

MRO

Aerospace Magazine



**Support
Services For
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Pools and Exchanges

Are airlines seeking longer term part agreements?

MRO Supply Chain

Eliminating the pain points in the system

Industry Q&A

Risto Mäeots, CEO
Magnetic Group



Middle East MROs prepare for capacity ramp up

The focus over the last several weeks was on the recovery of the MRO sector in the Middle East region. Industry leaders once again converged on Dubai for another exciting installment of MRO Middle East where many of the topics affecting the region were discussed at length.

We saw some exciting announcements and deals come to the fore and of particular interest are the plans by MROs in the region to ramp up their capabilities and service offerings, demonstrating what seems to be huge demand in the market. DAE Engineering, the Amman-based MRO and majority owner Joramco are planning two new hangars at Queen Alia International Airport, a multi-line maintenance hangar and interestingly an OEM-partnered passenger-to-freighter conversion line, along with additional back shop capabilities and further expansion to the current 5-axis CNC machining centre.

The conversion line will be an interesting development. At the time of this writing, the OEM partnership was yet to be revealed but looking at the popular conversion lines currently out there, the narrowbody 737-800 and A321s could be a potential target and the A330 and B777 conversions on the widebodies.

Similarly, Etihad Engineering is making big bold moves with plans to build two new widebody hangars onsite to serve more aircraft at its existing facility. The plans at Etihad will include increasing capacity with a new hangar that will be large enough to add another A380 size aircraft to the current facility that already houses three A380s simultaneously. Another new hangar will be built with two bays. Abdul Khaliq Saeed, the Chief Executive Officer of Etihad Airways Engineering said the demand for MRO solutions is at an all-time high which is certainly a sign of glad tidings for the region.

The numbers are looking positive too for some carriers in the region with FlyDubai among the first operators to report results in the Middle East region. The airline reported a net profit of \$327m with its faster recovery pinned on its lesser dependence of transfer traffic to locked down markets in Asia.

Keith Mwanalushi
EDITOR



Joramco will perform nose to tail C checks and modifications on Emirates B777 aircraft.
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CONTENTS



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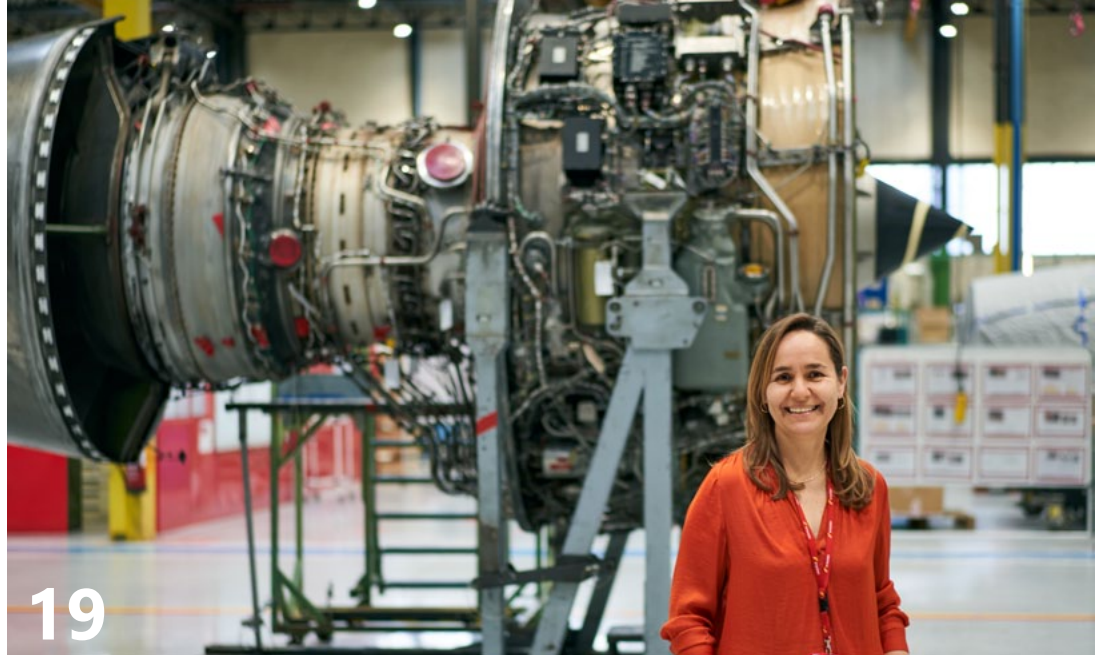
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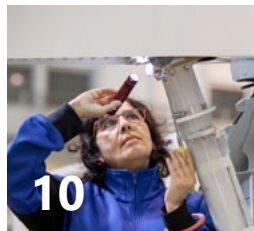


19

Ramping up planning and capacity for new engine propulsions



5



10



13



25

3 Editor's Page

5 News in Brief

10 News Analysis

Eliminating pain points in the supply chain

13 Exchanges and Pools in a Changing Market

Higher demand for pools and exchanges amid sluggish supply chain

19 Planning for New Engine Support Services

Ramping up planning and capacity for new engine propulsions

25 Industry Interview

Risto Mäeots – Chief Executive Officer, Magnetic Group

27 People on the Move

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Joramco marks successful participation at MRO Middle East 2023



Joramco at MRO Middle East

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Joramco, the Amman-based maintenance, repair, and overhaul (MRO) provider and the engineering arm of Dubai Aerospace Enterprise (DAE), has participated in an intensive two-day international exhibition at MRO Middle East 2023 in Dubai. At the exhibition, Joramco had a significant presence due to its strong brand dominance. It featured a two-story stand and extensive sponsorship throughout the event, affirming its presence. Joramco successfully led a positive experience at the event. The team met with current customers, prospective customers and business partners to discuss potential opportunities while exchanging valuable insights into the industry, as well as positioning the company as a global independent MRO. In addition, multiple maintenance agreements were announced with: Emirates, Spirit AeroSystems, Air Europa, and Cebu. Before the event, Jeff Wilkinson, Chief Executive Officer DAE Engineering, the Joramco majority shareholder, revealed the Amman-based MRO's plan for expansion, which included two wide-body hangars a maintenance hangar and a specialised wide-body paint hangar.

Lufthansa Technik signs A380 maintenance contract with Emirates and new collaboration contract with SAEI



Emirates Airbus A380 aircraft

© Emirates

Emirates and Lufthansa Technik have inked two major contracts regarding comprehensive maintenance, repair and overhaul services for Airbus A380 long-range aircraft, of which the Dubai-based airline is the world's largest operator. In line with one of the new agreements, Lufthansa Technik will overhaul main landing gears of Emirates' double-deck flagships. Additionally, the MRO company will provide the airline with highly flexible extra capacity for A380 base maintenance such as C-checks. The latter agreement marks the first ever outsourcing of heavy checks from Emirates' comprehensive in-house A380 MRO capacities to an external provider. The long-term landing gear services contract will be fulfilled by Lufthansa Technik Landing Gear Services. Over the next 13 years, the specialised workshop in the United Kingdom will overhaul main landing gear shipsets for some of Emirates' superjumbos and in the process restore them to "as-good-as-new" condition before delivering them back to the customer's MRO facilities for re-installation. The first of these landing gear overhauls is scheduled to begin in August.



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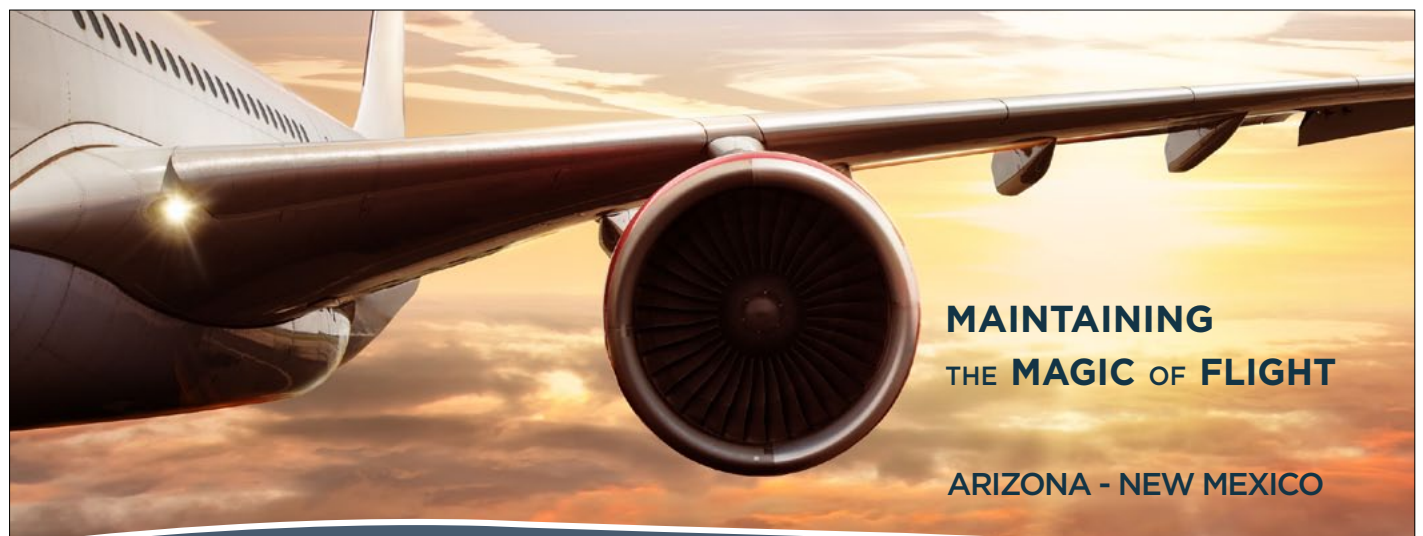
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On the occasion of the MRO Middle East 2023, **Saudia Aerospace Engineering Industries (SAEI)** and **Lufthansa Technik Middle East (LTME)** announced the recent signing of an agreement regarding a close cooperation in the field of aircraft component services. In line with the deal, Lufthansa Technik will over the next ten years provide its Total Component Support (TCS) to Saudia's Boeing 777 and 787 fleets. The TCS contract encompasses 39 Boeing 777s (35 777-300ER and four 777F) and 18 Boeing 787s (13 787-9 and five 787-10). For all these aircraft, SAEI gains 24/7 access to Lufthansa Technik's global components pool. For example, the TCS includes an AOG (Aircraft On Ground) support that guarantees shortest possible delivery for time-critical components. The agreement will significantly strengthen SAEI's technical operations and complement its own resources. Lufthansa Technik will also support SAEI in further enhancing their in-house component capabilities. Future fields of cooperation in both scope and functionality, especially in the area of digitalising MRO processes and the related supply chains, are already envisioned.



Ziad Al Hazmi (Chief Executive Officer, LTME, left) and Fahd Cynndy (Chief Executive Officer, SAEI) © Lufthansa Technik



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Etihad Engineering and Collins Aerospace to establish Nacelle Centre of Excellence



Collins Aerospace and Etihad Engineering plan to open a Nacelle Centre of Excellence in the UAE
© Etihad Engineering

Etihad Engineering and Collins Aerospace have announced plans to establish the Collins Nacelle Maintenance, Repair, and Overhaul (MRO) business at a site within Etihad Engineering's aviation maintenance centre of excellence located adjacent to Abu Dhabi International Airport. Etihad Engineering is one of the leading aircraft MRO services providers and a part of ADQ. The company's services include airframe maintenance, component repair, overhaul services and technical training. The establishment of the Nacelle Centre of Excellence

in Abu Dhabi will complement the company's existing aircraft maintenance solutions and provide airline customers with an enhanced offering for MRO services in the region and beyond. The Nacelle Centre of Excellence will employ a sophisticated global aftermarket team at the site and direct business activities within the MENA region while complying with U.S., European Union, and UAE regulations. Nacelles are the protective enclosure of an engine that control the airflow around and through an engine. The system itself is designed to achieve optimal weight, perform under high-engine operating temperatures, reduce noise and improve the lifespan of an aircraft's wheel and brake system through reversing the airflow thrust.

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C&L Aviation Group signs contract repair agreement with subsidiary of Héroux-Devtek

C&L Aviation Group has signed a contract repair agreement with APPH Ltd., a subsidiary of Héroux-Devtek to provide factory-authorised repair, overhaul, and warranty services on Héroux-Devtek products on the HS-125, Bae-125, BH-125, Hawker 800 and derivatives. Work will take place at C&L's 200,000 ft² MRO facility in Bangor, Maine. "We're thrilled to be able to offer this service for Héroux Devtek's distributors and customers," said Chris Kilgour, CEO of C&L Aviation Group. "This work complements our current in-house capabilities, making us a perfect fit to perform these repairs. We will also be able to provide lower shipping costs and faster turn times for US-based customers which will be a huge benefit to them." "We are pleased to continue building

upon our lasting and successful relationship with C&L, both striving at delivering the best customer support experience to operators and distributors," said Marc-Olivier Gagnon, V-P Product Support at Héroux-Devtek. C&L will provide testing, repair, and overhaul services with standardised turn-times to ensure customers receive their parts back promptly and on schedule. Product categories for the programme include accumulators, jacks, reversing valves, relief valves, hand pumps, selector valves, cut-out valves and pressure maintenance valves. Along with standard repairs, C&L will also be offering AOG repair services for customers which require them.



C&L Aviation Group approved as factory authorised repair facility for Héroux Devtek products
© C&L Aviation Group

 A large white cargo aircraft, a Saab 340B, is parked on an asphalt tarmac. The aircraft has "340B CARGO" written in large blue letters on its side. In the background, a large hangar with "CARGO CENTER" written on its side is visible under a clear blue sky.

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Etihad Airways Engineering joins hands with AMROS to offer transition Camo

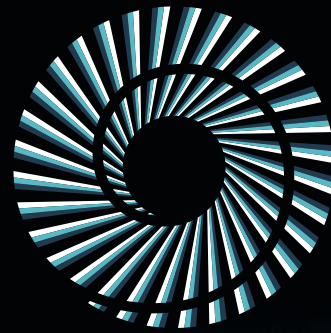


AMROS Global CEO Eros Tavani with Etihad Airways Engineering CEO Abdul Khaliq Saeed at MRO Middle East © Etihad Airways Engineering

Etihad Airways Engineering is entering into a collaboration with AMROS Group, a leading Swiss advisor to the worldwide aviation and aerospace industry, at MRO Middle East to offer transition Continuing Airworthiness Management Organisation (CAMO) services to its customers as a part of its comprehensive suite of aircraft maintenance and engineering solutions. "As a Fleet Technical Management service provider, it was only a logical step for us to expand into a collaboration with a Part-145 approved MRO. Our partnership with Etihad Airways Engineering is a perfect match to our "expect more" values, vision and our mission to provide only best-in-class services for our international airlines and lessor customers. With our joint forces, we look forward to providing an extra added value to our customers." said Eros Tavani, CEO of AMROS Global.

AMP Aero Services opens new office in Dubai

AMP Aero Services, headquartered in Miami, Florida, has opened its Dubai, United Arab Emirates office located in the "green" trade zone in Dubai South. Over the last two years, AMP Aero has seen significant growth and demand for material in the Middle East Region. Currently AMP Aero Services has offices in Miami, Kansas City, New Delhi India, Istanbul, and Hong-Kong. "The addition of the Dubai office was an easy decision. We have experienced heavy demand for material, and it made sense to position our team and material in the UAE." said Ambalik Agarwal, AMP Aero Services Managing Member. This location is strategically positioned to serve the Middle East Region and will distribute material with a full sales and support staff.



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Identifying supply chain challenges is the first step in eliminating them.
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Eliminating pain points in the **supply** chain

The MRO supply chain typically includes lengthy approval processes, complex supply networks, incomplete data, order backlogs, and inventory accuracy issues. As *AviTrader MRO* investigates, identifying the problem is the first step in finding solutions.

Delays in the supply chain for parts provision and repairs are now all too familiar. MROs, aftermarket specialists, repair stations and parts suppliers are all dealing with similar pain points through the chain.

Toma Matutyte, the Chief Executive at Locatory.com, part of the Avia Solutions Group, observes that one of the most common pain points in the MRO supply chain is the complexity of the supply network. "As components and materials become increasingly global, the complexity of the supply chain increases due to factors such as sourcing, pricing, lead time, and availability," she notes. "This leads to difficulty in tracking and managing the supply network, increasing risks for organisations, and creating additional barriers for effective MRO supply chain management."



Toma Matutyte, the Chief Executive at Locatory.com.
© Avia Solutions Group

According to Matutyte, incomplete data presents another issue in the MRO supply chain, as it can cause price fluctuations, inventory deficiencies, and operational inefficiencies. "Incomplete data can encompass outdated records, missing documents, inaccurate asset details, standard operating procedure errors, and prolonged order delays. Without precise and easily accessible data, operations are at risk of disruptions and excessive costs due to inaccurate or inefficient orders," she explains.

Experts at SkySelect say inaccurate information can cause massive lead times – "specifically, inaccurate and outdated catalogues are leading to long fill rates and reliability issues, disrupting the entire aviation supply chain," comments Tulika Dayal, Chief Customer Officer at SkySelect. She says in these digital times,

information and data are the lifeblood of any business. "While we are sitting on more information than ever before, that data often comes unstructured, incomplete and, or inaccurate."

On average, airlines are facing part delays of 60 to 90 days, currently. Even routine parts are experiencing significant delays leading to AOG and urgent situations. "Some airlines have told us as much as 40% of demand from the AOG team's come from routine parts that couldn't be delivered on time," Dayal reports.

Delays come with associated costs and by regularly monitoring and tracking these costs, airlines can identify areas for improvement and implement strategies to minimise the impact of delayed routine parts on their operations.

"The natural reaction to these long lead times and huge backlogs is for an airline to overstock parts and keep them on hand in the hangar. While this might be considered a means of hedging operational risk, in essence, all you are doing is trading one potential problem for another," Dayal reckons. She adds that the issue with overstocking parts is that the strategy requires a large upfront amount of capital spend, which is dangerous considering the razor-thin margins airlines are historically up against when running their operations.

Order backlogs can also become a significant concern for some organisations in the MRO supply chain as Matutyte highlights: "Order backlogs can be a result of factors such as overbooking, inadequate forecasting, inadequate capacity to meet demand, or



Tulika Dayal, Chief Customer Officer at SkySelect

poor order planning and execution, and can often lead to ordering and delivery delays. This, in turn, increases manufacturing downtime and the risk of fines or penalties for missed delivery commitments."

Matutyte also mentions that inventory accuracy problems can also hinder operations and organisations may face difficulties in effectively monitoring and managing their inventory due to errors in stocking, storing, and ordering components and materials, or due to a lack of accurate forecasting and planning for future needs – "This can result in overstocking or understocking, leading to financial waste and production downtime."

At SkySelect, they believe, Artificial Intelligence (AI) is the key to unlocking many of these supply chain quandaries. "AI ensures that routine parts are delivered on time and at a good price point by running advanced algorithms in the background," Dayal points out. In order to do this, she explains that the maximum amount of quotes are collected automatically, ensuring that all business requirements are met, including lead times, part conditions, locations, shipping costs, and any other parameters that must be considered. "This technology can help airlines and

maintenance organisations to monitor lead times and manage the flow of parts and components through the supply chain, and by using real-time data and analytics, they can identify and mitigate potential delays, and prioritise the delivery of critical components."

When issues that may cause delays arise, the AI is programmed to resource a number of resolutions, for instance, switching an order to urgent or resolving logistics complications.

"It's not just about making reactionary moves either," comments Dayal. "When coupling AI with appropriate data models, powerful forecasting features can be leveraged that enable airlines to see the trends of which parts are drying up in the market, or have longer lead times, and pre-stock the parts before the parts can impact the operations."

Within these models, SkySelect state a multitude of data points are ingested to build an accurate forecast, including historical consumption figures and current market metrics such as parts availability and costs. "This way, airlines can not only keep up with the market, but get and stay ahead of the game," Dayal states.

MRO supply chain management is critical for the effective operation of any organisation, as it involves the restocking of production materials, spare components, and consumables but yet challenges in such processes are unavoidable.

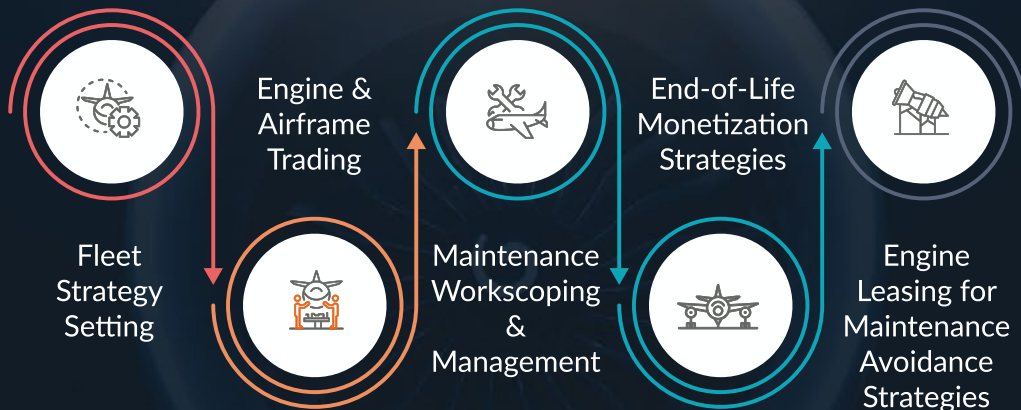
Matutyte, from Locotory.com concludes that by tackling these challenges and the crucial issues in the MRO supply chain, organisations can achieve a more streamlined and cost-effective supply chain. "With the proper implementation of organisational policies, enhanced communication, data accuracy, and the selection of appropriate spare component procurement methods, organisations can achieve enhanced operational flexibility, while decreasing costs and boosting customer satisfaction."

“Without precise and easily accessible data, operations are at risk of disruptions and excessive costs due to inaccurate or inefficient orders.”

Toma Matutyte, Locotory.com

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Airlines are more willing to have longer-term pooling and exchange agreements.
© Ascent Aviation

Higher demand for **pools** and exchanges amid sluggish supply chain

As airlines resume services to full capacity, they are looking closely at pooling and exchange agreements seeking the best possible options for spare parts availability.

By Keith Mwanalushi

As general load factors and airline capacity normalise, the necessity to secure a constant flow of parts is imperative. "Most airlines and operators are constantly seeking ways to optimise their fleets and inventories to reduce costs," suggests Jorge A. Irribarra, Managing Director, Engine Product Lines at Kellstrom Aerospace. He says with an urge to restore revenue streams as quickly as possible; many have targeted

accelerated recovery plans for 2023-2024, along with the unstable economic factors. "We are seeing the willingness for them to agree to longer-term parts supply agreements including exchanges, consignment agreements and pooling to solidify their projected growth."

Kellstrom Aerospace offers a wide variety of inventory consignment programmes specifically designed to alleviate inventory constraints for airlines,

“As the situation is slightly improving, we cannot disregard the fact that the pandemic severely disrupted the supply chain networks, causing a lack of availability on some parts and extreme delays for others.”

Jorge A. Irribarra, Kellstrom Aerospace



Jorge A. Irribarra, Managing Director,
Engine Product Lines at Kellstrom Aerospace

operators, and MROs along with Vortex Aviation and The Aircraft Group.

Iribarra reckons supply chain constraints have played a fundamental part limiting the availability of parts in pooling, exchanges, and consignment programmes. "As the situation is slightly improving, we cannot disregard the fact that the pandemic severely disrupted the supply chain networks, causing a lack of availability on some parts and extreme delays for others. These shortages of parts directly affect the quality and integrity of the inventory available for airlines and operators increasing their cost of operation by having longer than expected aircraft downtimes, as well as, paying premiums for parts to expedite their delivery," Iribarra analyses.

Kellstrom Aerospace are constantly assessing the parts market to repair and stock parts in key global locations for faster deployment and delivery. Iribarra said: "We partner with industry leaders in supply chain and logistics along with a Kellstrom team of specialised professionals at different Kellstrom locations emphasising a swift parts delivery process and support our customer's need," he says.

At Collins Aerospace, they observe that most operators that favour the responsiveness that pooling agreements



Cory May, Executive director Business Development, Aftermarket at Collins Aerospace.



The market has seen some long lead times at the component MROs.

Photo: Ascent Aviation

offer have continued to engage with that support through the capacity downturn, and in many cases that has proven to be beneficial in an environment where maintenance has been less predictable with fleet mix dynamics and unplanned maintenance events.

"As airlines bring back capacity, there is more focus on lowering operational cost that is predictable. Pooling and exchange agreements avoids large lumpy investments into initial provisioning or the unknown element of needing to buy spares to address industrial challenges," speaks Cory May, Executive Director Business development, Aftermarket at Collins Aerospace.

May says the availability of pools and exchanges has helped maintenance providers buffer many of the acute

impacts of short-term part shortages affecting MROs while minimising disruption to the operating fleet. "On the operator side, where stocking levels have been reduced for cash conservation, we have seen an increase in requests for exchanges while operators shore up provisioning levels. The significant pressure on supply chain does impact our ability to support the increased demand for pool and exchanges," he adds.

Scott Butler, Chief Commercial Officer at Ascent Aviation Services agrees that airlines are more willing to have longer-term pooling and exchange agreements in place. "Part of what is driving this is the long lead times at the component MROs. The reduced flying during Covid times decreased the overall capacity, and we are now trying to catch up."

“Pooling and exchange agreements avoids large lumpy investments into initial provisioning or the unknown element of needing to buy spares to address industrial challenges.”

Cory May, Collins Aerospace



Mark Shimizu, Vice President Sales at AerFin

challenges there is a general increase in repair turnaround times (TATs) across the board, driven mainly by man-power shortages and piece part and raw material production delays. He says this, in turn, is resulting in a longer OOST (Out of Service Time) for components for pool providers, meaning that pools are having to increase in volume to accommodate this and cover the extended OOST's.

"Inventory metrics and parameters are now monitored and adjusted with even more insight and diligence to ensure maximum availability, utilising not just reactive statistics but also industry insights and OEM updates to anticipate future challenges at a macro level," Punter states.

He reports that currently, the situation is very fluid, with new challenges every week to specific products, but with careful planning and proactive action AerFin have been able to stay ahead of most challenges to ensure their pool operators are not impacted by these global issues and their operation remains uninterrupted.



Mathew Punter, VP Repairs at AerFin

Carlos Garofalo's, Manager Asset Life Cycle Solutions, AMROS Group sees the significance for operators to seek more support and ways to secure access to spares during this critical phase of recovery, and to establish a long term

Given the supply chain challenges, Butler sees that pools are limited as there was not a lot of willingness during the pandemic to take on the high inventory costs. He says spare parts production was also brought to a minimum and the supplier ramp-up is unable to meet customer demands.

In general, AOG cases, Butler feels visibility is key, to both usage and supply. "If suppliers can get accurate usage

visibility, then they are more willing to stock certain items. Also, if suppliers are giving customers their inventory visibility on a regular basis, then operators can plan better and lessen the freight and AOG costs."

Mark Shimizu, Vice President Sales at AerFin also experiences that some operators are starting to request longer term agreements than previously. "Potentially in an attempt to reduce total contract pricing and perhaps to lock into fixed pricing for a longer period to mitigate exposure to extraordinary escalations," he notes.

Shimizu has noticed that ad hoc exchange activity is continuing to increase as airline, lessor, OEM, MRO and other parts suppliers are suffering from prolonged delays of their owned material returning to inventory due to continued TAT issues at their chosen workshops. "At AerFin, we are increasing our vendor performance measurement activity to ensure that our high priority operational critical items are returned back into stock with minimal delays to ensure maximum inventory turns are achieved." Shimizu continues.

His colleague, Mathew Punter, VP Repairs at AerFin, chips in saying as a consequence of current supply chain



Scott Butler, Chief Commercial Officer at Ascent Aviation Services

“supply insurance” to cover themselves, however, he argues that some operators have lost their ability to understand and negotiate favourable supply terms – “This probably has to do with the loss of knowledge and accumulated experience over the pandemic and that is leaving them in a weak position in front of pool stock suppliers.”

Supply chain issues have a direct impact on TATs of parts from wing to shelf, and Garofalo explains that items are taking longer to pass through the repair cycle and reach the shelf in serviceable condition. “This is affecting agreed service level and increasing the costs by making added decisions on buying versus repair, therefore diminishing the appetite to supply serviceable spares on exchange basis,” he says.

Customer decisions related to parts pooling and exchange programmes are typically aligned with their established internal capabilities to manage inventory, according to Mini Desai, the VP and General Manager of Commercial Spares and Managed Parts at Boeing Global Services.

“Some operators have the scale, infrastructure, people, processes and systems to manage an in-house solution. Other operators prefer to partner with a pooling and exchange provider and focus



Demand from operators has shown the need for investment in exchange pools.

© Ascent Aviation

on airline operations.” Desai continues to see interest in longer-term comprehensive solutions as many airlines had to go very lean during the pandemic and pooling and exchange programmes are one method for predictable costs with minimal asset expenditure.

Desai comments that pooling and exchange programmes leverage economies of scope and scale to deliver access to parts efficiently. “Therefore, a pooling provider would be better positioned to service customers with fewer parts overall. However, industry-wide supply chain shortages are putting strains on pooling and exchange programmes,” she observes. In this constrained environment, prioritisation will be given to AOG and critical demands. Boeing Global Services expect these disruptions to continue until the supply chain stabilises at a level that will meet aftermarket and production demand.

Managing Aircraft on Ground cases

Desai indicates that Boeing helps simplify this by looking at multiple options to meet an operator’s need. “For example, there may be an alternate part or interchangeable part that may be more readily available, either in stock, in the pool, or in the market, to satisfy the AOG

requirement. Predictive maintenance tools and maintenance practices can also be helpful in preventing AOGs,” she notes.

Irribarra from Kellstrom believes efficiency is the name of the game here and more importantly during an AOG situation where part availability and reliability is paramount. “AOG is a predicament that must be tackled efficiently and effectively. Parts consumption and reliability information should be analysed and available



Carlos Garofalo’s, Manager Asset Life Cycle Solutions, AMROS Group



Mini Desai, VP and General Manager of Commercial Spares at Boeing Global Services



continuously, as well as, airworthiness information and bulletins issued by local and international agencies, such as the FAA, EASA, CAAC, engine and aircraft manufacturers. Fast deployment of parts is also crucial, as well as, having the means to install the parts and release the aircraft to service as quickly as possible.”

Irribarra reports that Kellstrom Aerospace offers a variety of services specifically tailored to alleviate the constraints of AOG situations. Kellstrom stocks both factory new OEM distribution material as well as used serviceable material (USM) with zero overlap with OEM distribution lines.

Collins Aerospace operate an around the clock customer response centre that helps customers navigate technical answers along with sources for new parts and exchanges. May, says Intertrade, a Collins Aerospace company, provides additional options for surplus and exchange material – “Intertrade is an excellent solution in these cases as our

team can obtain components from a variety of sources without operators having to conduct those searches themselves,” he states.

In practical terms, Garofalo from AMROS believes there is no straight answer to the AOG issue. He feels that generally, having an uncomplicated and experienced organisation with up-to-date networks and contacts is still the best way in such scenarios. “This is exactly what we provide to our customers as a great value-added service. It is a global market and so is the sourcing of spares and remember this industry still relays on personal contacts.” He says there are plenty of IT solutions to help source spares, but due to the disruptions caused by the pandemic and its aftermath, credibility on the data presented remains an issue, leaving room for speculation on where and who might be the actual holder of the spares in demand.

Meanwhile, AerFin offer various flexible component lease solutions to ensure

that operators have dedicated access to inventory at their chosen locations to mitigate AOG scenarios. Shimizu said: “Above and beyond leasing of components, through perpetual inventory analysis of our global operator customer demand and forecast, AerFin positions optimal serviceable inventory around the globe to ensure that our operators are supported with operational critical items on hand at optimal geographical locations - whether the customer is a contracted with AerFin or not.”

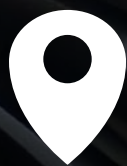
Shimizu says aircraft owners can also take advantage of placing phase-out aircraft on consignment with AerFin. “We offer flexible consignment programmes which not only provides highly attractive returns to maximise residual values, it provides component recall options which can be utilised on the operator or owners’ aircraft fleet. This provides a swift economical solution reducing cost and increasing access to a wider pool of inventory whilst maximising returns.”



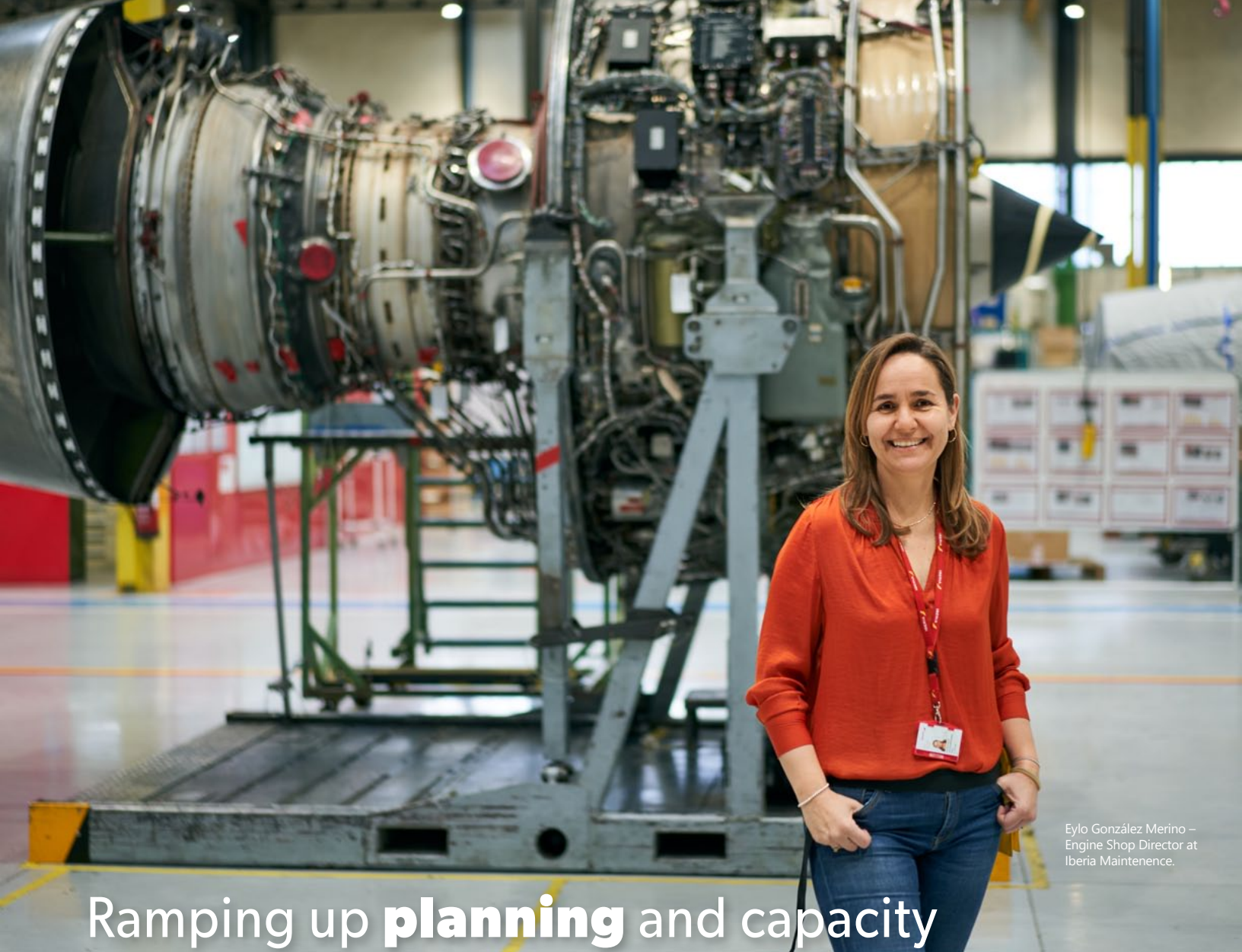
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Eylo González Merino –
Engine Shop Director at
Iberia Maintenance.

Ramping up **planning** and capacity for new engine propulsions

New engine platforms aim to reduce operational costs and drive sustainability and now, MROs are investing in the necessary support systems and processes, so planning and keeping a watchful eye on supply chain issues will be crucial.

By Keith Mwanalushi

Back in October, Iberia Maintenance announced receiving a new authorisation from Pratt & Whitney to service the GTF PW1100G-JM engine, powering the Airbus A320neo family. Iberia expects to induct the first engine this year and preparations are well underway.

"In October last year, after obtaining the license to service the GTF, Pratt & Whitney started training our engineers on GTF familiarisation courses, to be fully

up and running by the second half of this year, when the first GTF is expected," Eylo González Merino – Engine Shop Director at Iberia Maintenance tells *AviTrader MRO*.

Iberia expects the arrival of a training engine in Q2 2023 and she indicates that it's one of a select few workshops in the Pratt & Whitney network with this license. "It allows us to provide engine maintenance services for this engine type for the full life of the programme, thereby guaranteeing a stable workload for the

foreseeable future, ensuring quality employment for the next generation of engineers, technological and engineering development, and investment in knowledge and infrastructure," she states.

González Merino admits that since the GTF and the CFM LEAP are relatively new, there could be a few teething operational challenges in the first couple of years. "Initially, most of our workload will still consist of more mature platforms like CFM56 and V2500, but over time we

expect the proportion of next-generation engines, like GTF, to grow.”

Given Iberia’s strong position in the CFM56 and, especially, in V2500 markets, the plan is to work with a mix of legacy and next-generation platforms in the coming years, according to González Merino. “As long as the operation of the mature platforms is ongoing, we will keep providing services for them, balancing the workload in the shop between the mature and the new engine types.”

Iberia anticipates a peak in demand considering the backlog for new aircraft deliveries that will likely see existing leases being extended. “We expect to continue to receive more CFM56’s and V2500’s than originally anticipated and while this is all happening the first GTF’s and LEAP’s are also starting to need shop visits,” González Merino continues. To ensure a high-quality transition, Iberia Maintenance have implemented a robust onboarding plan for new technicians. At the same, the Madrid based MRO is transitioning some of its existing staff to the new product lines – “Overall, we expect to increase our staff by more than 20% to accommodate the growth in capacity demand,” she reveals.

Most obviously, the folks at



The Aeroset team at the London warehouse, Carl Marden, Bianca Todoruta, Charlie Lovett.

StandardAero expect to see a continued expansion in the authorised service centre networks for new-generation engines as the markets recover fully from Covid, and as fleets of new-generation aircraft such as the Airbus A320neo and Boeing 737 MAX displace older types. “While the pandemic may have delayed the uptake of these more fuel-efficient designs, and while supply chain issues may be constraining ramp-up rates, there’s no doubt that customer interest in them remains strong,” declares Jay Aiken, VP Sales, Turbopfans for StandardAero Airlines and Fleets.

StandardAero also expect to see healthy demand for engine health monitoring data analysis services, such as those provided by their Gonesse team in France, plus continued interest in quick turn service centres for those operators seeking the convenience of shop proximity.

Aiken informs that StandardAero was one of the first companies to be appointed to Pratt & Whitney’s GTF engine repair supplier network back in 2018, and the facility in Kansas City provides component support for the GTF family, including new make parts.

Aeroset, an engine parts and services provider are also ramping up capabilities for new engines. Following extensive

expertise on the CFM56 Family, V2500 and RB211 platforms, the company is welcoming PW1000G and PW1100G GTF engines, LEAP 1-A for A320neo Family, LEAP 1-B for Boeing737 MAX and LEAP 1-C for COMAC C919 aircraft during 2023 and 2024. The Rolls-Royce UltraFan capability will also be included in the decades to come.



Jay Aiken, VP Sales, Turbopfans for StandardAero Airlines & Fleets



Mariano Longo, Chief Business Officer at Aeroset



Mechanics at LHT are currently being cross-qualified for both the LEAP-1A and LEAP-1B.

© Lufthansa Technik

“Both the GTF and LEAP are made with lighter materials, states Mariano Longo, Chief Business Officer at Aeraset. He says in order to reduce the weight of the engine, both types have replaced metal structures for composite structures, and with 3D printing methodology, for example, the LEAP fuel nozzles. “The performance, that is thrust, consumption and other parameters have all been improved at all levels. Also, the new electronics and their reinforced interfaces with the aircraft allows the use of a powerful tool, that is preventive maintenance. This option can show the remanent of LLP’s quite easily, warnings related with the replacement of spare parts or corrective maintenance actions, and so on, improving safety, reliability and the planning timeframe,” Longo explains.

Derrick Siebert, Head of Commercials Engine Services at Lufthansa Technik notices that even before the pandemic the 737MAX with its LEAP-1B engines were grounded for some time, meaning that the

engines have accumulated green time and the expected MRO demand will be shifting to a later point in time.

“During the pandemic many aircraft and engines were not utilised as expected during normal operations, they were parked or stored or only operating a limited amount. Hence, many engines have not accumulated the pre-pandemic forecasted hours and cycles yet, meaning that their cycle and hour limited MRO needs will be shifted,” says Siebert.

He explains that most of the LEAP engines that are currently being inducted are for quick turns – to introduce upgraded PNR to replace early design configuration. “Since the borders have

reopened and travel restrictions have been lifted there is a high demand for travelling and utilisation is growing to or even past pre-pandemic levels,” he mentions.

Perhaps a challenge facing MRO providers is keeping up with the steep production ramp-up for aircraft like the 737 MAX and the A320Neo and subsequently the LEAP-1B and 1A engines post-pandemic.

“We are aware of the market growth and demand for LEAP MRO services and are ramping up our capacity significantly,” Siebert tells. In comparison to January 2022, Lufthansa Technik have doubled their induction capacity from January 2023 onwards for LEAP-1A engines with the LEAP-1B following in Q2. “Our facilities at our headquarter in Hamburg will accommodate this future growth and our mechanics are currently being cross-qualified for both the LEAP-1A and LEAP-1B, allowing us the flexibility to adapt to market demand,” Siebert confirms.

Additionally, Lufthansa Technik is running a hiring campaign to draw in new talent in significant numbers and recently established a dedicated engine training facility for mechanics in Hamburg Rahlstedt. Siebert adds:

“We have very good experiences with this kind of training from our previous ramp ups which we are now utilising to ensure successful LEAP engine ramp up and entry into service for the LEAP-1B. We are also continuing with our highly appreciated Lufthansa Technik apprenticeships.”

Kevin Kruger, General Manager, HAECO Global Engine Support anticipates that the need for “on-wing” or “near-wing support” will continue as the aircraft



Derrick Siebert, Head of Commercials Engine Services at Lufthansa Technik

“We are aware of the market growth and demand for LEAP MRO services and are ramping up our capacity significantly.”

Derrick Siebert, Lufthansa Technik

“We do foresee a need for increased work-scope depth on the new generation engines and are increasing our capabilities to be able to respond to the requirements on behalf of both airlines and OEM’s.”

Kevin Kruger, HAECO Global Engine Support



The need for “on-wing” or “near-wing support” will continue as the aircraft fleets are re-activated.
Photo: HAECO

fleets are re-activated and demand for flying increases. “We do foresee a need for increased work-scope depth on the new generation engines and are increasing our capabilities to be able to respond to the requirements on behalf of both airlines and OEM’s. In Dallas for example, we are investing in additional gantries and tooling whilst looking to increase throughput in the London facility.”

HAECO GES are increasing global capability by adding LEAP 1A and B modular repairs to the current capability list at the Dallas facility. Kruger says Hong Kong, London and Amsterdam facilities who were traditionally focussed on the widebody engines are now expanding scope to include the LEAP engines as well as the CFM 56, with the expectation of the lease numbers growing to support the engine operators, as they shift from ownership to lease finance models – “We

are also recruiting staff into all of our facilities to meet the increasing demands,” he adds.

Covid has certainly taught companies the need to be flexible and adjust to changing circumstances at a greater pace than had been the case previously. “In 2022 alone we saw emerging economic challenges, escalating political conflicts and ever increasing emphasis on sustainability, all of which impact the MRO business,” says Michael Grootenboer, AFI KLM E&M SVP Group Engines Product.

Despite all these challenges, Grootenboer feels airlines around the world are heavily investing in new generation aircraft and engines to reduce operational costs and drive sustainability – “We believe this will result in strong continued growth for the MRO industry. At AFI KLM E&M we are well positioned in supporting airlines for these future



Kevin Kruger, General Manager, Global Engine Support at HAECO

challenges with capabilities for all major new generation engine types including GENx, LEAP-1A and LEAP-1B, Trent-XWB and GTF. Of course, we combine this with cutting edge predictive maintenance solutions and a drive for sustainability that is deeply ingrained in our organisation.”

Considering, the size of the LEAP

market and the resulting high demand for MRO services for these engines, AFI KLM E&M decided to industrialise full capabilities for both LEAP-1A and LEAP-1B in both the Amsterdam and Paris engine shops. "This puts us in a unique position to be able to offer our customers both capacity and flexibility," Grootenboer notes. Furthermore, he says because of the extensive in-house repair capabilities, and longstanding relationship with the engine OEMs AFI KLM E&M are able to navigate through the supply chain challenges that emerge periodically in these high-demand times.

Keep an eye on maintenance costs

In the current economic environment of rising inflation, costs in general are increasing and at the same time, there is continued pressure from airlines to control costs and where possible to reduce that, González Merino from Iberia observes.

She says one of Iberia's focus areas is to continue to strengthen the in-house repair capability, in particular for the CFM and the V2500's, which allows parts to be repaired instead of having to replace them. "This reduces customer expenditure, is more sustainable and gives better turnaround time control. For the newer



MROs are keenly aware of the market growth and demand for LEAP MRO services. Photo: Lufthansa Technik

engine types like GTF and LEAP, not as many repairs are developed yet, but this will come over time. Iberia Maintenance is putting a specific focus on partnering with the OEM to develop and execute as many repairs as possible in order to avoid having to replace parts," González Merino indicates.

In addition, the supply chain network in general is still constrained due to the limited availability of certain raw materials and limited production capacity. González Merino continues: "This is one of the main challenges for the foreseeable future. While setting up our supplier network for these new engine types, which includes the OEM, this is an area of specific focus to ensure we are able to deliver on our cost and turnaround time commitments to our customers."

While new-generation engines inevitably still have some way to go to prove that they can match the durability of the mature CFM56 family, it seems likely that their ability to offset any difference in maintenance costs through improved efficiency will become ever more important to operators, both in terms of fuel costs and CO2 impacts, according to thoughts from Aiken at StandardAero.

Meanwhile, Lufthansa Technik are currently carrying out the world's first Performance Restoration Shop Visit (PRSV) of a LEAP-1A engine. Siebert explains that the PRSV serves to restore the performance of the engine – "This special shop visit gives Lufthansa Technik the opportunity of being the first maintenance organisation in the world to analyse the new engine type under real operating conditions."

He says this will aid in identifying further design requirements for component repair. The LEAP-1A engine is owned by the Swedish charter company Nova Airlines AB (Novair). Novair signed a long-term contract for engine services in 2019, becoming Lufthansa Technik's first-time customer for the new engine type. An initial test run is used first to analyse which modules are responsible for the efficiency losses as Siebert further explains: "The goal is to make the dismantling and repair effort efficient while keeping the incurred costs for this and future customer as low as possible. In addition, the initial analysis also helps to acquire data to create a digital twin of this engine type. This data is the basis for further digitisation developments."



Michael Grootenboer, AFI KLM E&M SVP Group Engines Product.

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Risto Mäeots, Chief Executive Officer, Magnetic Group

Q & A

In the hot seat...

Risto Mäeots
Chief Executive Officer
Magnetic Group

What attracted you to this industry?

I have always been fond of technology and engineering – it started from my father and grandfather. My father was involved in motorsports and grandfather was running a farm where I spent most of my free time working and operating machines. After graduating from gymnasium, the decision to study aircraft engineering came very naturally for me. From an early age I knew what I wanted to do and I immediately felt passionate about it.

What does a typical day involve in your role?

From the start of my career, I was directly linked with engineering, getting things maintained, reading manuals and so on. Today, my work mostly involves managing people and working closely with different stakeholders (investors). The nature of my work has changed significantly. The best comparison is this likely scenario: In the early days I felt a satisfaction seeing a component or aircraft leaving our premises well maintained, fast forward to today, I also get satisfaction seeing my colleagues growing as professionals, becoming industry opinion leaders, and taking

big decisions. It's important to create an environment that nurtures the growth of talent, once you achieve this, then everything else (good numbers, great deals, fun, etc.) starts happening organically.

Let's reflect on 2022 - what were some of the highlights?

On a company level, we exceeded our financial targets by 21% and reached nearly a 40% recovery rate. With that said, not everything is as straightforward and like most aviation companies, we felt the impact of inflation across the board. Despite the current economic circumstances, energy costs, geopolitical instability, labour and supply shortages, during the last quarter of 2022, aviation experienced a traffic increase reaching around 70%, and resulting in 4.7 billion profit industry-wide. This lays the foundation for a promising year compared to 2020, when the annual loss amounted to 138 billion, leading to a substantial industry-wide recovery. However, we can also expect the unexpected due to external circumstances, making 2023 a dynamic and unpredictable year.

What is 2023 likely to bring?

The travel demand is no longer a concern nor a limitation to the recovery. Instead, the main issue is the ability to put capacity into the air. The driving force behind the reason we have seen a similar level of traffic now compared to 2019 is the Chinese market opening like it had prior to Covid. So in 2023, the borders of China will remain fully open. Despite the increase in demand, capacity remains an issue and goes hand in hand with shortages in supply and the lack of staff. Moreover, as most employees left aviation and integrated into other industries, replacing them is a complex process, and training takes time. But almost all challenges can be turned into opportunities. For example, we've implemented an AI-based solution by SkySelect that helps us optimise workflows and uncover new demands, and allowing us to scale. Since the

market has become more dynamic than ever, trading and back-to-back buying and selling are making a strong comeback. They are back because of a supply issue as airlines are prudent and want to use and maximise whatever they can. Naturally, they tend to look for providers selling parts as most OEMs are behind in production.

So, we see that manufacturers continue to struggle with production ramp-ups, delaying delivery rate targets by a year. Whereas recovery of demand has been exponential, and the past three years of 'aviation stoppage' has caused a shortage of supply. For the above reasons, the ability to source, and do it quickly will be crucial. Moreover, in 2023, cash remains king, and most companies don't have enough of it, so they are likely to highly prioritise raising cash flow.

Are there any specific trends that you see this far?

With the delays in supply and slower turnaround rates, lots of aircraft were ordered, but the OEMs are behind, so the new aircraft cannot be delivered at the usual rate. This results in older aircraft flying longer, which requires parts, making it both a challenge and an opportunity. But again, these aircraft types have particular issues, whether it's costly window frame or wing corrosion repairs on an A320, which need adequate and custom solutions.

In terms of the Magnetic Group, what are some of the priorities for the coming 12 months?

We are focusing on further business expansion into new geographic areas and strengthening our presence in the current ones, such as Miami and Kuala Lumpur. Also, due to economic circumstances, we are being more cost-savvy and planning to increase our pricing. Consequently, this year is about turning challenges into opportunities, becoming more lean, agile and learning to navigate and adjust to these global pressing issues more than ever before.

»»»» → *on the move*



Jan van Engelen

MAAS Aviation has appointed **Jan van Engelen** as Chief Executive Officer from March 1, 2023. An accomplished executive and board member, Van Engelen has over 25 years of international experience in the aviation services industry. He succeeds **Tim Macdougald**, who has held the position of CEO at MAAS since 2017. Macdougald will remain active on a day-to-day basis, leading MAAS' further

growth initiatives as Chief Business Development Officer. In this new role, Macdougald will also continue to support the senior leadership team, and all colleagues at MAAS' global facilities, utilising the skills and expertise he has gained over his last 14 years with the business. With a proven track record of forging long-term strategic partnerships and alliances, Van Engelen joins MAAS from a diverse and extensive background in the aviation sector, most recently holding the position of CEO for Continental Europe of the ground handling and aviation services company, Swissport. Prior to this, he held various senior positions within CAE, a global leader in aviation training services. In his new role as CEO at MAAS, Van Engelen will be responsible for leading the team in pursuit of its strategic plan to drive sustainable growth and to build and foster new and existing long-term partnerships.



Nicolas Potier

Nicolas Potier has been appointed Vice President, Support & Services of Safran Aircraft Engines on February 1, 2023, and he will also become a member of the company's Executive Committee. Potier will replace **François Planaud**, who is retiring. Potier began his career in 2007 at the French Ministry of Economy, Industry and Employment. In 2010, he joined the French Prime Minister's Office as

advisor in charge of industrial policy. He joined Safran Aircraft Engines in 2012, as Director of Industrial Strategy and then took

responsibility for the large commercial engine programmes. In 2016, he was appointed director of Services Operations within the Support & Services Division. In 2019, he joined Safran Landing Systems where he successively held the responsibility of Executive Vice President of the Systems and Equipment division and then of the Wheels & Brakes division. Potier will bring his strong customer experience in the aerospace industry to his new position, as the company faces a significant ramp-up of support and services activities.



Kenny Chan

Storm Aviation has announced the appointment of **Kenny Chan** as Director of Maintenance. In his new role, Chan will be responsible for the management and development of all line maintenance, light maintenance and AOG services and reporting directly to Storm Aviation CEO, **Thomas Buckley**. He joins Storm Aviation from Cathay Pacific Group, where he served as Head of Line Maintenance

and was responsible for international line maintenance network covering operations, safety leadership, third-party business, end-to-end supplier management, and business improvement projects. Chan is an accomplished engineer across the full spectrum of aircraft engineering and a respected industry professional. He started his aviation career as a Graduate Engineer in Cathay Pacific in August 2001, he worked in a wide range of creditable technical and operational roles to develop his industry and operational expertise before moving up to management as Regional Line Maintenance Operations Manager for the airline in 2011. He is passionate about driving business transformation and the continuous development of the team. During his time at Cathay Pacific, he delivered many successful projects such as LM mobility, APU-less towing, potable water optimisation and implementation of regional maintenance base in Taiwan, Shanghai, and Singapore to improve operational efficiency and enhance productivity.



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