## March

Managing APU maintenance

Heavy maintenance market in the Middle East

## April

MRO Americas highlights

New trends in MRO software solutions

## May

Cost effective spare engine solutions

MRO aftermarket hotspot Florida

## June

Keeping the cost of engine maintenance down

Overcoming supply chain challenges

## July

Preparation for the narrowbody maintenance season

Landing gears, wheels and brakes

## August

Farnborough Airshow review

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## September

Turning surplus inventory into cash

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Avionics repair

Rejected engine parts - repair or replacement

## December

MRO outlook 2025

Outsourcing of expendables and consumables inventories

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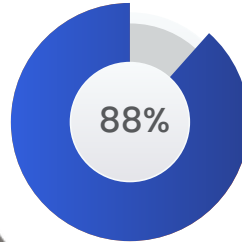
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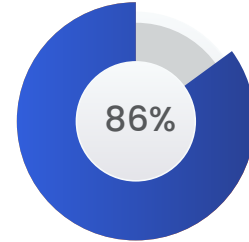
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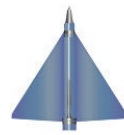
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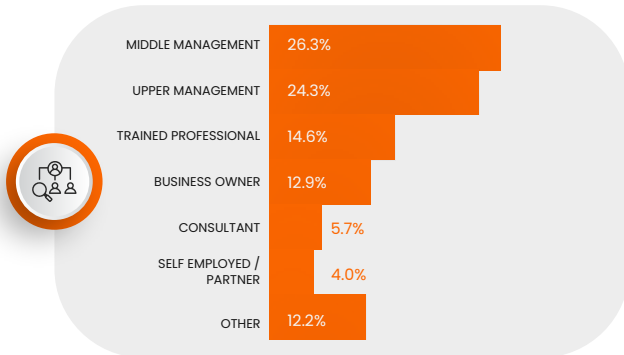


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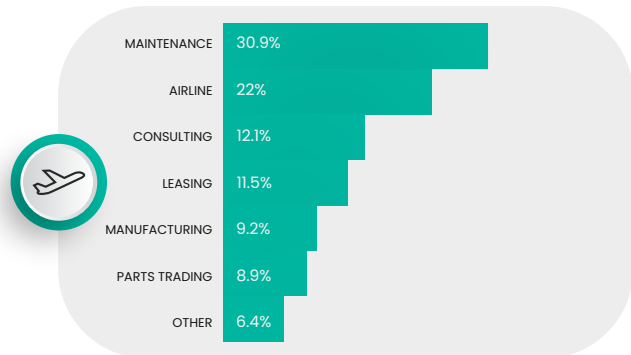


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