

MRO

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Leveraging digital in the aviation aftermarket

Engines

Trading and lease market bounces back

MRO Americas

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Aviation industry shows out in Atlanta, Georgia

Back to normalcy. Atlanta hosted the MRO Americas in April.
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It was my first time to attend the MRO Americas event which took place in Atlanta last month and it was a fantastic opportunity to finally meet several industry colleagues that we shared so many emails during the lockdown period. It was also great to catch up with others that I have known for many years.

The event drew over 15,700 attendees representing companies from 89 countries and the team from AviTrader was there to capture the action. We got a feel of some of the innovations and technologies that will shape the MRO and aftermarket in the months and years to come - some of these making their debut in Atlanta. Check out our report in this edition.

We heard from companies like NSL Aerospace and their plans to expand capabilities beyond sealants to offer a range of replacement expendables and parts, while of course providing PMA sealants to the aviation industry. It was interesting to hear their views on the PMA market which remains robust despite the longstanding debate on the use of PMAs by some industry sections.

We saw other companies like EirTrade Aviation emphasising that the strong demand for engine and airframe material was a catalyst for super-charging growth in the region, but certainly there were still challenges that the industry will share. The aircraft teardown and remarketing segment was represented in full force demonstrating the continued demand to fuel the used serviceable material requirements the industry needs. VAS Aero Systems for instance announced it had secured an additional two A320s and two B737-700 aircraft for teardown and subsequent parts harvesting and marketing.

As this was my first MRO event post-pandemic, it was encouraging to see some normalcy returning to the industry with face-to-face engagements once again. No doubt challenges will prevail but indications point to an upward trajectory for MRO.

Keith Mwanalushi
EDITOR



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AAR

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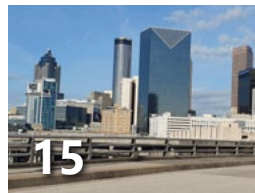
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Hardide Coatings partners with Gardner Aerospace to coat Airbus components



Hardide Coatings and Gardner Aerospace to coat key wing components for the Airbus A320-family of aircraft © Airbus

Advanced surface coating technology company Hardide Coatings has entered into a partnership with Gardner Aerospace to coat key wing components for the Airbus A320-family of aircraft. The Hardide CVD (chemical vapour deposition) nano-structured tungsten/tungsten carbide coating was selected after extensive testing by Airbus and is replacing hard chrome plating (HCP) previously used on these components. This is part of a strategic move by Airbus away from the use of HCP as a result of the REACH regulations, which currently bans the production of HCP in the EU and UK from September 2024. The Hardide-coated components, which are critical to the operation of the flap mechanism, will be used on new-build A320s and as replacement parts for the existing fleet of aircraft as these are maintained. Initial components are expected to be coated in June 2023 with regular monthly volumes thereafter. Airbus is currently producing 50 A320 aircraft per-month with plans to increase this to 75 per-month by 2026. Hardide Coatings is currently coating similar wing components for the Airbus A330, A380 and A400M aircraft. Philip Kirkham, CEO of Hardide plc commented: "We are very pleased to have been selected to coat further components for the Airbus single-aisle A320-family high-volume production aircraft, and to replace hard chrome plating (HCP).

LHT signs five-year contract with Chilean carrier JetSMART for CAMO and aircraft engineering services



JetSMART and LHT have signed a CAMO and aircraft engineering services contract © LHT

Lufthansa Technik is expanding its footprint in South America by signing a contract with Chilean airline JetSMART, that runs for five years and includes extensive CAMO (Continuing Airworthiness Management Organization) support and aircraft engineering services, such as maintenance programme support or modification and component management. The collaboration has already begun and will initially cover 25 Airbus A320-family aircraft. With the planned growth of the airline, the fleet is expected to increase rapidly until 2027. To ensure the best possible service, Lufthansa Technik has set up onsite support for the customer in Santiago de Chile. JetSMART has a brand-new fleet of Airbus A320s and A321s. JetSMART is part of the portfolio of the US fund Indigo Partners, as Frontier in the USA, Wizz Air in Europe, Volaris in Mexico, Lynx in Canada and Cebu Pacific in Asia.



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RECARO's BL3710 economy-class seats enter into service on IndiGo's A321neo



RECARO BL3710 economy-class seats

© RECARO

RECARO's BL3710 economy-class seats have entered into service on IndiGo's A321neo aircraft. This seat programme marked the first time that IndiGo selected RECARO as a seating solution partner since the airline's founding in 2006. Deliveries of the BL3710 will be installed on a fleet of 75 Airbus A321/A320neo aircraft. Each A321 can seat 232 passengers on the award-winning economy-class seat. Outfitted in a customised trim and finish, the lightweight seat features numerous comfort features, including integrated neck support, an ergonomic backrest and generous living space. The BL3710 was unveiled in 2019, built specifically for short and medium-haul flights and has earned accolades from Red Dot Design and iF Design.

Farsound opens new state-of-the-art facility in Texas

Farsound Aviation (Farsound) has announced the opening of its new state-of-the-art facility in San Antonio, Texas this summer. The expansion will enable Farsound to enhance the services it offers to its customers across the U.S.A. Farsound also operates out of facilities in the UK, Canada, Spain, Japan and Singapore. The new state-of-the-art premises in San Antonio will serve as a base for all Farsound's activities in the Americas, from bespoke MRO supply chain services to aero engine parts logistics. The initial facility will occupy approximately 28,000 ft² of specialist warehousing and office facilities. This expansion follows the appointment of new Farsound President U.S.A., Matt Berkebile, who will be based out of the new facility. Matt will oversee plans for growth across the U.S.A. to develop Farsound's reputation and market reach in the lucrative global MRO and aviation sectors.



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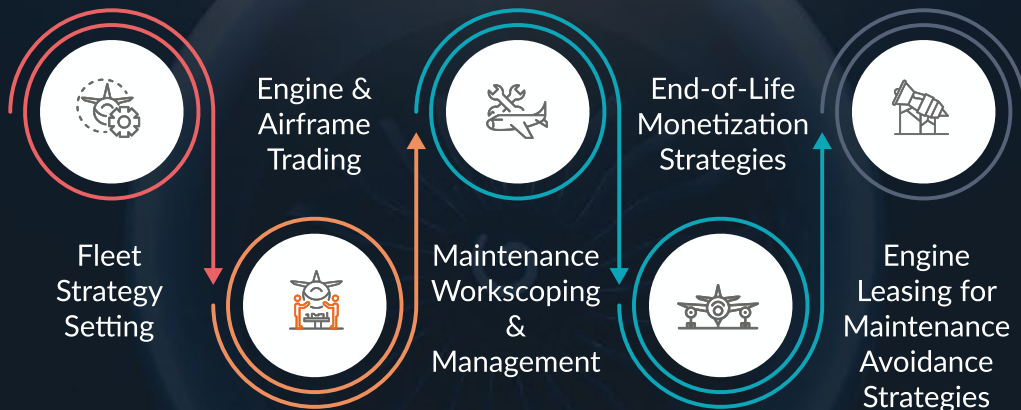
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Rolls-Royce and Philippine Airlines sign TotalCare agreement for Trent XWB-97 engines

Rolls-Royce has signed a TotalCare service agreement with Philippine Airlines for Rolls-Royce Trent XWB-97 engines that will power nine Airbus A350-1000 aircraft. The agreement will provide the airline with predictability as well as a known cost for the services and maintenance of the new fleet. TotalCare is designed to provide operational certainty for customers by transferring time on wing and maintenance cost risk back to Rolls-Royce. This industry-leading premium service offering is supported by data delivered through the Rolls-Royce advanced engine health monitoring system, which helps provide customers with increased operational availability, reliability and efficiency. As versatile as it is reliable, the Trent XWB has already shown it is equally efficient at powering short-haul or long-haul flights, which makes it the ideal solution for passenger and freighter operators with a varied network. As the world's most efficient large aero engine in service, the Trent XWB will also help fast track Philippine Airlines' sustainability journey. With a 15 per cent fuel consumption advantage over the first generation of Trent engine, the Trent XWB goes further on less fuel, and offers leading performance and noise levels. It is also ready to operate on a 50% Sustainable Aviation Fuel blend.

Aircraft maintenance software provider **Rusada** has released that its ENVISION solution has been certified by SAP as integrated with cloud solutions from SAP. The certification allows organizations using SAP S/4HANA® to interface with ENVISION more easily and pass data between the two systems using tested and certified integrations. Through using the ENVISION Integrator, customers can now create input and output interfaces for SAP systems without additional programming, using standard APIs available on the SAP Business Technology Platform. "Our certification with SAP enables us to significantly reduce the effort required to integrate with their cloud solutions" comments Neil Hargreaves, Chief Operating Officer at Rusada. "The creation of integrations is a key step in many ENVISION implementations, so anything we can do speed-up this process results in time and resources saved for our customers."

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P&WC to invest US\$10 million in technology upgrades at Wichita Falls facility

Pratt & Whitney Canada (P&WC), a business unit of Pratt & Whitney, has announced a US\$10 million investment to expand the capabilities of its Wichita Falls, Texas, engine component repair facility, which is expected to create 30 new jobs. As part of the investment, the company will modify its existing coatings line using an innovative application process. "The Wichita Falls component repair facility joined the Pratt & Whitney Canada family in 1997 and since then we have strengthened our ties with the local community," said Irene Makris, Vice President, Customer Service, Pratt & Whitney Canada. "We continue to invest and grow in Wichita Falls because of the strength of the local workforce, the support of the community, and the enthusiastic 'can do' attitude of our Wichita Falls team and leadership. Our Wichita Falls facility will be the first of



From left: Irene Makris, VP Customer Service, P&WC, Stephen Santellana, Mayor of Wichita Falls and Leo Lane, President of the Wichita Falls Economic Development Corporation © P&WC

our plants to pioneer a new coating process which will significantly improve the durability and performance of our engines." The facility repairs the "hot" (combustion) sections of a variety of

Pratt & Whitney Canada engines. As part of the repair process, certain engine parts, such as turbine blades, are given a special coating that protects against the high temperatures needed for these high-performance engines. The investment is to create a line that uses a newly developed coating technique. Pratt & Whitney Canada designs, builds and maintains engines for a variety of missions and purposes, from general aviation enthusiasts to life-saving air medical and rescue operations. This year, Pratt & Whitney Canada is celebrating achieving 1 billion operating hours since it was founded in 1928. Pratt & Whitney Canada has produced more than 110,000 engines, and 66,000 engines are currently in operation throughout the world. Construction will begin before mid-2023 and is expected to be completed by early 2025.



EirTrade Aviation undertakes inaugural disassembly programme for two Boeing 787-8s



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The background image shows a male technician in a red polo shirt, black cap, and safety glasses working on a large aircraft engine. He is holding a flashlight and looking intently at the engine components. The scene is set in a maintenance hangar with yellow overhead structures.

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Lifting the grey zones from aircraft **recovery** through training and information sharing

KUNZ joined ICAO's TRAINAIR PLUS programme as a bronze associate member.
© All photos: Keith Mwanalushi

KUNZ is one of the leading manufactures of aircraft recovery equipment in the world, and *AviTrader MRO* attended an open day to gain greater awareness of the developments and concerns facing the recovery sector.

By Keith Mwanalushi in Hahn am See, Germany

Aircraft recovery is the unsung hero of operations aimed at the removal of disabled aircraft. Incidents that require recovery of the aircraft can be problematic for both airlines and airports especially where there is no or inadequate recovery systems in place. A runway excursion for example that lasts 24 hours can cause severe traffic disruptions, diversions and even an airport closure due to the inability to have the aircraft recovered. When such incident occurs, it is generally the airline operator's responsibility for the recovery.

Aircraft recovery equipment can be a significant investment for airlines, but this has become an operational requirement by aviation authorities and airports globally.

In April, Kunz hosted over 70 participants ranging from airlines, airports, OEM's, military organisations and aviation authorities from around the globe for an

open day to showcase the latest inventions, products and procedures for proper aircraft recovery - and *AviTrader Publications* was the only trade media invited.

The recovery open day takes place every two years at the KUNZ facility in Hahn am See, Germany. "It is an opportunity to invite customers and prospective customers to see what we do and demonstrate the correct procedures for aircraft recovery," says Andreas Fuge, Managing Director at KUNZ GmbH aircraft equipment.

During the event, it was revealed that KUNZ is now the world's first provider for practical aircraft recovery training and joined ICAO's TRAINAIR PLUS programme as a bronze associate member. In addition, KUNZ trainers demonstrated how to recover an A320 in a tail tip and flat tire scenario. The demos were performed on a decommissioned A320 aircraft formally operated by Germanwings and another

Tupolev airframe is also used for training.

KUNZ is now the first aircraft recovery training centre worldwide to partner up with ICAO and to develop its own standard training package for aircraft recovery training starting in early 2024. Starting with training season 2024 KUNZ will offer ICAO accredited training courses (STP) in addition to its regular training portfolio. In addition to KUNZ certificate, participants will also receive an official certificate from ICAO.

"For us it was important to get accreditation and recognition for our training facility because aircraft recovery is not under FAA or EASA regulations," reveals Fuge. He says in securing the partnership ICAO audited the facility last year, and since the start of 2023 as a partner they have been setting up standard operation procedures for aircraft recovery training.

Fuge adds: "We see that training is important to ensure that users of our



Flat tire scenario demo in progress at KUNZ open day.

equipment are aware of the safe and correct procedures. It is also worth noting that the accessibility to manuals is difficult for a lot of our customers, so for us it's vital to enlighten them about the specifics of the aircraft."

The lack of standardisation in recovery kit manuals is an issue of concern for Fuge in addition to the lack of oversight by the FAA and EASA. He explains that the manuals are proprietary information making the accessibility of these types of documents challenging for some of the people doing the job. "We see a grey zone in aircraft recovery in the context of missing control by

any authority, the lack of access to aircraft recovery manuals for the majority of users of aircraft recovery equipment and also the limited availability of proper theoretical and practical training is very limited," Fuge explains.

Secondary damage of the aircraft is another significant concern – "The structure of an aircraft is very sensitive, issues like skin pressure and any kind of pulling forces need to be monitored and controlled to avoid secondary damage and the impact might be heavy so the investment in correct equipment compared to aircraft damage is something to look at," Fuge advises.

In terms of worldwide recovery scenarios, data made available by KUNZ shows airports and runways were closed 278 hours more in 2022 compared to 2021. This is an increase of 40.5%. While traffic continuously grows, there was a significant increase of 10 more aircraft recovery incidents in 2022 compared to 2021 and there was an increase by 10% in landing gear collapse incidents in 2022 compared to 2021.

KUNZ are keen to clear out some grey zones and talk openly about the safe and proper recovery process to avoid secondary damage because collectively, the industry needs to perform safe and proper procedures, so all the stakeholders need the right information to be available for more players involved in this industry.

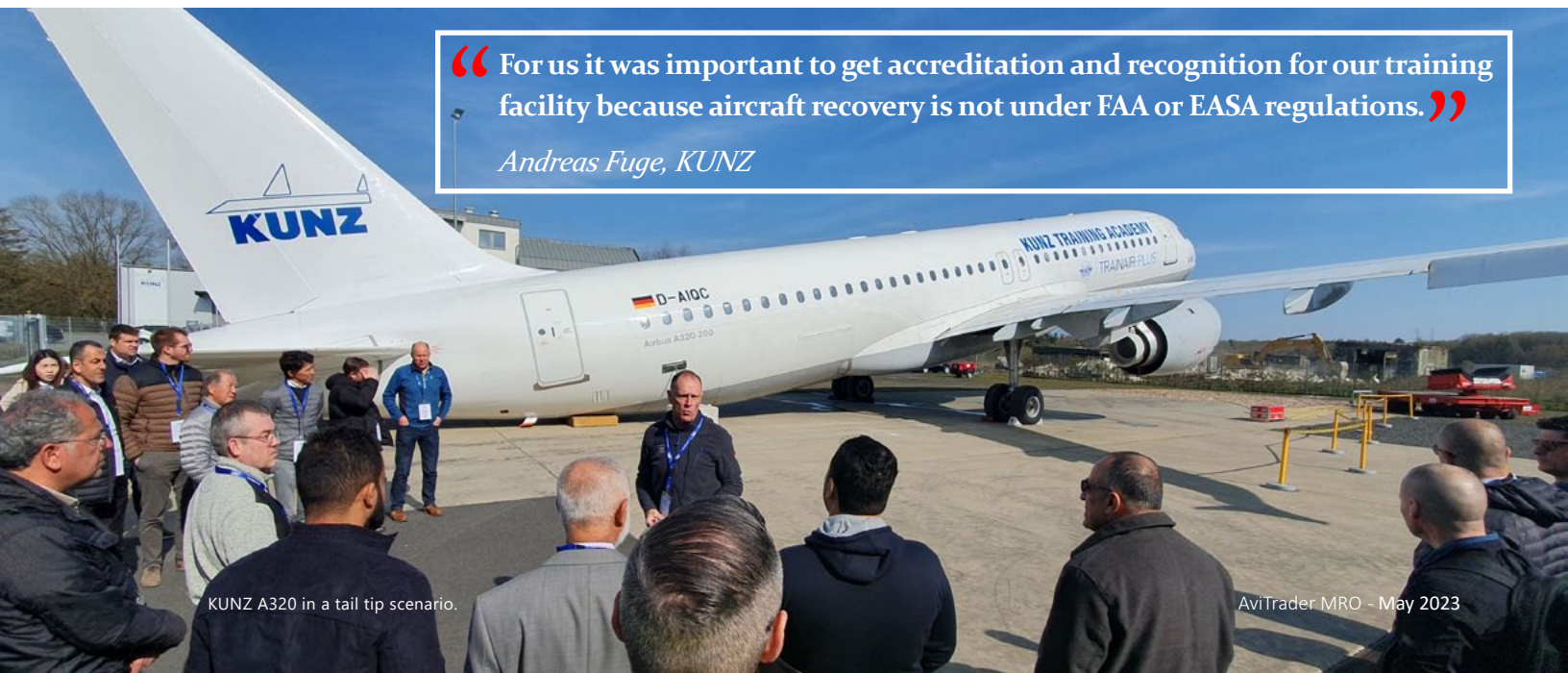
"We are trying to lobby to gain open access to procedures for levelling, moving and lifting of aircraft that have a recovery scenario," Fuge adds.

He sees significant demand post-pandemic for recovery equipment industrywide – "Well, we are seeing a lot more movement coming in - every airport wants to minimise the time the runway is closed after an occurrence, and we see a huge trend over the last few years with airports buying more equipment."

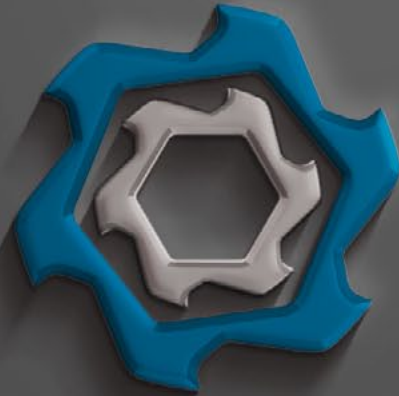
In the meantime, KUNZ are pushing ahead with their recovery training introducing new initiatives along the way in addition to the well-established manufacture of recovery and wheels and brake equipment.

“ For us it was important to get accreditation and recognition for our training facility because aircraft recovery is not under FAA or EASA regulations. ”

Andreas Fuge, KUNZ



KUNZ A320 in a tail tip scenario.



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Digital initiatives shine brightly over Atlanta, Georgia



Atlanta was the setting for the MRO Americas event in April.

© Keith Mwanalushi

Technology was a major theme at last month's MRO Americas event in Atlanta, Georgia and *AviTrader MRO* was on site to capture some of the innovations breaking through the market.

Digital applications for the aviation industry are seeing renewed resurgence with several new initiatives and MRO Americas in Atlanta showcased some interesting breakthroughs in support of the digitalisation movement.

Not surprisingly, blockchain was back in the spotlight as the technology continues to mature. The consensus was that blockchain as a database is a great tool to enforce data governance at a community level and that's what the industry needs to unlock those trust barriers to allow all stakeholders to share data for value.

During the event in Atlanta, AFI KLM Engineering and Maintenance and SkyThread, a provider of a neutral industry data network applied to aviation, announced the signing of an MoU to perpetuate their industrial and commercial partnership around the solution for 'SkyThread for Parts', to be implemented on AFI KLM E&M component services pool. The result of more than a year of collaboration based on SkyThread's blockchain and aviation data expertise combined with AFI KLM E&M's component support know-how, this innovation aims to facilitate, accelerate,

and secure the tracking of components from manufacturing to decommissioning. This will be implemented on AFI KLM E&M component services pool for its Boeing 787 network of operators.

Ton Dortmans, Executive Vice President at KLM Engineering and Maintenance revealed exclusively to *AviTrader*



Ton Dortmans, EVP KLM Engineering & Maintenance

Publications that a similar attempt was made four years ago but was not successful – "Now, we found a company that is very knowledgeable and has a lot of support in the market," he notes. As both companies have suggested, when looking at all the data that describes an aircraft or parts or engines, it's all spread out and the way to get better analytics and better value out of data and, their initiatives around digitisation and digital transformation is by breaking down those trust barriers that have prevented the industry from sharing data with each other in an effective manner. "This is what it's all about, we are taking the first steps with our partners, Air France KLM, to begin a dramatic industry transformation," mentions SkyThread CEO Mark Roboff.

SkyThread launched its first Solution, SkyThread for Parts, at the end of 2022. This solution, enabled by blockchain technology, captures and tracks aircraft part history and pedigree data over its life, event after event, from birth at the Tier 1 OEM through all maintenance events, both on and off the aircraft, and through decommission or recycling.



AFI KLM E&M and SkyThread signed an MoU in Atlanta to lay the foundations for partnership in the digital space.

© AFI KLM E&M

Over the development of the product, the efficiency of the technology and performance gains have been demonstrated. "The industry has been asking for an independent company to bring a solution like this to market, welcoming SkyThread as the solution provider. The market is clearly evolving amongst the stakeholders to work together and a market willingness to change. A major

outcome and take away for SkyThread at MRO Americas," says Roboff.

In Atlanta, AJW Technique also announced a partnership with SkyThread with a pilot blockchain for component maintenance around its network or customers and partners.

AkzoNobel Aerospace Coatings launched Aerofleet Coatings Management, a new digital, data-driven service that helps

airlines and other large operators to tailor and optimise the coatings' replacement and maintenance schedule for individual aircraft within an airline fleet.

External coatings have evolved rapidly in the last decade from single stage to basecoat/clearcoat systems, extending the need to repaint some aircraft for up to ten years or even more. Despite this, aircraft still tend to be taken out of service for maintenance every six or seven years without really knowing if a repaint is needed.

Michael Green, Segment Business Services Manager at AkzoNobel Aerospace Coatings revealed during a presentation that the company had a strong market share, especially in the commercial MRO business side of the business, but could not be complacent in that position because competition's always on the heels – "We've been looking at ways outside of coatings, which is our traditional bread and butter to bring value to the customer and keep them engaged with us as the partner of choice. We are going to focus on aero fleet coatings management because we believe this initiative can bring a lot of value to our customers."

Green explained that aero fleet coating management is a fleet monitoring and



New technology by AkzoNobel is capturing data from both manual inspections and drone-operated inspections.
© AkzoNobel

predictive maintenance programme that has been designed specifically for coatings and he acknowledged that predictive maintenance is becoming popular in aerospace mostly for mechanical parts, engines, landing gear and similar components. "But we are coatings company, so we are seeing how we can leverage that same concept when it comes to the coatings on the outside of the aircraft to make our products worth even more to the customer," he adds.

At AkzoNobel, they observed a shift in technology in the commercial market over the last 5 to 10 years ago. External coatings have evolved rapidly in the last decade from single stage to basecoat/clearcoat systems, extending the need to repaint some aircraft for up to ten years or even more. Despite this, aircraft still tend to be taken out of service for maintenance every six or seven years without really knowing if a repaint is needed. The new technology addresses this issue by capturing the data from both manual inspections and drone-operated inspections, creating a database of every aircraft in a fleet. The history includes details of the coatings used (e.g. single or basecoat/clearcoat coatings) along with flight path data (e.g. weather conditions etc.) which affect the integrity/longevity of the coating applied.



Leonard Buck, Marketing Manager at 8tree and AviTrader MRO editor Keith Mwanalushi at MRO Americas.



dentCHECK2 builds on the success of the already existing and widely deployed dentCHECK tool.

© 8tree

According to Green, the new system is ideally suited for fleets in excess of 100 aircraft, the inspection service is provided by experts within AkzoNobel Aerospace Coatings using a digital application. The App stores the information collected, such as dry film thickness, colour variation, gloss and general appearance, as an audit report on an iPad or tablet. The data is then fed back to a database which tracks the fleet's performance over time.

"We believe we can help our customers optimise their repaint schedules and basically extract the most value out of each paint job," Green continues.

Meanwhile, in the precision 3D measurements space and over the past decade, 8tree's dentCHECK has successfully defined a new industry category for application-specific 3D surface inspection tools. Now, with over 150 systems deployed globally among more than four-dozen customers, 8tree has launched the next-generation – dentCHECK2.

dentCHECK is a surface inspection tool for 1-click 3D dent-mapping and is recognised by all major aircraft OEMs and allows operators to create detailed SRM-compliant damage reports by the push of a button. Among other capabilities, it empowers operators of every skill-level to achieve accurate, consistent, and actionable inspection results within seconds and no special training is required, according to

Leonard Buck, Marketing Manager at 8tree.

Buck says that dentCHECK2 builds on the success of the already existing and widely deployed dentCHECK tool and it solves the same problem statement that the existing dentCHECK solution solves - while incorporating significant improvements as a result of customer feedback.

The technology was showcased for the first time at MRO Americas. "dentCHECK empowers operators across the world's leading airlines and MROs in the commercial, military, cargo and business aviation sector to map and report dents up to 90% faster and with greater accuracy and consistency. We redesigned the tool around the successfully established measurement engine of dentCHECK, while maintaining our core principles of simplicity, usability and efficiency. Some of the numerous improvements include significantly more compact form-factor, lighter weight, built-in LTE connectivity, zero setup time and a streamlined UX. Shipping of dentCHECK2 will begin in late 2023," announced Buck.

8tree has also partnered with global service providers to launch dentCHECK-as-a-service offering dent-mapping services on a job-by-job basis (OPEX) and use case examples include planned scenarios such as lease-transitions and time-sensitive AOG scenarios like hail damage.

Digitising the aircraft engine procurement process is seeing a growing

traction in the industry and Berlin-based startup Aeroji has announced that they have successfully completed the beta phase of their engine market module and have now launched their platform for aircraft engine. Based on valuable user feedback, Dimitri Martel, Co-Founder and Managing Director of Aeroji reports that the platform was significantly improved and developed during the initial phase.



Dimitri Martel, Co-Founder and Managing Director at Aeroji

Martel said: "Aeroji was born out of a difficult time for the aviation industry. As the pandemic crisis showed the importance of digital solutions for our business, we decided to act and develop a new service that will help airlines, lessors, MROs and all other aftermarket players. We are grateful to our early users for their feedback, and we are excited to present our simple and easy-to-use service to the aviation world. As the recovery from the crisis took some time, we had extended the beta until now to support our customers. And our service will continue supporting the industry in the challenging times ahead as the aviation industry ramps up"

According to Aeroji, the recent development come with several new features concentrated on the area of engine remarketing workflows to help asset sellers control the marketing channels

“Enterprises that embrace digital processes and combine them with strong levels of service and execution will ultimately win the larger share-of-wallet of the parts business.”

Erkki Brakmann, SkySelect

and gain insights as well as provide sales teams tools to manage portfolios. With the continuous focus on user experience, the team optimised the design of the interfaces and the functionalities, leaving no features behind.

While analysing at the digital landscape in the aftermarket sector, Erkki Brakmann, CEO at SkySelect - which was present at MRO Americas - says historically, the aviation supply chain has been opaque and disjointed, especially when it comes to aftermarket services. "Much of this is due to offline communication channels and disjointed processes. Digitalisation not only helps connect the dots you are aware of but also illuminates blind spots to uncover other opportunities for both suppliers and buyers alike," he notes.

Brakmann says suppliers get a better understanding of the needs of buyers and get connected to more potential sales, while buyers get additional information on the location and availability of more parts from more suppliers – "This allows both buyers and suppliers to make smarter business decisions. And not only is this information available for the present situation, but thanks to forecasting analysis it's possible to plan for any potential disruptions or bottlenecks."

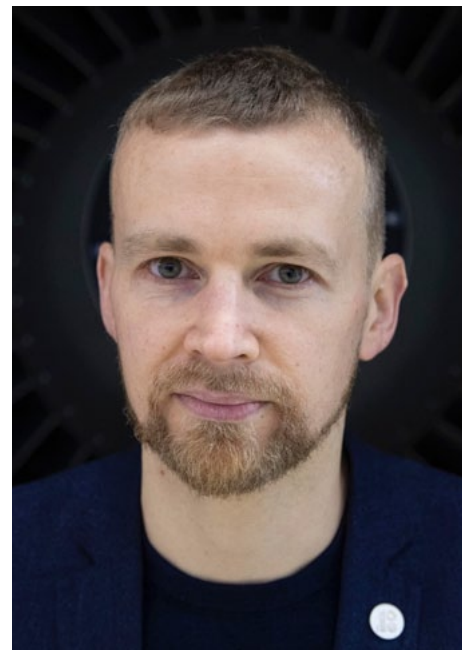
He indicates that the other piece to this puzzle is automation through AI. "Many companies in aviation are either facing a resource crunch or have a labour force which is suffering from cognitive overload. AI reduces administrative tasks while freeing up more working capital. This allows organisations to scale up or down in an agile way depending on demand trends."

Brakmann strongly believes enterprises that embrace digital processes and combine them with strong levels of service and execution will ultimately win the larger share-of-wallet of the parts business.

As such, digital processes enable the connectivity between customers and supplier networks to help provide real-time demand and supply situational awareness.

Today, Brakmann observes that much of this is still guess work resulting in robust safety stock pools [of new parts] at airline stations and overlapping stocked inventories at OEMs and distributors. "The stock-outs still persist due to unexplained surges in unplanned customer demand, while the risk of excess and obsolescence remains high for many parts for the inverse reason, often leading to write-offs and scrap parts," he says.

At SkySelect, the mission is to enable sustainable industrial growth by enabling strong digital connectivity between customers and suppliers through AI-based technology. And, providing a forum for supplier partners to sign long-term agreements with the airline and MRO buyers for exclusivity and, ultimately, sustainability.



Erkki Brakmann, CEO at SkySelect.

“Airlines are incredibly focused right now on making sure that every single seat works, and they're focused on that because the load factors are higher than I've ever seen in my 16 years in the industry.”

Tom Eskola, Panasonic Technical Services

Technical services for cabin interiors were also showcased in Atlanta, including Panasonic Technical Services (PTS) driving strategic outcomes for airlines by creating optimal flight experiences for passengers and creating efficient operations.

Tom Eskola, the Vice President and General Manager at PTS says Panasonic, from an MRO perspective, performs line maintenance and repairs of equipment at 45-line stations around the world and at airports very specifically supporting the customers that have purchased Panasonic equipment. There are also 6 separate repair centres globally.

“When we speak of equipment, it is seatback monitors, power systems in the seats for passengers to be able to use as well as the interface between mobile devices and the seatback monitors and displays and also the in-flight Wi-Fi on



Tom Eskola, Vice President and General Manager at Panasonic Technical Services

board,” states Eskola.

As an OEM provider of those systems Panasonic is also able to maintain them and provide spares and support for those systems over time. “We have about a thousand people within the technical services group, and that is really our sole mission to make sure that every time an airplane takes off with our system, it works properly, and every seat is working.”

Eskola says if there's a deferral or a defect that needs to be remedied, then the technical services team then performs the maintenance support. “We are there on the

flight line, meeting the aircraft with the right part at the right time to be able to rectify the situation. Airlines are incredibly focused right now on making sure that every single seat works, and they're focused on that because the load factors are higher than I've ever seen in my 16 years in the industry.”

Panasonic too have felt the pinch of parts availability problems affecting the industry. Eskola acknowledges that it has been a big concern for the entire industry in recent years, but he believes Panasonic has weathered the storm and are coming out of it – “There's still some shortages of chips and supplies that are coming out of the industry and we have some suppliers that are more problematic than others. We do have partners and suppliers that provide us with some of those LRUs [Line Replaceable Units] and we are handling them better now than we were last year, and we definitely see recovery this year.”

PTS are also focusing on using performance tools on and off-wing, and scheduling cabin checks to detect any system anomalies, its team finds and corrects most defects that have gone unreported.

“Our experience is being fed right back into the design process for not just the hardware but the software stack about what information is relevant, what needs to come off the platform and how,” Eskola concludes.



Panasonic too have felt the pinch of parts availability problems affecting the industry. © Panasonic Technical Services



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As more engines come back online, there will be increasing bottlenecks for MRO services.
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Pent up demand amplifies return of engine lease market

Demand for engine leasing and trading has bounced back, but the industry will need to keep a close watch on asset availability and hangar repair slot accessibility.

By Keith Mwanalushi

Analysts at aviation advisory firm IBA recently indicated that as more engines come back online, there will be increasing bottlenecks for MRO services caused by engine shop visits that were deferred during the pandemic but now require a performance restoration due to the increased passenger demand.

Wasim Akhtar, Director of Engines at AJW Group observes that in line with the surging demand for travel, the aircraft engine leasing market is undergoing immense growth. "Several airlines are choosing to lease rather than purchase engines. This is done as a way of avoiding the high capital costs associated with buying engines and can provide more flexibility in terms of fleet and risk management. With the pent-up

demand for engines, the traditional dry leasing routines have come back, and



Wasim Akhtar, Director of Engines, AJW Aviation

AJW is seeing the rates going back to 70 percent of pre-pandemic levels."

Akhtar notes that competition in the engine leasing market is fierce, among large and smaller players alike. "It is important to note that as the leasing market continues to grow, there is an increase in the number of engines needing to be overhauled or retired. This is having a significant impact on the demand for used engine parts, which is impacting the MRO market as shops have low capacity and long turnaround times due to the ongoing repercussions of Covid 19," he states.

AJW see the demand for the current technology narrowbody engines to be positive for the coming decade as many CFMs and V2500



Seval MROs are seeing exponential increases in parts and maintenance costs.

© HAECO Americas

engines are yet to go through their first shop visit and as such the demand for leasing, spare parts, and MRO capabilities is sustainable.

At Willis Lease Finance Corporation (WLFC) they are seeing consistent demand across all airline segments and for all engine types, including widebody, narrowbody, and regional. Craig W. Welsh, SVP and Chief Commercial Officer, Americas and Asia says green time

engines should continue to effectively support the market as operators look to minimise reinvesting in current technology engines as they transition their fleets over to newer more fuel-efficient aircraft, powered by new technology engines – “However, we are seeing more airlines planning to keep a portion of their current technology equipment as reliability is more predictable and supply of new aircraft



Craig W. Welsh, SVP and Chief Commercial Officer, Americas and Asia at WLFC

“We are seeing more airlines planning to keep a portion of their current technology equipment as reliability is more predictable and supply of new aircraft continues to be constrained.”

Craig W. Welsh, Willis Lease Finance Corporation

continues to be constrained. This could push the market to a threshold in which green time engine demand will outstrip supply,” he anticipates.



Marc Pierpoint, SVP, Head of Trading at Investments at WLFC

Marc Pierpoint, SVP, Head of Trading at Investments at WLFC adds that both trading and leasing demand is strong for all narrowbody engine types currently. He says: "We expect this to remain over the medium-term especially while new aircraft deliveries are hampered by delays due to supply chain issues and MRO slot availability remains under pressure." Additionally, Al Landolfi, VP and General Manager, Willis Aeronautical Services, Inc mentions that logistic and supply chain pricing has greatly decreased since the pandemic allowing them to provide some additional flexibility and cost savings to customers. "However, we still feel the pain of prolonged delays with piece part repair and with new spare parts delivery," says Landolfi.

Before the global pandemic, Akhtar recalls that the demand for aircraft engines exceeded supply, resulting in costs related to the sale and leasing of engines soaring. "Moving on two years, airlines are still financially vulnerable due to the ongoing recovery of flight

schedules. Consequently, the demand for green time engines exists for the foreseeable future," he notes.

Also, having a good supply of cheaper, serviceable engines with favourable lease rates now available, the trend among airlines is to save costs by delaying the replacement or restoration of ageing engines and opting instead for the green time engine leasing opportunities that are available.

Demand for procurement of higher thrust CFM56-5B and -7B engines has been rising strongly over the past two years, with demand for part-outs, rebuilds and continued-time lease candidates also increasing steadily since early 2021, suggests David Blackburn, Senior Vice President – Asset Leasing and Trading at PTS Aviation (a StandardAero company).

Blackburn anticipates that the CFM56-5B/-7B demand will continue to grow through 2025, especially as MRO shops diligently work to hire experienced and knowledgeable talent, increase shop visit throughput, and create new processes to reduce excessive turn-times.

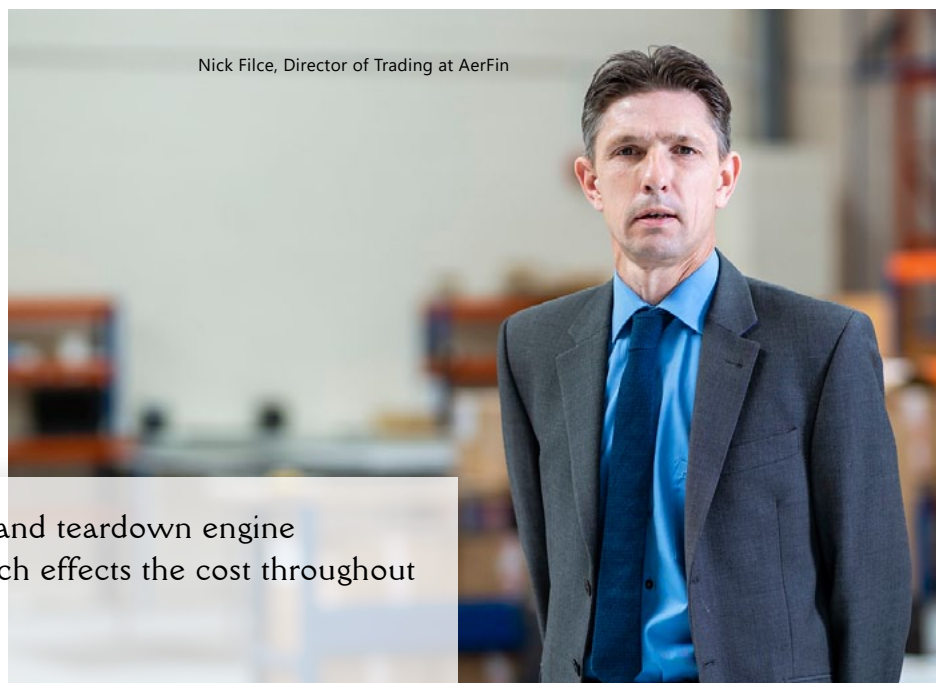
PTS Aviation believe the increase in airline operational activity is driving the procurement, lease and utilisation of higher-thrust green time CFM56-5B/-7B engines, which is in turn creating a large



Al Landolfi, VP and General Manager, Willis Aeronautical Services

pull (or vacuum) in this narrowbody engine sector – "Asset pricing – from individual internal and external parts to entire serviceable engines – is steadily increasing, and is forecast to continue to increase through 2025," Blackburn states.

Meanwhile, at AerFin, they too are seeing a significant demand for both the engine leasing and trading pool, along with the engine components division for materials. Nick Filce, Director of Trading



Nick Filce, Director of Trading at AerFin

“Engine pricing for lease, sale and teardown engine candidates are increasing which effects the cost throughout the supply chain.”

Nick Filce, AerFin



The CFM56-7B demand will continue to grow through 2025.

© StandardAero

at AerFin confirms that this growth has continued through 2022 and 2023 with activity back to pre-pandemic levels and rates, especially good quality V2500 Select Engines, CFM56-5B TI / PIP and CFM56-7B TI/E engines. "We expect this to continue due to the increase in supply chain issues effecting MRO slots and operators requiring seed engines to cover shop visits," he says.

IBA data indicates that lease rates have nearly recovered to pre-pandemic levels for the CFM56-7B which were at US\$73,000 pm in 2019 and are now at US\$72,000 pm in 2023.

Delays in deliveries of new generation aircraft like the Neo and MAX have led to heightened demand for current generation assets with mid-life aircraft also seeing extended operations. "The lessor community are reporting activity on airframes they were expecting to be retired and are now being extended or

re-entering service," comments Filce. He adds that the increased TAT issues faced by MROs are making it difficult to secure repair slots and putting a strain on the engines available to lease and trade – "Aircraft utilisation is returning at such a rapid rate the availability will continue to be an issue in the short to medium term," he observes.

Filce suggests that green time engines will continue to supply the market effectively, as the availability is very strong. "Engine owners are rebuilding and repairing engines for green time, such as hospital servicing, module swaps etc. which ultimately have an impact on USM since these would have previously been torn down for their LLP's, LRU's and piece parts." He adds that engines that were originally being torn down in house for the components division were now being shopped for return to service – "Engine pricing for lease, sale and teardown

engine candidates are increasing which effects the cost throughout the supply chain."

By all indications, demand for green time solutions for the V2500, CFM56-5B, and CFM56-7B engines will remain strong for the next several years. At Aero Capital Solutions (ACS) they expect sustained and robust demand for mid-life narrowbody aircraft in the mid-term, which is their area of focus and investment.

Ryan Anderson, VP - Commercial, Americas describes several underlying factors driving operator demand for mid-life 737NG's and A320 ceo family aircraft and the respective engines that power them. He indicates issues such as MRO capacity: "Many operators delayed engine shop visits and heavy maintenance during the pandemic. In parallel, MRO workforces were reduced, and many lost their most senior technicians and engineers to retirement. As maintenance



Ryan Anderson, VP - Commercial, Americas
at Aero Capital Solutions

demand has accelerated to meet passenger demand, MRO slots are scarce, and turn-around-times are considerably longer than their pre-pandemic standards."

Also, highlighted, Anderson commented on the exponential increases in parts and maintenance costs: "The clear inflation in MRO costs for engines naturally makes alternatives such as existing green time engines more attractive to bridge to new aircraft or avoid unnecessary investment into retiring aircraft." Other factors driving demand include passenger and cargo demand and new equipment delays and the lack of performance.

One area that ACS has seen grow stronger is formal or informal thrust programmes whereby the lessor becomes responsible for delivering green time engines to the operator on a defined schedule aligned to the airline's demand forecast. Anderson explains: "Engines are delivered based on pre-agreed economic terms and technical requirements. They can be used to replace run-out engines as a fleet approaches end-of-life or to meet an operator's engine spares requirement in a way that optimises their cash position."

ACS has traditionally made serviceable continued-time engines available for sale

to customers who wish to completely forego a shop visit, including buy-back of the customer's unserviceable engine. "The net of the two transactions is the fee the customer pays to acquire the engine green time faster and more economically than sending their engine through the shop for a performance restoration," Anderson continues.

ACS believes that these use cases will persist and that there remains a healthy supply of green time V2500, CFM56-5B and CFM56-7B engines available to provide operators with a choice of creative solutions to minimise maintenance cost on ageing assets while acquiring the engine run-time they require currently.

Joe Hussar, Executive Vice President – Head of Portfolio at Engine Lease Finance Corporation, says the company is seeing the highest demand for secondary market leases since before the pandemic. "On the trading side we are seeing speculators returning to the market looking for green time engines to lease with an acquisition strategy to either break the engine for part-out once all of the maintenance life has been consumed or overhaul and lease

onward for another maintenance cycle." Hussar explains that this is indicative of the general mood in the market and reckons it will be sustainable throughout 2023 and beyond despite the many challenges facing the world economy at present.

With airlines rebuilding their flying schedules, Hussar agrees that green time engines will continue to supply the market – "green time engines will be critical for airlines to get capacity in service considering the lack of available slots across the world MRO capacity. Demand has been strong in both passenger and cargo sectors as well as from lessors that are under pressure to deliver repositioned airframes."

With indications pointing to more engines coming back online and the challenges this will create for MRO services, and as the IBA forecast suggests, there will be some turbulence ahead for the engine market. Previously deferred shop visits will likely result in an increased backlog of demand, and turnaround time will have to be increased due to a lack of supply and staff to support.



Joe Hussar, Executive Vice President – Head of Portfolio at Engine Lease Finance Corporation



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“One of the key challenges for us is to explore, test and validate if technologies are relevant to our products and services so that we can leverage to provide better solutions to our customers and create values for the market.”

Alex Chen, HAECO Group

Market changes see shift towards digital approach for aftermarket

Technology plays an important role in improving efficiencies.
© AFI KLM E&A

The shift to digital is gearing up in the aviation aftermarket sectors including an increasing focus on leveraging technologies to achieve direct gains on operational cost and efficiency.

By Keith Mwanalushi

Digitalisation in the MRO and aftermarket sector has been painfully slow but there is a growing momentum and industry desire to see increased implementation, however, the aviation industry faces several obstacles, one of which is its heavy reliance on manual processes for data exchange and interactions. Alex Chen, HAECO Group General Manager, Digital - feels this is primarily due to the numerous communication channels among various stakeholders involved in aftermarket services.

Additionally, he says data exchanges are limited by outdated and fragmented systems, resulting in inadequate visibility of the aircraft and its components throughout the end-to-end process. “However, these inefficiencies can be addressed through digitalisation of customer interactions, centralisation of data sources on a single platform, and enhanced data visibility for



Alex Chen, HAECO Group General Manager, Digital

both customers and internal teams,” Chen states.

HAECO recently developed a Minimum Viable Product (MVP) of its customer gateway digital product, which facilitates more efficient and cost-effective orchestration of airframe MRO services by connecting people, processes, and data.

Chen believes the first step is to leverage digital products to drive efficiency, operational performance, and value propositions to customers in HAECO’s service and product offers – “This will bring direct gains on operational cost and efficiency as well as to our customers. These digital processes may not land direct revenue growth but will lead to efficiency gains and capacity release for better asset utilisation,” he explains.

In addition, HAECO plan is to start their digital products on the data side. “We plan to connect our segments and entities data

together as well as connecting to external data from customers and suppliers.” Chen indicates that this will further unlock capability to better understand the market and customers, so that they are able to answer customer needs and tackle new opportunities more intelligently and effectively – “This will potentially create new revenue streams on top of our current business portfolios,” he says.

Digitisation can certainly offer a range of solutions to overcome the challenges faced by the aviation industry in aftermarket services. Craig Macpherson, Chief Information Officer at AJW Aviation points out that the use of digital technologies like predictive maintenance, data analytics, and artificial intelligence, for example, can help to identify issues early on and prevent unplanned maintenance tasks. “This increases aircraft reliability and reduces downtime for maintenance, leading to cost savings and increased efficiency,” he notes.

Digital transformation helps to streamline the supply chain with tools such as dynamic pricing models, procurement forecasting, blockchain, and RFID (radio frequency identification) tracking. Macpherson says by using these tools at the MRO facility at AJW



Leveraging digital technologies can help the industry overcome common time-related challenges.

© AJW



Craig Macpherson, CIO at AJW Aviation

Technique in Montreal, they enable remote diagnostics and repair, reducing the need for costly onsite visits and improving the speed of repairs to ensure timely and accurate delivery of spare parts.

AJW have witnessed the aftermarket service industry undergo a transformation in recent years, with digital processes playing a key role in enabling businesses to deliver services more efficiently and effectively and growing business revenue.

Macpherson highlights that one of the most significant developments has been predictive maintenance, which allows businesses to predict equipment failures before they occur, schedule maintenance before costly breakdowns, and reduce downtime leading to increased revenue and customer satisfaction. “By using remote monitoring tools, we keep track of equipment performance and identify issues before they become significant problems, thereby reducing downtime and maintenance costs.”

He adds by improving the customer

experience through digital transformation, businesses can optimise their services and operations. “Leveraging digital technologies is crucial to remain competitive in the aftermarket services industry,” Macpherson stresses.

Kevin Wall, Chief Commercial Officer at APOC Aviation comments saying the sale and integration of digital and software packages has developed to become a significant market. “When we think of aftermarket, we traditionally think of parts and labour, however the provision of digital tools has become ever more lucrative as a business segment in itself,” he states.

Wall feels digitisation is central to transformative business models that deliver enhanced service offerings, which are fast becoming expected as the new normal. He says increased value-added through consistent and efficient delivery deepens relationships and ultimately expands revenue. “Margins can be increased too, as cost of labour and TATs

“When we think of aftermarket, we traditionally think of parts and labour, however the provision of digital tools has become ever more lucrative as a business segment in itself.”

Kevin Wall, APOC Aviation

reduce. Inventory can be better managed, freeing up valuable capital for further investment. All aftermarket providers – aircraft maintenance, parts supply chain, logistics – need to embrace new technology as it will define our industry in the future.”

In addition to preventative maintenance, Wall mentions automation as another area where great advantages are being seen, ranging from robotic inspection to process automation, he feels the industry can benefit from the use of AI driven tools to increase efficiency in parts ordering and handling, and minimise the effects of continued labour shortages in the sector.

At APOC, the IT system shows real-time stock levels, actual live requirements backed up with minimum or maximum stock level control. “As we continue to invest in narrowbody airframes, we use historic data to predict future

requirements and ensure the typical units are in stock and ready to go, in line with our customers’ requirements,” he says.

Abdol Moabery, Chief Executive at GA Telesis argues that the digital process is not the driver for generating revenue from aftermarket services – “It’s quite the opposite. The oxygen that feeds the aviation ecosystem are the airlines, and the goal should not be to increase revenue at their peril. Our goal must be to reduce their cost, and in order to do that, we need to create tools to reduce their operating, maintenance, and parts costs.”

Moabery states that the goal must be to create and permanently install a massive amount of efficiencies into the airlines’ systems that enable them to consume fewer parts and maintenance and therefore reduce cost and potentially reduce revenue for us all – “Our profits will increase from the efficiencies we will have to build.”

He feels that OEMs are leading the way in the aftermarket, but they operate in a silo, so airlines and industry participants cannot gain the full benefit. “I have seen some robust technology, but what good is it if it is only visible to a few? We need to create an open network, feed off one another, and invite the crowd into the discussion and together we can solve a lot more than we can alone,” Moabery states.

Interestingly, for the last 23 years, San Diego-based Component Control has been on a mission to digitise the aviation aftermarket. Daniel Tautges, Senior Vice President says there are several core components within the ERP that digitise and records workflow documents, processes, traceability, contracts, purchase orders, inventory, and sales. “Several new mobile and web-based applications tailored for receiving, warehouse, sales, and work packages are also targeted at



Kevin C. Wall, Chief Commercial Officer – APOC Aviation

further digitisation and optimisation of resources,” he tells.

Tautges points to several benefits of digital processes that will grow aftermarket services revenue including the optimisation of human resources, as well as improved, repeatable and enforced workflows. He mentions that the elimination of paper-process and “swivel



Abdol Moabery, Chief Executive at GA Telesis



Daniel Tautges, SVP at Component Control

Recently, Honeywell and Lufthansa Technik enhanced their collaboration on the digital platform AVIATAR.
© Lufthansa Technik



chair" data entry can be achieved across the organisation allowing technicians, sales, warehouse to enter data once and leverage to provide KPI metrics for process improvements, faster response times, better scheduling, higher efficiency of supply chain and reduced cost of materials. He says all these factors will provide greater to line and bottom-line revenues.

Tautges feels there are still issues around digital adoption and converting to a true paperless business in the market which is rooted in the comfort of the current paper processes. "Change is never easy in a mature business and several key, and in high demand roles, are reluctant to change but change is coming as we are continuing to build out these solutions."

At Ramco Systems, they believe empowering mechanics through mobile based solutions enable them to

access technical documents, real-time troubleshooting, and request parts, tools and thereby increasing direct labour utilisation. "We have seen cases where



Saravanan Rajarajan, Director-Solution Consulting at Ramco Systems

airframe MROs takes two weeks to process the customer work package received in pdf format before it can be handed over to production. By leveraging the automated pdf task card processing, the duration to process the work package can be reduced by at least 70 percent," observes Saravanan Rajarajan, Director -Solution Consulting at Ramco Systems.

The confluence of AI/ML, advanced analytics, mobile, and 5G technologies will be game changers that enable MROs to achieve higher operational efficiencies. Rajarajan says integrating ERP systems, EFBs, mobile and wearable technologies, and embedded IoT and external systems are seamlessly interlinked.

"As organisations accumulate a wealth of structured and unstructured data and embrace these technological advancements, MROs are well-poised to operate efficiently with their resources," he adds.

Challenges with aftermarket services

At Ramco, they've highlighted the convergence of digital initiatives in the following areas that are helping to overcome the challenges in aftermarket services.

Digitalisation of core operations: The rapid progress and maturity of mobile technologies and digital content availability of technical documentation, including manuals and job cards, has made shop floor digitisation a reality. Mobility applications are becoming mainstream for MRO software and the use of mobility to access technical documents, record time, recording findings, process requests for parts, and engineering advice facilitates real-time system usage and reporting. This has an exponential impact on improving productive hours, data accuracy, and data insights.

Automation of manual and repetitive tasks: Aviation maintenance processes generate a wealth of data about the aircraft engine defects, parts consumed, labour hours, and elapsed time to carry out the repair and overhaul procedure. Accumulated over time, this data can become a goldmine of information to gain insights. With its AI/ML capabilities, Ramco derives insights into all key processes such as work order planning, production planning and scheduling, optimised for target objectives of cost or TAT optimisation or even both.

Integrated eco-system: There is much interdependence in the industry where operators/OEMs/MROs/maintenance departments must work seamlessly. MRO Software needs to be interoperable, integration-ready, deployable in hybrid models, and facilitate the management of an integrated automated business process that transcends organisational boundaries.

According to Chen, HAECO see challenges in this highly regulated industry with a generally conservative approach to adopting new technologies and the speed of adoption may not match the expected pace. However, he sees a common priority in the whole eco-system that OEMs, operators and MROs must drive digital



Leveraging digital technologies can help the industry overcome common time-related challenges.
© AJW

transformation, build digital products and pilot new technologies in their own ways. "One of the key challenges for us is to explore, test and validate if technologies are relevant to our products and services so that we can leverage to provide better solutions to our customers and create values for the market. We continue to pursue to further enhance HAECO's technology stack as the foundation to serve our customers," Chen elaborates.

A keen observation at AJW is that several companies have highly trusted systems and processes in place, and this can make digital integration difficult as the systems being used are often not based on the latest technologies. Macpherson from AJW says were these businesses to adopt the innovative technologies, it would require a change in their already well-established procedures e.g., a shift from the use of email to self-service tools.

Macpherson states: "An issue relating to self-service tools is that the customer is required to enter the data. As this may be viewed as increasing employee

workload it makes adoption a challenge, especially when everyone is offering their own portal. As such, there would need to be a compelling case and benefit to them, to encourage an operational shift away from the legacy systems within their organisations."

Data security is a further roadblock in the adoption of digital technologies and at AJW they highlight certain sectors of the industry that handle sensitive data, including customer information, financial data, and flight data. "Ensuring the security of this data is crucial to maintaining the trust of customers and stakeholders. Cybersecurity threats are constantly evolving, and companies are acutely aware of the need to prevent data breaches," Macpherson adds.

Lastly, the aviation industry is known for its extreme regulatory and compliance standards, and new digital technologies may require regulatory approvals before implementation, and this can be time-consuming and costly.

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Q & A

In the hot seat...

Andy Wheeler
VP and
Managing Director
AMETEK MRO AEM

What attracted you to this industry?

Growing up, I was always interested in engineering and the practical application of science. Pursuing an apprenticeship in aerospace engineering seemed like a natural fit, and I saw it as an opportunity to carve out an exciting career with good earning potential. As an avionics engineer, I was able to develop a strong technical foundation and progress into becoming more of a generalist. I found the diversity of the aerospace industry and its constant innovation kept me engaged, and I was able to cover multiple disciplines both technical and commercial, which allowed me to grow with the business. Joining AEM, with multiple sites and multiple product groups, provided me with the opportunity to develop skills and experience in various disciplines, including support services. It now gives me great pleasure to see our people grow and develop to find a particular niche where they can excel.

What does a typical day involve in your role?

As DVP and Managing Director my typical day involves setting the business strategy and monitoring its execution. I am an early riser, and I usually start my day at 5 am. After a brisk walk with my dogs and a browse of the news, I review overnight



Andy Wheeler, VP and Managing Director, AMETEK MRO AEM

emails in readiness for the day ahead. My daily routine often includes a round-up with the senior production leads across the three AEM sites. I find this a great use of my time as it allows us to catch up and keep abreast of the general running of the sites in one swift and concise call. In addition to my daily calls, I have frequent cadence calls and meetings focused on the efficient running of the business and regular communications with my peers across the AMETEK MRO group to align our overall divisional strategies. I am a people person and enjoy building and maintaining relationships with customers and colleagues. I try to spend

time walking the floor and chatting with the team, who are extremely passionate about their work. This is reflective in the overall quality of our products and services, which was confirmed by a recent 'Voice of the Customer' survey.

What are the key areas of activity at AMETEK MRO AEM?

AEM has three sites in the UK that offer diverse product offerings across the company, including actuation, aviation safety, avionics, landing systems, power generation, and thermal management. At our Stansted Airport facility, we repair and



All photos © AMETEK MRO AEM

overhaul electronics, power generation, escape slides and rafts, fire extinguishers and oxygen systems. At our Luton Airport facility, we manufacture and refurbish Aeromedic first aid and medical kits. We also manufacture aviation windings including armatures, rotors, and stators. At our Ramsgate plant, we repair and overhaul hydraulics, landing gear, and heat exchangers. In support of these services, we have full machining and plating capabilities, including NDT.

How is the business responding to the post-pandemic environment?

The business is on a clear growth trajectory, with products and services in high demand. We are focused on providing the very highest levels of support, which our customers have come to expect from us. Alongside concentrating on our existing capabilities within avionics, aviation safety, actuation, landing gear, power generation, and thermal management, we are working on developing new capabilities within these key product areas.

How is the demand for your landing gear services?

Demand for our landing gear services is strong, with several long-term agreements in place and new customers coming

forward with requests for immediate support. There is consistent demand for loan gears to minimise downtime, and we encourage operators to plan landing gear events way in advance.

Tell us about AMETEK's recent sustainability award?

AMETEK MRO AEM recently won the Elizabeth R Varet Sustainability Award, which is named after a retired member of the board. This award highlights the company's focus on sustainable business practices aimed at reducing environmental impact. The team conducted extensive research into viable solutions for the management and treatment of hazardous

waste. They concluded that investing in the wastewater recycling process would be the best long-term solution. The project resulted in \$2.6 million cost avoidance to date compared to disposing of hazardous waste offshore. Additionally, it has helped reduce hazardous waste by 192 tonnes and recycle over 47,000 gallons of water annually. This award showcases AMETEK MRO AEM's commitment to promoting sustainable business practices and reducing its environmental impact.

What are you most looking forward to in the coming months?

In the coming months, AMETEK MRO AEM's focus on our people and their development takes centre stage. The company also has new recruits, trainees, and apprentices to manage, and succession planning is paramount to enhancing our high-performing units. As a team, we are committed to further developing our culture, driving charitable and community commitments, and raising funds for chosen charities. AMETEK MRO AEM is also working on developing new capabilities within key product areas while continuing to provide the highest levels of customer support that we can. AMETEK MRO is expanding fast, products and services across the group are in high demand to meet the challenges of today's airline operators. We are all focused on maintaining this momentum and balancing our success with that of our customers worldwide.



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»»»» → *on the move*



Jérôme Morhet

CFM International has appointed **Jérôme Morhet** as Executive Vice President (EVP), replacing **Florence Minisclou**, who was recently named executive vice president, Commercial Engines Division, Safran Aircraft Engines. As part of the CFM executive team, Morhet is responsible for overseeing the CFM56 and LEAP programmes, working closely with his counterparts at GE Aerospace, **Karl Sheldon** for the LEAP engine and **Jacey Welsh** for the CFM56 product line, to monitor engineering, development, production and services activities for these programmes. Morhet also serves as Vice President of CFM programmes for Safran Aircraft Engines. He brings strong international and customer-focused experience, as well as a comprehensive strategic vision to his role at CFM. A graduate of the Ecole Polytechnique de Louvain (Belgium), he began his career in 1997 as a design engineer at Safran Aero Boosters before joining the MRO sales team of Safran Aircraft Engines. In 2002, he moved to the Safran Aero Boosters Commercial and Programmes Department and became GE Programme Director in 2007. In 2011, he became COO of Safran Oil Systems in Fort Myers, Florida. Morhet joined Safran Test Cells in 2012 as head of sales, then head of operations. In 2015, he was appointed CEO of the US subsidiary of Safran Test Cells in Minneapolis, Minnesota. At the end of 2017, he took over the management of strategic development projects for Safran Aero Boosters and initiated the “Safran Blades” compressor blade factory project.

Avionix Management Limited (Avionix), a Dublin-based aircraft lessor and aircraft portfolio servicer owned by institutional investors advised by J.P. Morgan Global Alternatives’ Global Transportation Group (GTG), has named **Martin Gallagher** as Managing Director, Technical & Asset Management, and **David Ronan** as Head of Finance & Operations. They join Aisling McCarthy, who was appointed Managing Director, Commercial Management, in June 2022 having worked with the platform in an advisory capacity since April 2021. Over more than 20 years McCarthy has held senior commercial positions with Pembroke Capital, AWAS, Stratos, AMCK

Aviation and Castlelake, and provided independent advisory services to Chinese lessors. Gallagher has over 30 years’ experience in the aviation sector, having started his career in Shannon Aerospace. He held senior roles at RBS, MCAP, NAC and AWAS before joining the initial eight-person team to set up Goshawk in 2016. He was closely involved in the growth of that business from start-up to a fleet of 180 + aircraft across 65 global customers with a portfolio value of US\$8.1 billion and managed a 12-person team supporting all technical aspects of aircraft leasing including SLBs, portfolio acquisition and disposal, and asset management and transitions. Ronan began his career with RBS Aviation Capital in 2008 in the Business Analysis team and was a project lead in the disposal of RBS Aviation to SMBC Bank. In 2014 he joined FPG Amentum to manage the Finance, IT and Lease Operations teams. He then joined AMCK Aviation to build and lead the Corporate Finance & Treasury function, where over seven years he built teams in Dublin and Tokyo and was responsible for raising over US\$3 billion (£2.4 billion) via various corporate and secured facilities.



Steve Lightstone

Aircraft maintenance software provider Rusada has announced the appointment of **Steve Lightstone** as Director of Sales & Business Development. Lightstone has a wealth of experience in the aviation software industry having worked with airline maintenance and engineering operations around the world over the course of his career. In his previous role, Lightstone served as Vice President of Sales at ATP over a seven-year period. There he developed the company’s ChronicX© software business to become the dominant market leader and supported various SpotLight© clients at major aircraft OEMs. Prior to ATP, Lightstone spent over 20 years in sales, marketing and sales leadership roles helping businesses in various markets improve operations through innovative technology solutions. Based out of Rusada’s new Toronto office, Lightstone will seek to expand the use of the company’s ENVISION software in both Canada and the U.S., as part of its North American sales and business development team.



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