MRO BUSINESS TODAY

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Rolls-Royce successfully runs UltraFan technology demonstrator to maximum power

Rolls-Royce successfully tested the UltraFan Technology Demonstrator at its maximum power at a UK facility in Derby powered by 100% SAF.

Rolls-Royce celebrated the successful function of the UltraFan Technology Demonstrator at its maximum power at a UK facility in Derby. The examination took place to understand the 100% SAF usage. The success of this work is the result of years of hard work put upfront by the UK Government through the Aerospace Technology Institute (ATI), Innovate UK, the EU's Clean Sky programs, LuFo, and the State of Brandenburg in Germany.

The UltraFan is successfully examined this year for the first time and since then its power has been gradually increasing. The idea of an UltraFan Technology Demonstrator came into the public eye in 2014, no other company has produced a geared design in size compared to this as it is designed to that within 4,200 Rolls-Royce Civil large engines approximately as it contains an unmatchable geared design.

This accomplishment demonstrates our continued faith in the suite of technologies created as part of the UltraFan initiative. Since UltraFan outperforms our Trent XWB, the most efficient large aero-engine in operation today, by 10%, confirming this capability is a significant step towards increasing the efficiency of present and future aero-engines. That represents a 25% increase in efficiency overall from the introduction of the first Trent engine.

The new narrowbody and widebody aircraft predicted for the 2030s may be powered by UltraFan's scalable technology, which can provide thrust between ~25,000 and 110,000 pounds.

Tufan Erginbilgic, CEO, Rolls-Royce plc, said, "Hitting full power with our UltraFan demonstrator sends a strong message that Rolls-Royce is at the cutting-edge of innovation and technology, leading the way in the transition to more efficient and sustainable aviation. This fantastic milestone puts us in a strong position to support the plans of our customers as they develop the next generation of super-efficient aircraft."

At present, Rolls-Royce have found several innovations that may be used to present the Trent engines as part of the UltraFan development programme. This will give their customers even more availability, dependability, and efficiency.

Simon Burr, Group Director of Engineering, Technology and Safety, Rolls-Royce plc, said, "We estimate that to reach Net Zero flying by 2050, a combination of highly-efficient, latest-generation gas turbines such as UltraFan operating on 100% SAF are likely to contribute around 80% of the total solution, which is why today's announcement is such an important milestone for Rolls-Royce and the wider industry."

The results derived from this will contribute in our understanding of its functions and collection of data which would be used to analyse the functions by the experts.

Air Cairo announces service contract for CFM LEAP-1A engines

The LEAP International and Air Cairo deal includes 14 A320neo aircraft that are currently in service and their LEAP-1A engines.

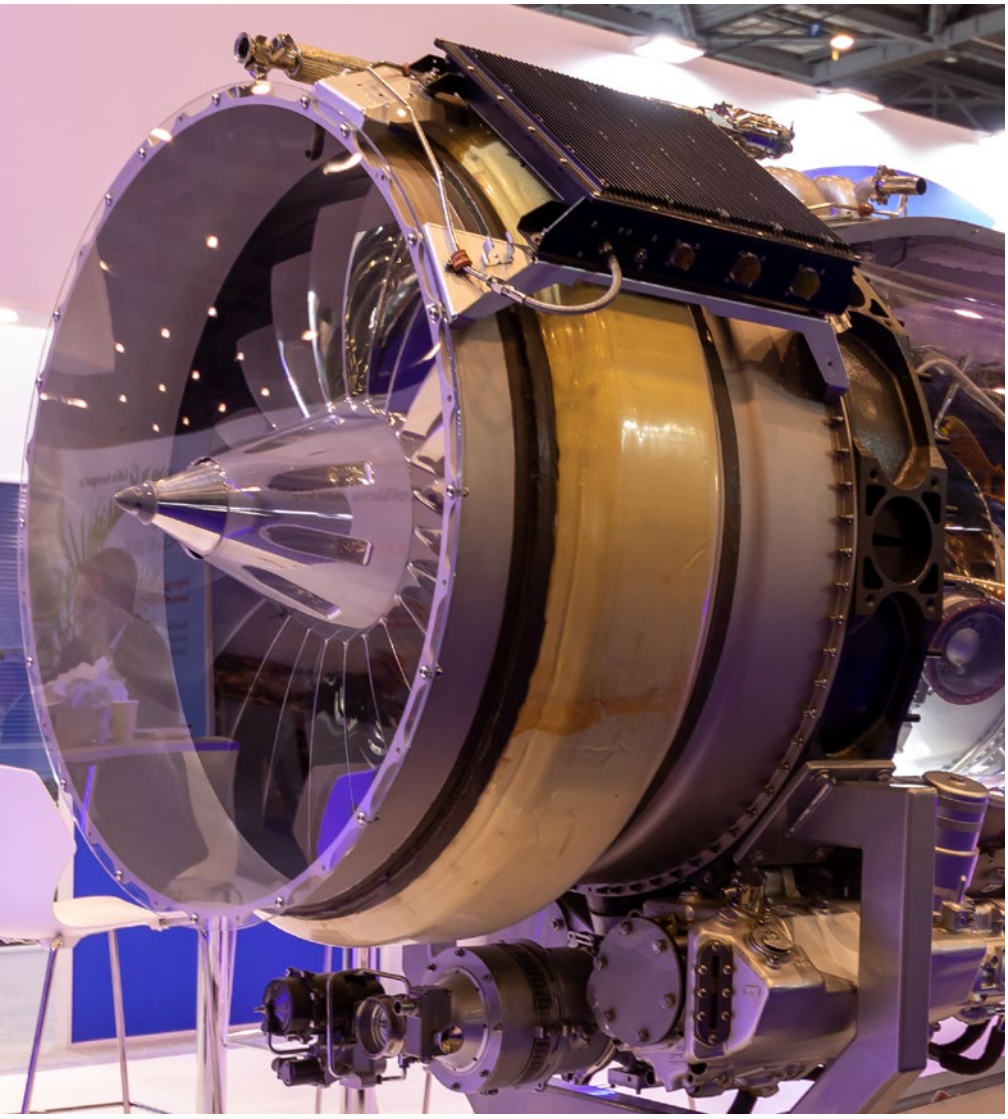
A multi-year non-exclusive services agreement was inked by Egyptair subsidiary Air Cairo and CFM International to cover the shop visits of 28 LEAP engines that power the airline's 14 Airbus A320neo aircraft. When Air Cairo initially ordered CFM56-5B engines in 2005 to power six A320ceo family aircraft, the airline became a CFM customer. Eight of these aircraft are currently in service with the airline.

"Expanding our relationship with CFM is a key milestone of our development strategy," said Hussein Sherif Fahmi, Chairman & CEO, Air Cairo. "This agreement reflects our commitment to innovation, customer satisfaction, and sustainable air travel through the efficiency of the LEAP engine," he further added.

The advanced CFM LEAP engine family provides 15 to 20 percent better fuel consumption and lower CO2 emissions, as well as a significant improvement in noise compared to previous generation engines. Since its entry into service in 2016, the LEAP engine has allowed our customers to save more than 28 million tons of CO2*.

"We are honored by Air Cairo's renewed trust in our company. We remain committed to providing them with the highest standards of support.," said Gaël Méheust, President & CEO, CFM International. "This new agreement gives Air Cairo the flexibility and choice of where to service their LEAP engines within the open global MRO ecosystem we have been building for our customers," he further added.

Air Cairo, known for its authenticity, affordability, and consistent accessibility, has successfully transported over 20 million passengers. The number has steadily increased in recent years, thanks to the dedicated efforts of its motivated employees. Air Cairo has successfully passed the IATA Operational Safety Audit Program (IOSA) and has been confirmed as a SAFA-compliant airline (European Safety Assessment of Foreign Airlines) by EASA. Air Cairo is also a member of the EASA/ECDC, ICAO, and IATA.



StandardAero conducts first HTF7000 check at UK Facility

The 4800-hour inspection on an HTF7350 engine by StandardAero provides operators in the EMEA region with an additional facility option for keeping their engines in the region for minor level maintenance.

StandardAero has successfully completed its inaugural Honeywell HTF7000 minor level maintenance event at its Gosport, UK Regional Turbine Center (RTC). This 4800-hour inspection on an HTF7350 engine provides operators in the EMEA region with an additional facility option for keeping their engines in the region for minor level maintenance. With the completion of the HTF7000 maintenance event in the UK, operators in the EMEA region now have a facility for minor level maintenance, complementing the regional Mobile Service Team (MST) support. StandardAero, drawing on its 15 years of experience in maintenance and repair of the HTF7000 engine, aims to enhance support capabilities for operators in the region.

"HTF7000 operators in the EMEA region now have a facility option to keep their engine in region for minor level maintenance, in addition to regional Mobile Service Team support, backed by StandardAero's expertise built over 15 years of supporting maintenance and repair of the engine," said Lisa Cooper, UK Regional Turbine Center (RTC) and Mobile Service Team (MST) Program Manager,

StandardAero.Teams from StandardAero Business Aviation in Augusta, Georgia, MST technicians from Rijen, Netherlands, and the Gosport team collaborated to launch HTF7000 operations at the UK facility. The cooperation between these teams underscores the commitment to providing comprehensive and efficient support.

"I'm confident the UK RTC will raise the standard of HTF7000 engine support for the region's customers now that they are fully capable of performing minor level maintenance on-site," said Jason Strobel, Business Aviation HTF7000 Commercial Program Director, StandardAero.

StandardAero provides comprehensive support for the HTF7000 engine series. Heavy maintenance support is offered at the Augusta, GA Center of Excellence, while minor level maintenance services are available at the Gosport, UK RTC. Line maintenance is provided by the Belo Horizonte, Brazil RTC. The company's Mobile Service Team (MST) technicians extend support for minor and line level maintenance and repair of HTF7000 engines globally.

"We are constantly looking for new opportunities to expand our capabilities for product line services in regions where the market demands our support," said Scott Arms, StandardAero Business Aviation Vice President of Commercial Programs – Honeywell. "This is the latest example of how we're listening to customers and aligning our business to their needs to help improve the experience they have with our organization," he further added.

StandardAero's successful completion of the HTF7000 minor level maintenance event at its Gosport facility represents a significant step in enhancing regional support for operators in the EMEA region. As the company aligns its capabilities with customer needs, this achievement contributes to a more robust and efficient global support network for Honeywell HTF7000 engines.

Ethiopian Airlines selects Rolls-Royce TotalCare support for 22 Trent XWB engines

This agreement covers TotalCare support offering operational certainty for customers by transferring time on wing and maintenance cost risk for 22 Rolls-Royce Trent XWB-84 engines exclusively powering the Airbus A350-900 jets.

Ethiopian Airlines has taken a significant step in its collaboration with Rolls-Royce by signing a Memorandum of Understanding for a comprehensive TotalCare service agreement. This agreement covers 22 Rolls-Royce Trent XWB-84 engines that exclusively power the Airbus A350-900 aircraft. TotalCare is designed to offer operational certainty for customers by transferring time on wing and maintenance cost risk back to Rolls-Royce.

TotalCare, an industry-leading premium service, relies on data delivered through the Rolls-Royce advanced engine health monitoring system. This approach enhances operational availability, reliability, and efficiency for customers, providing a comprehensive solution for their engine maintenance needs.

Ethiopian Airlines, the first A350 operator in Africa since 2016, has been a longstanding customer of Rolls-Royce. This TotalCare service agreement further solidifies their partnership and underscores Ethiopian Airlines' commitment to operational excellence and passenger satisfaction. The order for 22 Rolls-Royce Trent XWB-84 engines complements the airline's existing fleet, which already includes 40 of these engines.

Mesfin Tasew, CEO, Ethiopian Airlines Group said, "We are excited to place this commitment for 11 Rolls-Royce Trent XWB-84 powered Airbus A350-900 aircraft, which will be supported by a comprehensive Rolls-Royce TotalCare services agreement. We are keen to expand our fleet size, acquiring the latest technology aircraft to offer a convenient and memorable onboard experience to our esteemed passengers."

Rolls-Royce congratulated Ethiopian Airlines on its continued route development and anticipated inaugural flight from Addis Ababa, Ethiopia, to London Gatwick, UK, later this month using the Trent XWB-powered A350 aircraft. The Trent XWB's versatility and efficiency make it suitable for a range of flight profiles, aligning with Ethiopian Airlines' diverse network.

The Trent XWB stands out as the world's most efficient large aero engine in service, offering a 15% fuel consumption advantage over its predecessor. Beyond efficiency, it contributes to Ethiopian Airlines' sustainability goals by being certified to operate on a 50% Sustainable Aviation Fuel (SAF) blend today and showcasing compatibility with 100% SAF for the future.

Rob Watson, President, Civil Aerospace Rolls-Royce said, "Today's announcement marks an exciting day for Ethiopian Airlines and Rolls-Royce. It is proof that the Trent XWB-84 continues to perform and deliver for our customers. It is the perfect engine platform to support Ethiopian Airlines' growth ambitions as a leading airline in Africa. "We have enjoyed a relationship with Ethiopian Airlines for many years and we would like to thank them for yet again putting their trust in the Trent XWB and Rolls-Royce. We look forward to supporting them with their global route development."

The TotalCare service agreement between Rolls-Royce and Ethiopian Airlines reflects a commitment to operational efficiency, reliability, and sustainability. As Ethiopian Airlines continues its growth trajectory, the Trent XWB-powered A350s, supported by TotalCare, play a vital role in the airline's global operations. This collaboration aligns with the broader industry trend toward comprehensive service solutions that enhance the overall performance of aircraft engines.

GE Aerospace completes additional testing on XA100 engine with the U.S. Air Force

The XA100 engine for the U.S. Air Force has undergone its third round of testing at GE Aerospace's Evendale, Ohio facility completing additional testing to validate minor design improvements.

GE Aerospace has announced the successful completion of additional testing for its XA100 engine, bringing the cutting-edge technology a step closer to deployment for the U.S. Air Force. The XA100 engine, part of the Adaptive Engine Transition Program (AETP), has undergone its third round of testing at GE Aerospace's Evendale, Ohio facility. The XA100 engine completed additional testing to validate minor design improvements, solidify the engine's detailed design and digital models, and accelerate adaptive propulsion development for sixth-generation applications.

The XA100 engine, designed to be the most advanced combat engine, concluded all AETP testing in 2023. The recent testing aimed to refine the engine's design and gather insights for future developments. GE Aerospace's XA100 engines have logged extensive hours of rigorous, system-level performance and operability testing. This has provided the company with unprecedented knowledge of the adaptive cycle engine architecture and its transformative capabilities.

"Our XA100 engine, already the most advanced combat engine ever developed, is now one of our most tested prototypes," said David Tweedie Vice President and General Manager for Advanced Defense Products, GE Aerospace. "This third round of testing represents our commitment to go above and beyond to ensure our military is ready with the revolutionary capabilities they need, and we are pleased with the learnings it has provided for our work today and in the future," he further added.

The XA100 engine is estimated to offer up to 25% greater fuel efficiency and 30% greater range, enhancing the airpower advantage in contested environments. It also provides double the thermal management capacity compared to current fighter engines, improving onboard electronics and sensor capabilities.

Recent support from Congress for advanced engine development in defense appropriations bills is expected to further accelerate the progress of GE Aerospace's XA100 engine. This technology is considered crucial for the future capabilities of U.S. warfighters. The learnings from XA100 testing are expected to support the Next Generation Adaptive Propulsion (NGAP) program, contributing to the development of advanced propulsion systems for future military applications.

"With a third round of testing, GE Aerospace has proven again our place as the industry leader in adaptive cycle engines," said Amy Gowder, Defense & Systems President and CEO, GE Aerospace."Recent Congressional support for advanced engine development in the defense appropriations bills will help continue our progress as we work to bring this revolutionary technology forward for U.S. warfighters," she further added.

GE Aerospace's XA100 engine has successfully completed additional testing, demonstrating its advanced capabilities and moving closer to deployment for the U.S. Air Force. The engine's fuel efficiency, range, and thermal management capacity position it as a crucial component for future military applications, contributing to the nation's airpower advantage.

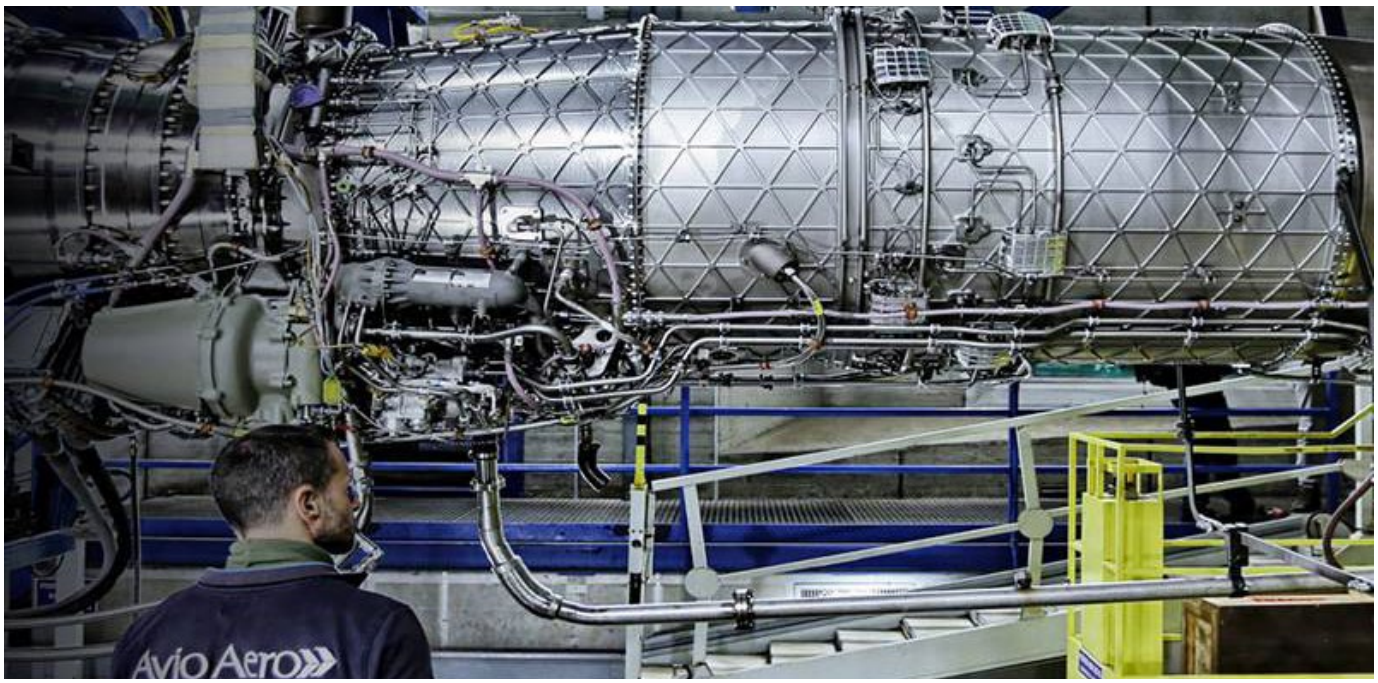


Image Courtesy :SR Technics

Engine Aftermarket Analysis and Trends

According to Market Research firm Technavio, the global MRO industry's size is expected to reach US$ 117.7 billion by 2031, from US$ 68.4 billion in 2021, growing at a CAGR of 5.6 percent. Amongst the four segments that comprise key MRO activities, the engine, and airframes section accounts for nearly 70% of the value of work. This makes the engine MRO aftermarket ripe for growth to pre-COVID levels, expected in late 2024.

The adjustments that will need to be made for this segment of MRO services such as the demand for fuel-efficient engines, newer aircraft deliveries, and updates made incorporating technological advancements. With air travel on a skyward trajectory, there will be a rise in demand for MRO services and the engine aftermarket.

Inflation has a crippling effect on Engine costs, especially double-digit inflation, with MROs reporting inflation to almost 11-30% in certain markets.

The above bar chart shows that the bulk (nearly 48%) of the global MRO market share is dominated by the overhaul of installed and spare engines. The engine aftermarket market too will be sizeable and present a potentially large business opportunity for Engine MRO

Aftermarket services.

MROs and airlines have found novel ways of working together in terms of say, buying material, keeping in mind that there would be supply chain disruptions that may not last long. Buying directly from OEMs is not cost-effective enough for the MRO and Airlines together.

An alternate materials procurement strategy has been to go for USM (Used Serviceable Material) which has gained much popularity, given the economic advantage. Engine part-outs coming into the market have raised the demand for specific types of assets, assets that consume the engine part-outs available in the market.

Strategic purchasing by both the Airlines and MROs is a strategy that is working. Transparency is key while planning procurement and purchasing.

Region-wise overview

In the mature markets of North America and Europe, the Engine MRO segment this year amounted to 45% of the total commercial aftermarket. China and the Asia-Pacific regions have been bullish and the immediate capacity availability has been a challenge, given the quantum of 'shop visit' requirements.

The return of China's MRO market has been a boon for MRO providers in the Asia-Pacific region but has inevitably led to fresh concerns about capacity. Engine MRO visits are gradually picking up and will accordingly impact the engine aftermarket segment at a similar pace.

MROs are witnessing engine lead times increase especially with new-generation aircraft. Labour shortages, operating below par technically, and a general slowdown in production are seen due to the geopolitical crisis in Europe. Critical raw materials supply disruptions such as steel and titanium have compounded the problem further. This means slower new parts deliveries from OEMs.

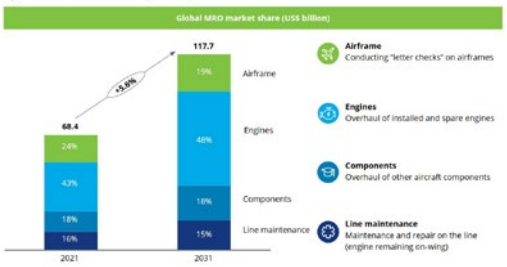
To circumvent these challenges, in the current scenario, operators are looking at alternatives to MRO visits, such as opting for Parts Manufacturer Approval (PMA) parts, and Designated Engineering Representative (DER) repairs.

Mitigating Challenges

Expanding on engine shop capacity, strengthening their workforce, and aligning themselves with new-generation engine aftermarket networks, are some of the steps taken by MROs to deal with capacity challenges.

For example, CFM International recently has plans afoot to add 20 shops to support their Leap engine product. They are clubbed under Leap Open MRO Network.

Figure 1: Global MRO market share (US$ billion)



Both GE Aerospace and Pratt & Whitney are recruiting staff to take care of their aftermarket businesses. Such is the strategic focus, especially on engine MRO aftermarket - that helps an entity to remain agile and resilient in a market that can be volatile at any given time.

It is not just manpower shortage but materials shortage that has had a debilitating effect on the industry. A skilled and technically qualified workforce is the need of the hour, apart from alternate sourcing of aftermarket parts. TAT or turnaround time will see improvements (and again a critical area for retaining businesses), with sufficient staff numbers, a robust supply chain, and a steady availability of raw materials.

Sustainability Remains in Focus

Conscious decisions adopted by airlines and aerospace industries are on the SAF and sustainability goals. The race towards net -zero by 2050, is real. Engine technology innovating towards Sustainability is key. However, in the engine aftermarket, cutting down waste with MROs switching to digitization, more of remote, virtual engine borescope inspections, paperless workflows, and predictive maintenance has stood this segment in good stead. The post-pandemic habit of hybrid or remote working has gained a lot of ground, and that has also helped the Engine Aftermarket markets.

Some of the Key Players in the Market:

1. Parker Hannifin Corporation
2. Honeywell International Inc
3. Meggitt Plc.
4. The Goodyear Tire & Rubber Company
5. General Electric

Reference Credit

Technavio
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NSPA and ADAC Luftrettung sign multi-year H135 helicopter fleet support contract

The NSPA has selected ADAC Luftrettung to handle the fleet's overall maintenance, including multi-year maintenance and repair contracts for the H135 helicopters.

After a Europe-wide tender by the NATO Support and Procurement Agency (NSPA), the Sankt Augustin, near Bonn, subsidiary of the non-profit ADAC Luftrettung was given the contract to repair the Federal Police's fleet of H135 helicopters.

"We are pleased that we were able to convince the award process with our quality concept based on the highest standards of service and flight safety," emphasizes ADAC Heliservice Managing Director Ulrich Amersdorffer.

The Federal Police and the contract have a three-year initial term and a two-year option to extend.

ADAC Heliservice specializes in the maintenance and repair of helicopters and their component parts. It is based at Bonn-Hangelar Airport and has other locations in Landshut and Halle-Oppin. Of the 42 helicopters in the Federal Police's H135 fleet stationed at the same airfield, 18 are used for emergency services, while the other aircraft are used for sovereign police duties. The services that are being promoted cover everything from routine maintenance to engineering and component overhaul.

According to Managing Director Amersdorffer, ADAC Heliservice's close proximity to the airport and wealth of experience with the Airbus Helicopters H135 helicopter model make it the perfect place to provide top-notch support for the Federal Police fleet.

"Rescue and police with the mission to save lives and protect lives – these are both customer groups that depend on the constant operational readiness of their fleets. Ensuring this requirement is now deeply anchored in the genes of the ADAC Heliservice team thanks to the many years of support from ADAC Luftrettung," he said.

ADAC Heliservice has already fixed one Federal Police machine, and in the upcoming weeks, they will repair the second. Helicopters need maintenance every 400 to 500 flying hours, depending on the kind. The ADAC Luftrettung is the owner of two thirds of the aircraft maintained at Sankt Augustin and the Heliservice stations in Landshut and Halle-Oppin. The remaining helicopters are supplied by outside clients like private helicopter operators, national and international aviation firms, and police helicopter squadrons.


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The services provided by Airinmar will complement Pegasus' current procurement activities.

Airinmar to offer component management services to Pegasus

Pegasus will receive warranty support services from Airinmar, including locating, claiming, and retrieving airframes and component warranty entitlements offered by Airbus and its suppliers.

AAR subsidiary Airinmar, a top independent supplier of aircraft warranty solutions and component repair cycle management, and low-cost carrier Pegasus, based in Turkey, inked a new multi-year services contract. For the administration of aviation component repair and warranty solution, Airnmar and Pegasus inked a multiyear contract.

Pegasus will receive warranty support services from Airinmar, which will include locating, claiming, and retrieving the various airframe and component warranty entitlements offered by Airbus and its suppliers.

Serife Akin, Procurement Director for Pegasus said, "Airinmar's knowledge of aircraft warranty and ability to maximise credit recovery will support effective management of our maintenance spend. This relationship will also enable us to continuously extract value from our product support agreements and effectively manage repair costs as we continue to expand our fleet."

By concentrating on increasing the recovery of Pegasus' warranty claims and lowering the total cost of aircraft maintenance, Airinmar's services will supplement Pegasus' ongoing procurement efforts.

Matt Davies, General Manager of Airinmar said, "We are enthusiastic about this opportunity to bring value through our well-proven warranty management services and contribute to the overall success of Pegasus. With more than 100 aircraft currently in operation and an additional 76 A321NEO aircraft on order, we take pride in playing a role in Pegasus' ongoing growth."

For over 35 years, Airinmar has provided customised component repair and warranty management support services to airlines, MROs, OEMs, helicopter operators, and military programmes.

Lufthansa Technik partners with Boeing to offer new VVIP cabins for the BBJ 777-9

Spanning over 340 sq. mtrs, the Lufthansa Technik AG CelestialSTAR for Boeing BBJ 777-9 is a crafted fusion of traditional Middle Eastern cultural influences with a contemporary twist.

In a grand reveal, Lufthansa Technik AG, in partnership with Boeing Business Jets (BBJ), has unveiled its latest VVIP cabin concept designed specifically for the Boeing BBJ 777-9. Named CelestialSTAR, this visionary cabin concept goes beyond conventional luxury aviation interiors. Spanning over 340 square meters, CelestialSTAR is a carefully crafted fusion of traditional Middle Eastern cultural influences with a contemporary twist, creating a bespoke flying experience for a new era of VVIP and head-of-state aircraft.

CelestialSTAR is more than an aircraft interior; it's a testament to the seamless integration of cultural richness and modern design principles. The name itself suggests a connection between the vastness of the sky, a nod to the spacious BBJ 777-9 cabin, and the geometric design patterns inspired by Middle Eastern heritage. It is a design philosophy that not only caters to the discerning tastes of VVIP travelers but also pays homage to the diverse and expansive nature of Middle Eastern philosophy.

"The thoughtful design of the BBJ 777-9 interior created by Lufthansa Technik illustrates the key features of our newest, largest and most capable BBJ on the market," said Alexis Fecteau, Managing Director of Marketing, Boeing Business Jets. "The elegant interior elements maximize personal comfort for passengers onboard the BBJ 777-9, which is capable of flying over 22 hours and connecting any two cities in the world, non-stop," he further added.

At the core of CelestialSTAR is an innovative approach to private air travel, where the traditional meets the contemporary in an unprecedented way. The design team at Lufthansa Technik has meticulously curated an environment that prioritizes privacy, luxury, and functionality, setting a new standard for VVIP aviation.

Central to CelestialSTAR is the Private Bed- and Bathroom, a cocoon-like sanctuary where functionality meets indulgence. This multifunctional Private Suite is designed to cater to the specific needs of VVIP travelers. The bathroom and sleeping quarters seamlessly merge, providing an enclosed retreat for utmost privacy. This cocoon design offers the flexibility for the VVIP passengers to enjoy the largest rain and massage shower ever designed for a private jet or luxuriate in a generously sized king-size bed.

What sets this Private Suite apart is its adaptability. Borrowing from Lufthansa Technik's EXPLORER concept, the suite transforms into an immersive wellness and entertainment space using sophisticated projection technology. Passengers can enjoy a variety of customized digital content, ranging from cinema experiences to virtual travel destinations.

"The BBJ 777-9 is the largest aircraft type newly available on the market and thus simply predestined for its role as successor to the BBJ 747 as the most popular aircraft for heads of state, many of which are among our loyal customers for decades," said Hassan Gasim, Sales Director Middle East VIP & Special Aircraft Services, Lufthansa Technik. " Through our close cooperation with Boeing Business Jets and furthermore Lufthansa's role as launch customer for the new type, we were able to build up extensive technical expertise at an early stage. Therefore, we are pleased to present our valued customers at the Dubai Airshow this once again groundbreaking interior that makes the most of the BBJ 777-9's size," he further added.

Adjacent to the Private Suite is the Work&Balance area, utilizing the full width of the cabin to create a multifunctional space. Here, guests can gather around a large VVIP desk for meetings or turn and move their seats to the side divans for more casual conversations. The clever integration of swivel

mechanisms allows for the expansion of table surfaces, providing flexibility as needed.

This area is not just about functionality; it's about creating an environment that adapts to the diverse needs of VVIP travelers. The rotating and sliding seats, combined with the innovative design, offer an engaging space for both work and relaxation.

Connected to the Private Suite is the Celestial Lounge, serving as the entrance lobby to the aircraft. This space makes a grand impression with an elegantly integrated bar and stylish seating arrangements. It acts as the perfect setting for welcoming high-ranking guests or preparing for meetings in the Work&Balance area. The intermediate doors not only add aesthetic appeal but also provide acoustic separation from the outer functional doors, contributing to an ambiance of space and luxury.

The Celestial Lounge seamlessly flows into the Conference & Dining area, designed as a modern-day majlis, echoing the traditional Middle Eastern gathering and meeting room. This multifunctional space features eleven individual seats that can be rotated for dining, conferencing, or casual conversations. State-of-the-art communication and conference technology, including retractable monitors, connect this room and the

entire aircraft with the world.

A noteworthy feature in this space is the large window shades with electrochromatic dimming. Integrated seamlessly into the oriental-inspired design of CelestialSTAR, these shades contribute to a generous spatial impression, even when closed and without daylight. The design principles of side walls continue, providing both functional and aesthetic appeal.

Considering its primary audience, CelestialSTAR offers generous accommodations for advisory staff and additional personnel. The Deluxe Suites, Executive Area, and the Entourage Area complete the layout, ensuring that the aircraft can cater to the entourage accompanying VVIP passengers. This bespoke design, targeting royal families and heads of state in the Middle East, reflects an understanding of the unique travel requirements of such distinguished clientele.

The CelestialSTAR cabin design is the first of its kind, directly derived from the BBJ 777-9 design data provided by Boeing Business Jets. This ensures not only the conceptual appeal but also the technical feasibility of the design, using precise dimensions as the foundation.

As CelestialSTAR takes center stage at the Dubai Airshow, it symbolizes Lufthansa Technik's commitment to delivering avant-garde solutions that transcend conventional luxury aviation. This design not only redefines the flying experience for VVIP travelers but also showcases the potential for aircraft interiors to be cultural masterpieces that resonate with a global audience. CelestialSTAR is more than an interior; it's a cultural tapestry woven into the very fabric of modern aviation luxury.

The Lufthansa Technik Group is one of the leading providers of technical aircraft services in the world. Certified internationally as maintenance, production and design organization, the company employs more than 22,000 people in dozens of locations around the globe. Lufthansa Technik offers the full range of services for commercial, VIP and special mission aircraft. The portfolio includes maintenance, repair, overhaul and modification of airframes, engines, components and landing gears, as well as the manufacture of innovative cabin products and digital fleet support.

Ethiopian Installs Thales' AVANT Up on latest A350-1000 fleet

Ethiopian Airlines has upgraded its in-flight entertainment services with AVANT Up in its Airbus A350-100 fleet.

(Left to right) Mr. Mesfin Tasew, Group Chief Executive Officer– Ethiopian Airlines; Mr. Retta Melaku, Chief Operating Officer – Ethiopian Airlines; Mr. Mathieu Franco: Senior Account Manager - Thales InFlyt Experience, Bruno Guinamand, Regional Vice President - Thales InFlyt Experience

The leading airline on the continent and the fastest-growing global airline brand, Ethiopian Airlines Group, is happy to announce that it has chosen the AVANT Up in-flight entertainment system for its future Airbus A350-1000 aircraft.

Ethiopian, the recipient of numerous honours, including six SKYTRAX awards in a row, will debut the newest in-flight entertainment system from Thales Inflyt Experience, which boasts a new user interface to improve the traveller experience as well as a number of digital services like interactive maps, shopping, and meal and beverage options.

Mr. Mesfin Tasew, CEO Ethiopian Airlines Group said, «As we endeavor to maintain our position as Africa's number one and among the leading global airlines, we know one of the key success factors is giving our passengers the best possible onboard experience. We are delighted to introduce the AVANT Up inflight entertainment solution for our upcoming Airbus A350-1000 aircraft where passengers will enjoy the finest immersive and cinematic experience. The system provides several unique features that enable the passengers to remain excited throughout the flight, and arrive at their destination relaxed."

The AVANT Up from Thales has brand-new OPTIQ 4k QLED HDR screens. Its two Bluetooth connections and integrated Wi-Fi enable travellers to pair more than one device. Passengers can use OPTIQ's on-screen USB-A and USB-C charging ports to charge their computers, phones, tablets, and earbuds while in flight with up to 70 watts of power.

Bruno GUINAMAND, Regional Vice President, Thales Inflyt Experience said, "Ethiopian has trusted Thales as an inflight entertainment supplier for more than a decade and now to equip its new A350-1000 aircraft with the latest AVANT Up IFE solution. Thales' AVANT Up brings to Ethiopian the latest consumer technologies and capabilities to the aircraft. Combining our Optiq 4K QLED HDR displays, award-winning dynamic power, and next generation digital services will bring exceptional experiences to Ethiopian's passengers."

Ethiopian Airlines, the recipient of multiple major accolades, including SKYTRAX "the best airline in Africa" for the sixth consecutive year, is determined to improve the onboard experience for its passengers by continuing to invest in technology.

The first Airbus A350-1000 aircraft ordered by Ethiopian Airlines is scheduled for delivery in the third quarter of 2024.

Air India's Fleet Revival: A Catalyst for India's MRO and Aircraft Interiors Industry

The overhaul of Air India's 'long-grounded' fleet extends to the aircraft interiors with pledges for over $400 million for refurbishment of its legacy widebody fleet of 43 Boeing 777s and 787 jets.

Air India, an iconic name in Indian aviation, has been on a transformational journey since its takeover by the Tata Group around two years ago. One of the most remarkable aspects of this revival is the effort to reinstate 100% of its 'long-grounded' fleet. The long-grounded fleet included a mix of Boeing 787s, 777s, and some narrow-body Airbus A320 aircraft, which had been immobilized for various reasons, including component shortages and engine issues. Now, over 95% of these aircraft have been made airworthy, with only two left to rejoin the active fleet.

This revitalization initiative not only marks a significant milestone in Air India's resurgence but also carries substantial implications for the Indian aviation ecosystem. In this article, we delve into the specific facets of this fleet revival effort, with a focus on its implications for the Maintenance, Repair, and Overhaul (MRO) and Aircraft Interiors sectors in India.

Air India's Remarkable Turnaround

Air India, India's flag carrier, has seen its fortunes shift positively under the Tata Group's stewardship. The airline, once marred by financial losses and operational inefficiencies, has undergone a comprehensive transformation. One of the key aspects of this transformation has been the revival of the 'long-grounded' fleet. At the time of the takeover by the Tatas, Air India had over 30 such aircraft in its fleet, spanning both widebody and narrowbody planes.

One of the primary reasons these aircraft were grounded was the scarcity of components and engine shortages. However, as the supply chain situation improved, Air India embarked on a mission to make these aircraft airworthy once more. This mission has been instrumental in increasing Air India's operational capacity and resilience, enabling the airline to revive its long-haul and international routes, along with launching new ones.

Revival Beyond Mechanical Fixes

The revival of the 'long-grounded' fleet has gone beyond just mechanical fixes. Thousands of seats across these aircraft have been refurbished, and in-flight entertainment systems have been restored, ensuring passenger comfort and safety. In some instances, over 30,000 spare parts were required per aircraft, underscoring the comprehensive nature of this overhaul.

One of the significant lessons learned from this experience was the importance of having in-house capabilities and facilities for the supply of spares. This insight is vital not only for Air India but also for the broader Indian aviation ecosystem, especially in the MRO sector.

Implications for the MRO Industry:

Air India's fleet revival has set in motion a chain of events that is likely to have a profound impact on the Indian MRO industry. During the process of making these aircraft airworthy, the importance of having domestic capabilities for spares supply became evident. This realization is expected to lead to investments and advancements in MRO capabilities within India.

Here are some key implications for the MRO industry:

Reduced Dependency on International Suppliers: As the Indian MRO industry develops in response to Air India's revival initiative, it's likely to reduce the dependency on international suppliers for critical components and spares. This is significant for enhancing the self-reliance of the Indian aviation sector, aligning with the government's 'Make in India' initiative.

1. **Increased Competitiveness:** A robust domestic MRO sector can enhance the competitiveness of Indian airlines. With easier access to spares and maintenance services, airlines can reduce operational costs and enhance their overall efficiency.
2. **Skilled Workforce Development:** The growth of the MRO industry will necessitate the development of a skilled workforce. This, in turn, will generate employment opportunities and support the growth of technical education and training institutions in India.
3. **Technology Transfer and Collaboration:** Collaborations between Indian MRO service providers and global leaders in the industry could facilitate technology transfer and knowledge sharing, further advancing the capabilities of the Indian MRO sector.
4. **Quality and Compliance Standards:** To compete at an international level, Indian MROs will need to meet global quality and compliance standards. This push for higher quality services will likely lead to continuous improvement in the industry.
5. **MRO Hubs:** India has the potential to become a regional MRO hub. With a robust domestic MRO sector, India could offer maintenance services to airlines in the South Asian and Southeast Asian regions, further boosting the country's reputation in the global aviation industry.

Implications for Aircraft Interiors

The overhaul of Air India's 'long-grounded' fleet extends to the aircraft interiors. As the airline pledges over $400 million to completely refurbish its legacy widebody fleet of 43 Boeing 777s and 787s, the Aircraft Interiors sector stands to benefit substantially.

Here's how this initiative impacts the Aircraft Interiors market:

1. Elevated Passenger Experience: Passengers flying with Air India can look forward to a significantly improved in-flight experience. The refurbishment includes changes from seats to in-flight entertainment systems, carpets, curtains, galleys, lavatories, and more. This will redefine comfort and quality for travelers.

2. Technological Advancements: The overhaul of the aircraft interiors provides an opportunity to incorporate the latest technology in in-flight entertainment and passenger services, aligning with global aviation trends.

3. Demand for Interior Design and Refurbishment Services: The Aircraft Interiors industry will see an uptick in demand for interior design and refurbishment services. Indian companies that specialize in interior design and customization will have an expanded market.

4. Potential for Local Manufacturing: With a focus on cost-efficiency, there's potential for more components and materials to be manufactured locally, contributing to the 'Make in India' initiative.

5. Global Partnerships: To meet international quality and safety standards, Indian Aircraft Interiors companies may seek collaborations and partnerships with global leaders in the field.

Impact on India's Aviation Ecosystem

As Air India's newly revitalized fleet takes to the skies, the ripple effect is likely to stimulate the broader Indian aviation ecosystem. These developments not only serve as a testament to the resilience of the Indian aviation sector but also set the stage for further innovations and investments in MRO and Aircraft Interiors to meet the growing demands of this dynamic market.

Airbus marks territory at the Dubai Air Show 2023

Airbus Continues to Soar with Major Orders and Collaborations at Dubai Airshow 2023.

In a resounding testament to Airbus's global standing and technological prowess, several significant announcements at the Dubai Airshow 2023 underscore the company's pivotal role in shaping the aviation landscape.

• **airBaltic** is set to become the largest customer for the Airbus A220 in Europe following the confirmation of an additional order for 30 A220-300s. This move will elevate the airline's total firm orderbook to an impressive 80 aircraft. Already standing as the largest A220-300 operator globally with a fleet of 44, airBaltic has a long-standing relationship with the Airbus A220-300, dating back to 2016 when it became the launch customer. In 2020, the airline took a strategic step to exclusively operate this aircraft type, solidifying its commitment to the A220 series.

• **Mubadala Investment Company** and Airbus have inked an agreement aimed at providing internship opportunities for Emirati senior university students specializing in engineering. The pact, signed at Dubai Airshow 2023 by Fatima Al Marzooqi, Director of Portfolio Emiratisation at Mubadala, and Mikail Houari, President of Airbus Africa and the Middle East, outlines a plan to host 12 Emirati engineering students at Airbus headquarters in Toulouse, France, for internships over the next three years.

This initiative aligns with Airbus' commitment to promoting STEM (Science, Technology, Engineering, and Mathematics) education in the Middle East and Africa, fostering industry awareness, practical experience, and skill development among students and entrepreneurs in the region.

• **EGYPTAIR** has unveiled plans to enhance its global flight operations with the acquisition of 10 new Airbus A350-900s, a deal announced at the Dubai Airshow. The introduction of these A350s into EGYPTAIR's fleet is expected to deliver a 25% reduction in fuel consumption, leading to lower emissions. Passengers will experience the comforts of Airbus AirSpace cabin design, characterized by spacious interiors, wide seats, high ceilings, and ambient lighting.

The signing ceremony occurred at the Dubai Airshow, attended by EGYPTAIR's Chairman and CEO, Engineer Yehia Zakaria, and Airbus Chief Commercial Officer and Head of International, Christian Scherer. The A350-900 is positioned as a key asset for EGYPTAIR, offering a combination of benchmark economic efficiency and passenger comfort.

• **Ethiopian Airlines Group**, Africa's leading airline, has solidified its commitment to the Airbus A350 by signing a memorandum of understanding (MoU) for an additional 11 A350-900s. This move increases Ethiopian Airlines' total order and commitment for the A350 to 33, which includes four A350-1000s. With a current fleet of 20 A350-900s, this new agreement reaffirms Ethiopian Airlines' position as the largest A350 customer in Africa.

The MoU was signed at the Dubai Airshow in the presence of Ethiopian Airlines Group CEO Mr. Mesfin Tasew and Airbus Chief Commercial Officer and Head of International, Christian Scherer. The Airbus A350 has garnered widespread popularity with over 1,000 orders from leading airlines worldwide.

In summary, these developments at the Dubai Airshow 2023 underscore Airbus's commitment to innovation, sustainability, and global collaboration. As the aviation industry evolves, Airbus continues to lead the way in providing cutting-edge solutions and fostering partnerships that drive the sector forward.

Boeing to receive order for Up to 67 Jets from Ethiopian Airlines

The Boeing agreement encompasses Ethiopian Airlines ordering 11 787 Dreamliners and 20 737 MAX jets, with an option for an additional 36 jets.

In a groundbreaking announcement at the Dubai Airshow 2023, Ethiopian Airlines and Boeing have forged an unprecedented deal, marking the largest-ever purchase of Boeing airplanes in African history. The agreement encompasses Ethiopian Airlines ordering 11 787 Dreamliners and 20 737 MAX airplanes, with an option for an additional 36 jets. This monumental commitment, valued at a significant figure, solidifies the longstanding partnership between Ethiopian Airlines and Boeing, stretching back over 75 years.

The magnitude of this deal extends beyond the sheer number of aircraft ordered. It underlines the strategic vision of Ethiopian Airlines, Africa's leading carrier, and Boeing, one of the world's premier aircraft manufacturers, to shape the future of aviation on the continent. The order includes a mix of Boeing's advanced Dreamliner and 737 MAX models, aligning with the latest advancements in fuel efficiency, reduced emissions, and enhanced passenger experience.

"We are pleased to announce that Ethiopian Airlines has reached a deal with Boeing to place a firm order for 31 ultra-modern airplanes, with opportunity for 36 additional jets," said Mesfin Tasew, CEO, Ethiopian Airlines Group. "This order will enable us to modernize and increase our fleet in support of Ethiopian Airlines' growth plan and our Vision 2035 Strategy. Through this deal, we have solidified our decades-old exemplary business partnership with Boeing. The 787 Dreamliner and 737 MAX demonstrate Ethiopian Airlines' environmentally conscious decisions and its commitment to serve passengers with the latest technologically advanced airplanes," he further added.

Ethiopian Airlines' decision to incorporate the 787-9 Dreamliner into its fleet emphasizes its commitment to modernization and environmental consciousness. The Dreamliner family is renowned for its innovative design, reducing fuel use and emissions by 25% compared to the aircraft it replaces. This aligns with Ethiopian Airlines' Vision 2035 Strategy, positioning the carrier as a trailblazer in adopting environmentally friendly aviation solutions.

The inclusion of the 737-8 model further illustrates Ethiopian Airlines' commitment to fleet diversification. This model offers a 20% reduction in fuel use and emissions and a 50% smaller noise footprint, making it an ideal choice for routes with varying operational requirements. Diversifying the fleet enhances operational flexibility, allowing the airline to optimize its network and respond effectively to market demands.

Beyond the aircraft order, Ethiopian Airlines and Boeing have inked an agreement to collaborate on cabin modification services for the airline's existing 787 Dreamliners. This comprehensive retrofitting will enhance the passenger experience by incorporating advanced in-flight entertainment and installing new seats across all cabins, including lie-flat business-class seats from Boeing joint venture Adient Aerospace. This collaboration extends the lifecycle of the existing fleet, aligning with Ethiopian Airlines' commitment to providing cutting-edge services to its passengers.

"Ethiopian Airlines continues its leadership as one of Africa's preeminent airlines with this landmark commitment to expand their 787 and 737 MAX fleets," said Brad McMullen, senior vice president of Commercial Sales and Marketing, Boeing. "Ethiopian was the first African airline to take delivery of the 787, and the Dreamliner family continues to play an integral role in its long-haul fleet. With their decades of experience operating our single-aisle and widebody jets, we appreciate Ethiopian Airlines' confidence in our products and the strength of our relationship after more than 75 years of collaboration," he further added.

This landmark collaboration comes against the backdrop of Boeing's Commercial Market Outlook for Africa, projecting a need for 1,025 airplanes over the next two decades. Notably, over 70% of these deliveries are anticipated to be single-aisle jets, reflecting the growing demand for narrow-body aircraft. Africa's air-traffic growth is forecast at 7.4% through 2042, surpassing the global average growth rate, indicating the region's pivotal role in the future of aviation.

The commitment of Ethiopian Airlines to Boeing products, spanning over 75 years, underscores the strength and resilience of their partnership. Boeing's Senior Vice President of Commercial Sales and Marketing, Brad McMullen, expressed appreciation for Ethiopian Airlines' confidence in Boeing's products and the robustness of their relationship.

The Ethiopian Airlines and Boeing deal at the Dubai Airshow 2023 stands as a historic milestone, symbolizing not only a significant aircraft order but a strategic alignment between a leading African carrier and a global aviation giant. This collaboration not only elevates Ethiopian Airlines' status as a major player in the aviation industry but also sets the stage for a new era of growth, efficiency, and environmental consciousness in African aviation. As the aviation landscape evolves, this deal serves as a beacon, guiding the way for other carriers and manufacturers to shape the future of air travel on the continent.

Joramco to support Emirates' Boeing fleet

This deal extends the existing MRO agreement and commits Joramco to providing additional nose-to-tail Boeing 777 maintenance services to Emirates until the conclusion of 2025.

Joramco, the aircraft maintenance, repair, and overhaul (MRO) facility based in Amman and part of Dubai Aerospace Enterprise (DAE), has inked a new agreement with Emirates. This deal extends the existing MRO agreement and commits Joramco to providing additional nose-to-tail Boeing 777 maintenance services to Emirates until the conclusion of 2025. Emirates, known as the world's largest operator of Boeing 777s, has opted to expand its contract with Joramco. This decision underlines Joramco's standing as the preferred MRO provider for the Boeing 777 aircraft. The collaboration's extension indicates the success of the current partnership and reflects Emirates' confidence in Joramco's MRO capabilities.

With over 50 years of experience, Joramco has established itself as a prominent independent commercial aircraft MRO facility. It serves a diverse range of customers across the Middle East, Europe, South Asia, Africa, and the CIS countries. The MRO facility offers services for various aircraft models from leading manufacturers such as Airbus, Boeing, and Embraer.

Fraser Currie, CEO, Joramco said, "We are delighted to see the development of our partnership with Emirates. As part of this new agreement, Joramco will be providing additional Boeing 777 maintenance services for Emirates. This continued collaboration reaffirms our position as a leading global MRO provider, renowned for delivering exceptional services."

Joramco's track record demonstrates its expertise in providing maintenance, repair, and overhaul services for commercial aircraft. The facility's global reach and the ability to cater to different aircraft models contribute to its reputation as a trusted MRO partner in the aviation industry.

The expanded agreement between Joramco and Emirates signifies a deepening of their successful partnership. Joramco's role as the preferred MRO provider for Boeing 777s and the extension of services until 2025 highlight the effectiveness and reliability of Joramco's maintenance solutions. As both entities continue their collaboration, this agreement underscores Joramco's commitment to delivering high-quality services in the aviation MRO sector.

Flydubai to gain control of maintenance requirements with $190 million MRO facility at MBRAH

Flydubai is all set to fly in a new direction as it revealed its ambitious plans to for a purpose-build $190 million maintenance, repair, overhaul (MRO) facility in South Dubai. The construction of the new hangar and workshop will commence next year and is expected to conclude by the last quarter of 2026. With the new facility flydubai aims to gain control over its maintenance requirements as it continues to expand its fleet and bring down the operational cost to a considerable extent.

The facility will be built in Mohammed bin Rashid Aerospace Hub (MBRAH) and hopes to enhance South Dubai's MRO and overall aviation ecosystem along with significant contribution to the growth and sustainability.

Proud to announce the plans for new MRO facility, Sheikh Ahmed bin Saeed Al Maktoum, chairman, flydubai reaffirmed his commitment to operational excellence in Dubai's dynamic ecosystem.

Echoing his opinion, Khalifa Al Zaffin, chief executive, Dubai Aviation City Cooperation and Dubai South further affirmed his commitment to enhancing the ecosystem that contributes to the growth and sustainability of the aviation industry. "This partnership reaffirms Dubai's position as a global aviation hub and reinforces our shared vision of providing world-class aviation services to our partners," Al Zaffin added.

Hailing the spirit of Dubai, chief executive, flydubai, Ghaith Al Ghaith unveiled the plans for the new state-of-art MRO facility. Praising Dubai as a thriving aviation destination fostering connectivity, innovation, growth, Ghaith added: "Dubai has set a benchmark for the global aviation

industry. At flydubai, we continue to invest in our people and technologies and build solid foundations to enable further growth as part of our role in supporting Dubai's economic and aviation vision."

"Having our own in-country MRO facility will ensure a quicker turnaround of our fleet maintenance while adhering to the highest quality standards," added Mick Hills, chief operating officer, flydubai. "This increased level of control will result in reduced downtime as maintenance tasks can be efficiently planned and executed, minimising any disruption to our flight schedules in the future and enhancing overall operational reliability."

flydubai has been expanding its in-house capabilities over the years and in 2022 received its CAR-145 Base Maintenance Approval from the General Civil Aviation Authority (GCAA). This has enabled the airline to perform C Checks and Entry-into-Service for its fleet of Boeing 737 MAX aircraft; bringing the airline added operational and cost efficiencies.

The airline has a strong team of 455 skilled engineers working in Line Maintenance, Technical Services, Materials and Workshops responsible for ensuring the airworthiness and safety of the fleet. Going ahead flydubai plans to recruit another 230 engineers in the next one year. This recruitment drive is well-timed to ensure that the airline is prepared in advance to meet the maintenance demands during the opening of new facility in 2026.

flydubai currently operates a young fleet of 80 Boeing 737 aircraft and will take delivery of more than 150 additional aircraft by 2030. The airline will add widebody aircraft to its fleet for the first time with a firm order of 30 787-9 Dreamliners, enabling expanded connectivity and more seat-offerings to meet the growing demand on existing routes.

Flydubai operates as a standalone airline but codeshares with Emirates on some routes. Both the airlines overlap service at more than 30 destinations across Europe, Asia, and Africa. With the new 787s flydubai aims to replace Emirates in some markets based on the demand.

As both the airlines have a common base at DXB, flydubai's maintenance and spare parts challenges will be reduced to a considerable extend.

The airline also signed a multi-year services agreement to cover 222 LEAP-1B engines for the airline's fleet of Boeing 737-8/-9 aircraft with the deal covering spare engines. The engines are set to power flydubai's fleet of Boeing 737-8/-9, both in service and on order, marking a strategic move towards a more sustainable and efficient future.

About flydubai

flydubai has a network of more than 120 destinations in 54 countries across Africa, Central Asia, the Caucasus, Central and South-East Europe, the GCC and the Middle East, and the Indian Subcontinent since commencing operations in June 2009. The airline has carried over 90 million passengers since it began operations in 2009

Embraer secures type certification for E190-E2 and E195-E2 jets from Singapore

Embraer's E190-E2 and E195-E2 have received type certification from the Civil Aviation Authority of Singapore as Scoot all set to commence operations with the jets in 2024.

Embraer's E190-E2 and E195-E2 have received type certification from the Civil Aviation Authority of Singapore (CAAS), marking a significant milestone for the aircraft, known for being the world's quietest and most fuel-efficient single-aisle planes. Scoot, the low-cost subsidiary of Singapore Airlines, is set to commence operations with the E190-E2 starting in 2024.

The E190-E2 and E195-E2 had previously secured certifications from three major civil aviation authorities—the FAA (USA), EASA (Europe), and ANAC (Brazil)—between 2018 and 2019. The recent certification by CAAS further validates the aircraft's compliance with international standards.

"We welcome the type certification of the E190-E2 and E195-E2 and thank CAAS for their thorough assessment," said Raul Villaron, Vice President and Head of Region, Asia Pacific, Embraer Commercial Aviation. "This is yet another milestone achieved as we work towards Embraer's modern, fuel-efficient E190-E2 taking the skies in Scoot's livery in 2024," he further added.

Embraer's E190-E2 and E195-E2, designed based on the extensive experience of the first generation of E-Jets, promise advanced features while maintaining the maturity and reliability of their predecessors. The first-generation E-Jets have been widely adopted, with over 80 airlines in 50 countries flying them.

Embraer, in collaboration with CAE, is set to establish a state-of-the-art E2 full flight simulator and pilot training program in Singapore. This initiative, slated to begin operations by the end of the year, aims to provide comprehensive training for pilots operating the E2 aircraft. The simulator will be housed at the Singapore-CAE Flight Training Centre, located at the SIA Training Centre.

Scoot's induction of the E190-E2 into its fleet aligns with the airline's strategy of leveraging modern and efficient aircraft. The E2 series is expected to offer improved operational efficiency, reduced environmental impact, and enhanced passenger experience. Scoot envisions leveraging these advantages to expand its network and offer enhanced travel opportunities to its customers.

The type certification by CAAS not only signifies the readiness of Embraer's E190-E2 and E195-E2 for operations in Singapore but also underscores the commitment of both Embraer and Scoot to modern and sustainable aviation. As Scoot prepares to introduce the E190-E2 into its operations, the collaboration with Embraer and the establishment of a training infrastructure in Singapore contribute to the region's aviation capabilities, aligning with the broader vision for sustainable and efficient air travel.

Skyryse technology -Revolutionising the world of aviation

Being the the first and only system that works with the pilot through a reimagined HMI (Human Machine Interface) the technology can manage complex emergency procedures like failure of a helicopter engine.

Skyryse, aviation software and safety technology startup has recently completed the world's first-ever fully automated autorotation emergency landing procedure. The technology is a highly automated flight control system capable of being installed on any aircraft. Being the the first and only system that works with the pilot through a reimagined HMI (Human Machine Interface) the technology can manage complex emergency procedures like failure of a helicopter engine.

When the helicopter engine fails, the pilot has less than two seconds to perform a fully manual series of multiple control movements in a maneuver called an autorotation. Today's complex control systems do not allow the helicopter to automate this manoeuvre till now.

In case of engine failure, the Skyryse system quickly recognizes a power failure and sets in motion multiple procedures, and with a push of a button, makes the landing uneventful. The technology helps to lowers the pitch, align the nose, manage aircraft stability, complete the flare, and aids in safe and graceful landing.

Skyryse has completed dozens of automated autorotations. The company achieved its first fully automated autorotation from altitude fully to the ground in a Robinson R66 outfitted with Skyryse technology at their Los Angeles-area Flight Test and Performance Facility, on July 22, 2023. Skyryse plans to unveil the first production helicopter featuring its technology including the world's first simplified control system in Q1 of 2024.

Every year, more than 400 people lose their lives in general aviation accidents just in the United States alone. With such mind-boggling statistics, the advent of such a life-saving technology was the need of the hour.

"Fully automated autorotation is just one example of how our technology will bring a commercial grade of safety and beyond to general aviation," said Mark Groden, founder and chief executive, Skyryse.

Besides this, Skyryse' FlightOS removes the complexity of flying while increasing pilot safety by removing or replacing dozens of manual aircraft flight controls, including gauges, knobs, and dials, with a completely reimagined HMI (Human-Machine Interface). Manual flight controls, including push-pull tubes, cables, and pulleys, are replaced by highly automated fly-by-wire systems increasing general aviation safety to commercial levels.

FlightOS also boosts pilot supply by simplifying the cockpit and flight controls as well as automating certain features. FlightOS makes it easier to manage any aircraft and earn a pilot's license.

FlightOS combines dynamic flight envelope protection with IFR (Instrument Flight Rules), ensuring the aircraft always remains within its limits and capabilities while flying through clouds and in low visibility. This technology can reduce and one day eliminate general aviation fatalities.

Interestingly, the Skyryse system removes many complexities of managing an aircraft during standard flight operations, inclement weather, and emergencies. Skyryse has raised more than $260 million from leading investors, including Fidelity Management & Research Company, Monashee Investment Management, ArrowMark Partners, Venrock, Eclipse Ventures, Cantos, Stanford University, and Bill Ford, Executive Chair, Ford Motor Company.

Aviation hasn't changed much in the last 75 years, and Skyryse aims to transform the world of aviation through safety, simplicity and accessibility.

Lufthansa Technik conducts inaugural base maintenance on Cebu Pacific's A330neo jet

The Lufthansa Technik Philippines and Cebu Pacific collaboration, which started in 2011 with line maintenance, has now expanded to include base maintenance for both A320 and A330 fleets.

Lufthansa Technik Philippines (LTP) initiated base maintenance for Cebu Pacific's first Airbus A330neo aircraft, RP-C3900, on November 17, 2023. This marks the beginning of a series of maintenance events to support Cebu Pacific's expanding A330neo fleet. The collaboration, which started in 2011 with line maintenance, has now expanded to include base maintenance for both A320 and A330 fleets. Cebu Pacific, in line with its ongoing fleet modernization efforts, currently operates five A330neo aircraft, with the anticipation of an additional eleven arriving soon. This base maintenance collaboration is crucial to ensuring the airworthiness and reliability of the growing fleet.

Lufthansa Technik Philippines is conducting the inaugural base maintenance for Cebu Pacific's A330neo aircraft, symbolizing the deepening collaboration between the two companies. The partnership between Cebu Pacific and Lufthansa Technik Philippines began in 2011 with line maintenance for CEB's narrow-body fleet. It has evolved over the years to include comprehensive base maintenance services for both A320 and A330 fleets.

Shevantha Weerasekera, Vice President Engineering and Fleet Management, Cebu Pacific said, "This collaboration with Lufthansa Technik Philippines is a testament to our commitment to maintaining the highest standards of safety and quality in our operations. We are excited about the partnership and look forward to achieving new heights together."

Lufthansa Technik Philippines, celebrating its role in CEB's 50th aircraft base maintenance layover, expressed extreme pleasure in the special partnership. They see CEB as a leading low-cost carrier consistently pushing boundaries in the region. Lufthansa Technik Philippines becomes the first in its global network to provide comprehensive A330neo aircraft maintenance services. This milestone solidifies their commitment to delivering top-tier aviation maintenance solutions.

Rainer Janke, Vice President Marketing and Sales Asia Pacific, Lufthansa Technik Philippines said, "We are extremely pleased to embark on this special partnership with Cebu Pacific. In addition to achieving this significant milestone, we recently celebrated CEB's 50th aircraft base maintenance layover at our facility. They have consistently pushed the boundaries as one of the leading low-cost carriers in the region, and LTP is honored to have been chosen as their partner in this endeavor."

The commencement of base maintenance for Cebu Pacific's A330neo fleet by Lufthansa Technik Philippines marks a significant milestone in their longstanding partnership. This collaboration, extending over a decade, underscores the commitment to safety, quality, and excellence in aviation maintenance services.


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Airbus signs spree of contract with four Indian suppliers for component manufacturing

In what seems to be a spree of contracts, Airbus has inked aircraft component manufacturing contract with about four Indian suppliers, mainly Mahindra Aerospace, Aeques, Dynamatic Technologies and Gardner. These contracts are a part of Airbus' make-in-India initiative to boost the country eco-system in component manufacturing like sheet metal, machining and extrusion profiles".

As a part of the contract, the four companies will supply airframe and wing parts for Airbus A320neo, A330neo and A350s. With such contracts Airbus plans to ramp-up of commercial aircraft programmes globally along with strengthening the capability and capacity in the aviation ecosystem of India.

This contract holds special significance as it will stress India's image as a global manufacturing hub along with deepening Airbus' Make in India drive.

Airbus already procures $750 million worth of components and services annually from India and the latest contracts will add significantly to those volumes. Interestingly, every Airbus commercial aircraft has components and technologies that are made in India.

Highlighting India's importance not just in terms of market for strategic resource but for human capital as well as aerospace components, Remi Maillard, President and Managing Director, Airbus, India voiced that he was extremely proud to extend his partnership with Aequs, Dynamatic, Gardner and Mahindra Aerospace. "All the four companies are trusted Airbus partners in India delivering with sound technical expertise and operational excellence," Maillard noted.

Dynamatic Technologies has been the sole supplier of flight-critical aerostructures, mainly the A320 and A330 flap track beams since 2008. Dynamatic is the Tier 1 supplier for Airbus for these parts on which the wing flap surfaces extend and retract.

Speaking on the latest contract, Udayant Malhoutra, chief executive, Dynamatic Technologies said that it is a high-volume business constituting the supply of over 200,000 parts annually for a decade. "This contract marks the beginning of our relationship with Airbus to export detail parts across the entire Airbus Aircraft family." Malhoutra added.

Dynamatic Technoloies recently created a new subsidiary to manufacture detail parts to serve global OEMs to strengthen its position in global supply chain circles. With the new contract, Airbus Aerostructures will will provide guidance and support to ensure that the manufactured detail parts meet Airbus's stringent quality and safety standards.

Airbus has also expanded its scope of work with Aequs, to supply detailed parts, with bench assembly for wings, fuselage, and pylons over the next decade.

Airbus was one of Aequs' first OEM customer and since then the two have enjoyed long standing partnership with Aequs being preferred Detailed Parts Partner (D2P)

Proud to extend the contract with Airbus, chairman and chief executive of Aequs, Aravind Melligeri said: "It is also a testimony to the confidence in Aequs by global OEMs to enter into a deeper and longer relationships particularly at a time when the global supply chain is passing through a recalibration. This stems from the robustness of the Aequs Aerospace ecosystem and its supply chain robustness."

With this contract Airbus has laid the foundation of putting in place all the critical building blocks for an integrated industrial ecosystem that will propel India into the front ranks of aerospace manufacturing nations.

Earlier this year, Airbus has inked a deal with Tata Advanced Systems for manufacturing of cargo and bulk cargo doors for A320neo.

Safran and EGYPTAIR announce a NacelleLifeTM servicing agreement for Safran's A330ceo thrust reversers

Safran will provide Nacelles' OEM1 guaranteed MRO solutions designed especially for the Egyptair Airbus A330ceo fleet thrust reversers will be utilized at the AMES2 repair station of Safran Nacelles in Dubai, UAE.

Safran and Egyptair have come to an agreement to extend the partnership for the maintenance of Safran's A330ceo fleet. This action includes comprehensive thrust reverser support for the airline's eleven Airbus A330ceo aircraft.With the terms of this extended contract, Safran Nacelles' OEM1 guaranteed Maintenance, Repair, and Overhaul (MRO) solutions designed especially for the Airbus A330ceo thrust reversers will be utilised by EGYPTAIR MAINTENANCE & ENGINEERING. The services will be rendered at the AMES2 repair station of Safran Nacelles in Dubai, United Arab Emirates, guaranteeing EGYPTAIR's fleet receives timely and effective assistance.

Vincent Caro, CEO, Safran Nacelles said, "I am delighted that EGYPTAIR MAINTENANCE & ENGINEERING is renewing its trust in Safran Nacelles for the maintenance and the support of their A330ceo thrust reversers. We are fully committed to delivering services that meet EGYPTAIR MAINTENANCE & ENGINEERING needs".

The agreement covers unplanned repair services, asset management, and scheduled soft time maintenance, preventive primary maintenance carried out at operator-specified intervals that can be modified to suit the airline's operating schedule.

Alain Berger, Safran Nacelles' Executive Vice President – Customer Support & Services said, "Our priority is providing best-in-class services to our customers. We are very pleased to support EGYPTAIR MAINTENANCE & ENGINEERING in its A330ceo maintenance operations. They can count on AMES teams at the Dubai repair shop, who are fully mobilized to support EGYPTAIR MAINTENANCE & ENGINEERING on a daily basis."

The Trent 700 thrust reversers are manufactured by Safran Nacelles, the Original Equipment Manufacturer (OEM). Part of Safran Nacelles' broader services portfolio, Egyptair's maintenance coverage guarantees controlled maintenance budgets through tailored refurbishment work scopes at the appropriate times, contingent on the age and utilisation of an aircraft fleet – thereby preventing major disruptive and expensive unscheduled events.

Eng. Yehia Zakaria, Chairman & CEO of EGYPTAIR Holding Company, said, "We are delighted to reaffirm our trust and partnership with Safran Nacelles through the renewal of our service agreement. This renewal underscores our confidence in the unparalleled quality and reliability of Safran Nacelles' support solutions, and we look forward to continuously enhancing our cooperation to further elevate the operational efficiency of our fleet. With this extended collaboration, we are optimistic about exploring opportunities for expanding the scope of our partnership, ensuring an even more robust and mutually beneficial relationship in the future."

Eng. Walid ElKhafif, EGYPTAIR MAINTENANCE & ENGINEERING Chairman & CEO, "This extension of agreements further strengthens the trusted working relationship, reflecting EGYPTAIR's confidence in Safran Nacelles' ability to deliver exceptional services and support quality."

At today's MRO Middle East conference in Dubai, Safran Nacelles announced a long-term arrangement that would be supported by its global Maintenance, Repair and Overhaul (MRO) network. Among these resources is the component repair center-of-excellence at Aerostructures Middle East Services (AMES), situated in Dubai's Jebel Ali Free Zone, Jafza. AMES is a joint venture between Safran Nacelles and AFI KLM E&M (Air France KLM Group).

Abelo signed a deal for up to 20 ATR 72-600 at Dubai Airshow 2023

Ten ATR 72-600 firm orders and ten additional option orders were signed by the lessor during the Dubai Airshow.

Abelo, a top regional aircraft manufacturer ATR, and a prominent turboprop lessor, have inked a heads of agreement for a definitive order of ten ATR 72-600 aircraft, with options for an additional ten. This agreement demonstrates Abelo's ongoing dedication to utilizing the most recent advancements in turboprop technology. Notably, Abelo confirmed a deal for 10 ATR 42-600S, or the Short Take-Off and Landing version, and placed an order for 10 ATR 72-600 in July 2022.

Steve Gorman, the Chief Executive Officer of Abelo said, "In ATR aircraft, we have discovered the ideal solution to support Abelo's mission of connecting communities and businesses in an economically and environmentally responsible manner. Our aim is to expedite the transition from older aircraft to the most advanced, low-emission technologies, and ATR turboprops have emerged as the top choice for achieving this objective. Having already introduced our initial batch of new aircraft, we have great confidence that our investment will greatly enhance our portfolio and play a vital role in the success of our airline partners seeking outstanding performance, reduced emissions and enhanced passenger comfort."

In addition to supporting the shift to responsible aviation, these extra aircraft will enable the lessor to meet the increasing demand for reliable, economical, and efficient regional air travel links globally.

Nathalie Tarnaud Laude, ATR's Chief Executive Officer, said, "With a total of 30 ATRs ordered, Abelo's continued commitment to ATR is a testament to the strong market demand for fuel-efficient and cost-effective turboprops. Through their versatility, low operating costs and reduced CO2 emissions, they serve as the backbone of numerous regional airlines worldwide. Our strong relationship with Abelo relies on common purposes and visions, as well as on our joint recognition of turboprops' great value proposition today and tomorrow. We will remain committed to providing Abelo with the most innovative solutions long into the future."

Although Abelo's 2022 order will include the delivery of its first brand-new ATR before the year's end, the remaining aircraft will be delivered between 2026 and 2028.

Air-bp Jio boosts Indian footprint with new facility at Rajkot International Airport

Air bp, with its JV partner air bp-Jio, has opened a new fuel facility at the recently inaugurated Rajkot International Airport marking a significant milestone for air bp-Jio in India.

Air bp, in collaboration with its Joint Venture (JV) partner air bp-Jio, has expanded its presence in India with a new fuel facility at the recently inaugurated Rajkot International Airport. This marks a significant milestone for air bp-Jio, a leading international aviation fuel supplier in India. India stands as the third-largest domestic aviation market globally, positioning itself to become one of the fastest-growing aviation markets after the US and China. Currently boasting around 140 operational airports, the country anticipates expanding this number to 220 in the near term, reflecting a substantial increase from the 74 airports in operation in 2014.

Rajkot International Airport, located in Hirasar, Gujarat, is a greenfield airport with international hub status, serving the city of Rajkot and the broader Saurashtra region. The Airports Authority of India (AAI) owns the facility, capable of handling approximately 2,800 passengers during peak hours. As the 31st airport location for air bp-Jio in India, this expansion aligns with the country's ambitious plans for enhancing its aviation infrastructure.

The fueling operations at Rajkot International Airport commenced at the end of September 2023, with air bp-Jio completing an impressive 575 fuelings to date. The team worked diligently to secure regulatory approvals and deliver the fueling facilities, supporting the airport's official inauguration on September 10 2023, graced by Indian Prime Minister Narendra Modi. This initiative represents the first phase of air bp-Jio's facility at Rajkot International Airport, following the Indian Government's decision to develop it into a major international airport to meet growing demand.

India stands as the third-largest domestic aviation market globally, positioning itself to become one of the fastest-growing aviation markets after the US and China. Currently boasting around 140 operational airports, the country anticipates expanding this number to 220 in the near term, reflecting a substantial increase from the 74 airports in operation in 2014.

"Air bp-Jio excelled in making the fuel station ready in a short space of time with all regulatory compliances and approvals. The successful commencement of flight operations at Rajkot International Airport was very much dependent on air bp-Jio's service. The team worked hard and met the target, as promised," said, Diganta Borah, airport director, Rajkot International Airport.

Earlier this year, air bp-Jio received recognition as the best fuel provider in India from the International Council of the Associated Chambers of Commerce and Industry of India (ASSOCHAM). This accolade underscores air bp-Jio's commitment to delivering enhanced and efficient fueling services in India, emphasizing safety, on-time performance, digitized fueling services, and supply reliability. The air bp-Jio Joint Venture aims to solidify its position as the preferred partner for all stakeholders in the aviation fuel business across the country.

Gulfstream flies world's first 100% SAF powered Trans-Atlantic flight

The flight took place on a Gulfstream G600 aircraft powered by Pratt & Whitney PW815GA engines, departing from Savannah, the aircraft landed at Farnborough Airport in England after 6 hours and 56 minutes.

Gulfstream Aerospace Corp. has achieved a historic milestone by completing the world's first trans-Atlantic flight using 100% sustainable aviation fuel (SAF). The flight took place on a Gulfstream G600 aircraft powered by Pratt & Whitney PW815GA engines. Departing from Savannah, the aircraft landed at Farnborough Airport in England after 6 hours and 56 minutes. Gulfstream's G600, equipped with Pratt & Whitney PW815GA engines, completed the first trans-Atlantic flight using 100% SAF. This marks a significant milestone in advancing the use of renewable fuels in aviation.

The use of SAF, produced by World Energy and delivered by World Fuel Services, is a crucial step in reducing aviation's environmental impact. SAF has lower carbon, sulfur, and aromatics compared to traditional fossil-based jet fuel. The mission aimed to collect data on aircraft compatibility with low-aromatic renewable fuels, especially under cold temperatures during extended flight durations. The information gathered will aid Gulfstream and its partners in further advancing sustainable aviation.

"Gulfstream is innovating for a sustainable future," said Mark Burns, president, Gulfstream. "One of the keys to reaching business aviation's long-term decarbonization goals is the broad use of SAF in place of fossil-based jet fuel. The completion of this world-class flight helps to advance business aviation's overarching sustainability mission and create positive environmental impacts for future generations. We'd like to thank all our partners for their help in making this milestone flight happen, and for their ongoing partnership in collaborating with the extended SAF community to champion the aviation industry's path to 100% SAF usage," he further added.

The SAF used in the flight was 100% Hydroprocessed Esters and Fatty Acids (neat HEFA). This type of SAF has at least 70% lower lifecycle CO2 emissions than fossil-based jet fuel, contributing to a reduction in aviation's climate impact. The use of zero-added aromatics SAF has additional benefits, including a reduced impact on local air quality and very low sulfur content, contributing to lower non-CO2 environmental impacts.

"Gulfstream continues to break new ground in the sustainable aviation space, and we applaud them for completing this mission as we work to validate the compatibility of our engines with unblended SAF," said Anthony Rossi, vice president, Sales & Marketing, Pratt & Whitney Canada.

Gulfstream has also acknowledged the collaborative effort of its partners, including Pratt & Whitney, Honeywell, Safran, and Eaton, in achieving this milestone. The industry's move toward 100% SAF usage is a shared goal among these companies. Gulfstream has been at the forefront of sustainability efforts in business aviation. This flight follows Gulfstream's earlier achievement of being the first business jet original equipment manufacturer to fly on 100% SAF.

Gulfstream's completion of the world's first trans-Atlantic flight using 100% sustainable aviation fuel demonstrates the company's commitment to sustainability and innovation. This historic achievement contributes to the aviation industry's efforts to reduce its environmental impact and marks a significant step toward the broader use of renewable fuels in aviation.

AkzoNobel introduces innovative low-energy coating solution

AkzoNobel has introduced an industry-first architectural powder coating that is Qualicoat class one certified and can be cured at temperatures as low as 150°C.

Customers can reduce energy usage by up to 20% with Interpon D1036 Low E since it cures at temperatures up to 30°C lower than conventional powder coatings. Additionally, it has a 25% quicker curing time than traditional powders, making it possible to coat more products in less time.

An Environmental Product Declaration (EPD), an independently validated evaluation of a product's environmental impact over the course of its lifetime, supports the product's sustainability claims.

Jeff Jirak, Director of the Akzonobel said, "At a time when every business is looking to play its part in reducing energy and accelerating sustainability, Interpon D1036 Low-E will support our customers in reducing their carbon emissions – as well as helping us to achieve our own target of a 50% carbon reduction across the value chain by 2030. We're proud to be innovating solutions that are helping to tackle some of the shared issues around sustainability and energy conservation that coaters, applicators and our own business are facing. As we progress on the journey towards our net zero carbon ambitions, we'll continue to work closely with our customers to understand their needs and give them the products they require so we can build a more sustainable future together."

The new line is appropriate for a wide range of indoor and outdoor built environment applications, such as doors, railings, windows and building facades, or any other place where an architecturally certified product is normally used. Exceptional levels of durability to preserve colour integrity and performance are among its main characteristics.

In addition, they pledged to reduce carbon emissions by 50% along the entire value chain by 2030. By the end of the decade, AkzoNobel also wants to achieve 100% circular material usage and generate 50% of its revenue from sustainable solutions.

Emirates flies the first 100% SAF-powered A380 jumbo jet

Emirates is the first airline to utilise SAF on an A380 with complete system compatibility.

Emirates has successfully completed an A380 demonstration flight on 100% Sustainable Aviation Fuel (SAF), making it the first airline in the world to do so. Captains Khalid Binsultan and Philippe Lombet proudly led today's flight, which took off from Dubai International Airport (DXB) using one of four engines running entirely on solar energy. This flight served to highlight solar energy's potential as a drop-in replacement that satisfies the technical and chemical requirements of jet fuel while also being a more environmentally friendly option. When compared to traditional jet fuel, SAF can lower carbon emissions by up to 85%* across the fuel's life cycle.

Adel Al Redha, Chief Operating Officer, Emirates Airline said, "Emirates is the first passenger airline in the world to operate an A380 with 100% drop-in SAF powering one of four Engine Alliance GP7200 engines. This is another proud moment for Emirates and our partners, as we put words into action with the research into and the trialling of higher concentrations of SAF to eventually lead to industry adoption of 100% SAF flying. This marks another significant step in validating the use of SAF in one of the engines of the A380, a wide-body aircraft with four engines. The growing global demand for lower-emission jet fuel alternatives is there, and the work of producers and suppliers to commercialise SAF and make it available will be critical in the coming years to help Emirates and the wider industry advance our path to lower carbon emissions."

In conjunction with the Third International Civil Aviation Organisation (ICAO) Conference on Aviation and Alternative Fuels (CAAF/3), which is taking place in Dubai, the aviation industry, international organisations, regulatory bodies, and high-ranking officials who are in charge of making policy-related decisions will be present during the Emirates A380 demonstration flight. On the testing, technical evaluations, and data analysis for the flight, committed partners from Airbus, Engine Alliance, Pratt & Whitney, Neste, Virent, and ENOC have been working collaboratively.

Julie Kitcher, Airbus Executive Vice

From left to right: Edgar Steenwinkel, Senior vice President Technology at Virent; Klaas Pel, Global Head of Aviation Regulation, Neste; Farid Bastaki, Director, ENOC Aviation; Mikail Houari, President Africa and Middle East at Airbus; Adel Al Redha, Chief Operating Officer, Emirates Airline; Aziz Koleilat, Vice President of Global Sales and Marketing for the Middle East, Eastern Europe, and Turkey at GE Aerospace; Ahmed Safa, Divisional Senior Vice President Emirates Engineering; Alexandre Jay, A380 Chief Engineer, Airbus.

President Communications and Corporate Affairs said, "Seeing Emirates flying an A380, the world's largest airliner, powered by an engine running on 100% Sustainable Aviation Fuels is a symbolic moment. These fuels are the most effective way to address CO2 emissions in the aviation industry today and that they are supported increasingly by the world's leading airlines. SAF is vital to meeting the sector's target of net-zero emissions in 2050, but needs the backing of the whole industry. At Airbus, we are working to make all our aircraft 100% SAF-capable by 2030. We're also working with partners to grow the global SAF market in the coming years. Airbus's purpose as a company is to pioneer sustainable aerospace for a safe and united world. Through our partnership with Emirates, we're matching ambition with action."

As governments embrace more comprehensive plans to promote the manufacture and scaling up of SAF, demonstration flights such as the one carried out today set the path for future standardisation, qualification, and adoption for 100% SAF flying.

Amy Johnston, president of Engine Alliance, a 50-50 joint company between GE Aerospace and Pratt & Whitney said, "Engine Alliance and Emirates have a strong relationship that dates back 15 years to the A380 entry into service. We are proud to power Emirates' latest SAF demonstration flight – and share a commitment to more sustainable aviation looking forward."

The A380 demonstration flight adds to the increasing amount of research being conducted by the industry to assess the positive benefits of 100% SAF on aircraft performance by highlighting the performance and compatibility of SAF, making it a safe and dependable fuel source. Currently, the maximum SAF mix restriction for engines used in commercial aircraft is 50%.

Aziz Koleilat, Vice President of Global Sales and Marketing for the Middle East, Eastern Europe, and Turkey at GE Aerospace said, "Innovation and collaboration are the keys to reaching net zero carbon emissions by 2050 as this 100% SAF demonstration flight shows. GE Aerospace congratulates Emirates on this major achievement, and we are proud to be powering industry efforts toward a more sustainable future. All GE Aerospace and Engine Alliance engines can operate on approved SAF blends today and through extensive research and testing, GE Aerospace is helping lead the approval and adoption of 100% SAF in the aviation industry."

The 100% drop-in SAF that was utilised on this flight has properties that are similar to those of conventional jet fuel and contains renewable aromatics. Drop-in SAF is being deployed on an A380 aircraft for the first time, and it is anticipated that all of the aircraft's current systems will work flawlessly.

Graham Webb, Chief Sustainability Officer, Pratt & Whitney said, "Increasing the use of SAF is critical to achieving the goal of net-zero carbon emissions for aviation, and we are dedicated to ensuring all of Pratt & Whitney's engines and APUs are compatible with current and future SAF specifications, up to 100%. This in-flight demonstration on an Emirates A380 continues to build momentum towards establishing future standards for 100% SAF, which will help maximize the potential lifecycle emissions reduction for all commercial aircraft flying in the decades ahead."

Four tonnes of SAF were transported on the aircraft, consisting of HDO-SAK (hydro deoxygenated synthetic aromatic kerosene) from Virent and HEFA-SPK (hydro processed esters and fatty acids synthetic paraffinic kerosene) from Neste. Prior to the demonstration, ENOC assisted in securing the clean SAF made up of HEFA-SPK, mixed it with Sustainable Aviation Kerosene (SAK) at its facility in Dubai International Airport, and performed in-flight services.

Jonathan Wood, Vice President Commercial Management and Business Development from the Renewable Aviation business at Neste said, "Sustainable Aviation Fuel plays a crucial role in reducing the emissions of air travel, but to fully leverage its decarbonisation potential we need to enable 100% SAF use. Test flights like this Emirates A380-flight using Neste's SAF are an important step towards 100% SAF certification and we applaud Emirates for its efforts to help pave the way forward. Neste is working closely together with partners to accelerate the availability and use of SAF and we look forward to growing the supply of SAF also to Dubai."

One Engine Alliance GP7200 engine ran on 100% SAF, while the other three engines ran on regular jet fuel. Ad-

The flight was commanded by Captain Khalid Binsultan and Captain Philippe Lombet.

ditionally operating on 100% SAF was Pratt & Whitney Canada's PW980 auxiliary power unit (APU). Collaboration across industries brings in knowledge from companies like Virent, Airbus, Engine Alliance, Pratt & Whitney, ENOC, and Neste.

Dave Kettner,President and General Counsel, Virent said, "Virent congratulates Emirates Airline on another successful demonstration flight using 100% sustainable aviation fuel featuring Virent's cleaner-burning BioForm® SAK. With Virent's plant-based fuels technology, this test flight showed that 100% renewable fuel can meet current specifications and work flawlessly in today's commercial airline engines. It's critical that a consortium of companies, like this group, come together to bring sustainable aviation fuel into more widespread use. Virent will continue to collaborate with future-focused companies, and through this collaboration we can continue to reduce emissions and power a more fuel-efficient airline industry."

Robust engine testing was conducted last week for a single A380 Engine Alliance GP7200 engine using 100% SAF. The goal was to confirm that the engine could operate on the specially blended 100% drop-in SAF without experiencing any performance issues or needing any modifications. The modern Emirates Engineering Centre in Dubai was the site of the ground engine testing.

Saif Humaid al Falasi, Group CEO, ENOC, said, "At ENOC, we recognize the importance of working collaboratively with strategic partners and industry experts to realise a more sustainable future for all. We are pleased to have contributed to fueling Emirates' first 100% sustainable aviation fuel demonstration flight on an Airbus A380, which brings us a step closer to decarbonising the UAE's aviation sector and transforming it into a regional hub for low carbon aviation fuels. We remain committed to supporting the UAE's efforts in the aviation sector to ensure continued sustainable growth."

In early 2023 , Emirates' GE90-powered Boeing 777-300ER accomplished the region's first 100% SAF-powered demonstration flight. The first Emirates flights using Shell Aviation's SAF took off from Dubai International Airport (DXB) last month. 315,000 gallons of mixed SAF were provided by Shell for usage at the airline's Dubai hub.

The airline and Neste have extended their partnership to include the provision of over 3 million gallons of blended SAF for flights departing from Singapore Changi and Amsterdam Schiphol airports in 2024 and 2025. As supplies become available, Emirates looks for opportunities to deploy SAF at other airports. Currently, the airline uplifts SAF in France and Norway.

To assist in scaling the production and delivery of SAF, Emirates takes part in a number of working groups led by the UAE government and business, in addition to continuous stakeholder engagements. The airline actively participated in the creation of the UAE's National Sustainable Aviation Fuel Roadmap, which was introduced in January 2023 by the Ministry of Energy and Infrastructure and GCAA, and last year worked with the UAE GCAA to develop the country's power-to-liquid (PtL) fuels roadmap, which was spearheaded by the World Economic Forum and the Ministry of Energy and Infrastructure in the UAE.

Honeywell to provide cFBW system support for AIBOT eVTOL aircraft

A sustainable transportation ecosystem will benefit from the safe, dependable, and efficient functioning of Honeywell's Compact Fly-By-Wire technology.

The Compact Fly-By-Wire (cFBW) technology from Honeywell has been chosen by AIBOT to support the company's fully electric vertical takeoff and landing (eVTOL) aircraft. The next generation of aircraft avionics will be empowered by Honeywell technology, which will also build a sustainable transportation ecosystem.

The compact Fly-By-Wire system from Honeywell, which is as light as a paperback book, gives aircraft manufacturers—like AIBOT—more design freedom without sacrificing power or safety. The method makes it possible to eliminate traditional mechanical links that control the effectors, simplify maintenance processes, and lower expenses throughout the course of an aircraft's lifetime.

Additionally, it permits smooth remote control of the aircraft by converting operator instructions into flight control commands. The technology is especially well-suited for stabilising specially developed unmanned vehicles and providing a stable flying experience because of its envelope-limiting feature, which ensures safe operations.

"Our Compact Fly-By-Wire system is a ready-now solution to advance the future of sustainable flight. It is derived from decades of expertise providing similar systems for commercial airliners," said David Shilliday, vice president and general manager, Advanced Air Mobility, Honeywell Aerospace. "The collaboration will enable AIBOT to realize its vision of creating a sustainable and efficient transportation ecosystem," he further added.

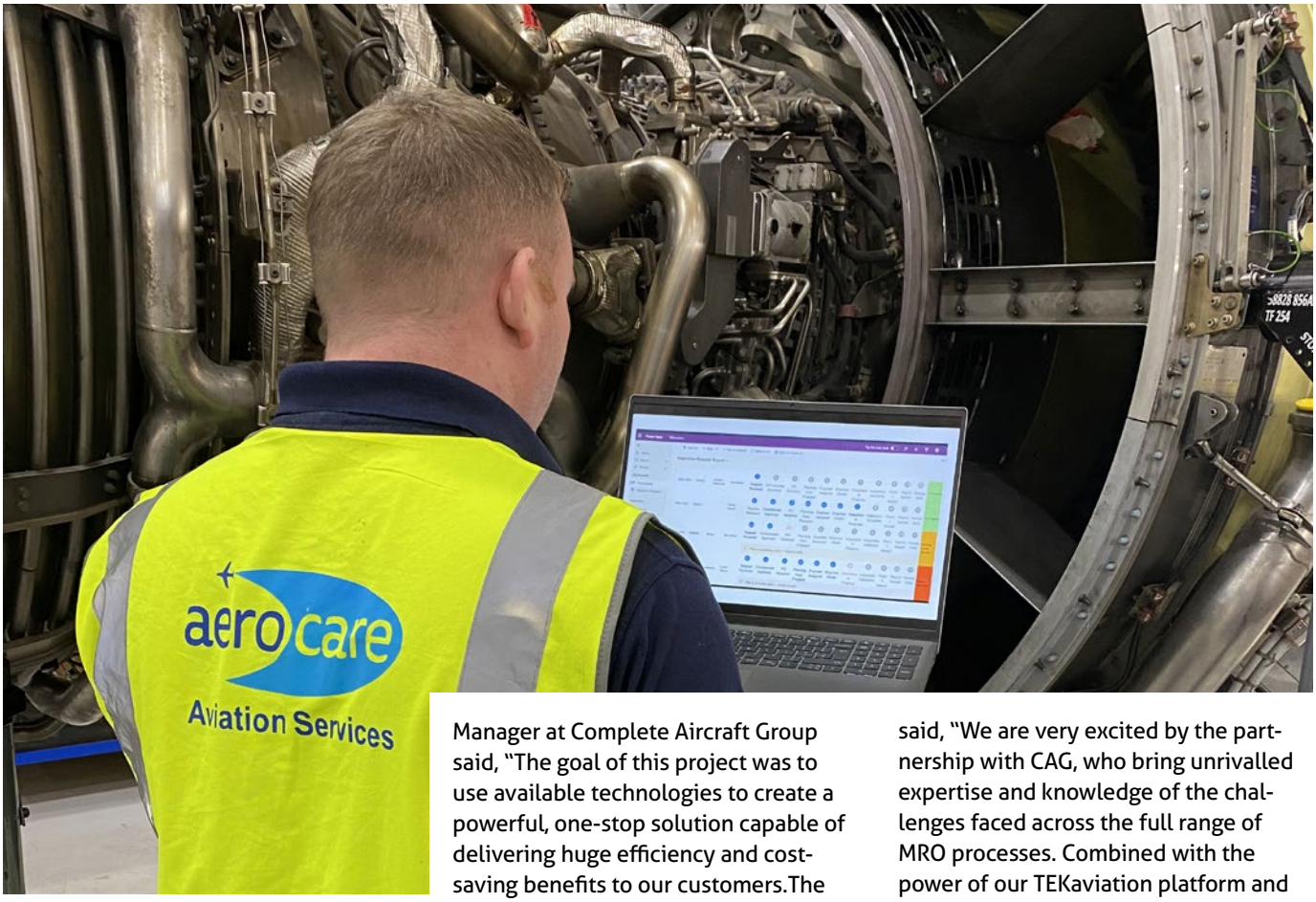
Eight electric motors power the AIBOT aircraft, which can carry six people including a pilot. With a target maximum range of 250 miles and a high cruise speed of 250 mph, the aircraft, with a maximum takeoff weight of 7000 pounds, is well-suited for short-haul use cases between cities and metropolitan areas worldwide.

"AIBOT is poised to revolutionize the urban air mobility market by utilizing the latest in cutting-edge, safety-critical computing platforms particularly those which bolster the high-performance processing, needed for our in-house developed next-gen algorithms," said Jerry Wang, Executive Chairman, AIBOT. "Collaborating with Honeywell is a huge step forward for us and will help us power the most advanced software-driven aiEVTOL platform," he further added.

AIBOT is set to begin manufacturing completely autonomous heavy unmanned aircraft in 2024, with applications including medical deliveries, high-speed inspection, cargo, and agricultural. The system architecture of this project is shared with our manned aiEVTOL designs, which will see their first flight in 2025 and the delivery of their whole product line by 2028.

TEKenable and the Complete Aircraft Group introduce a new boroscope maintenance software programme

Developed in collaboration with TEKenable's TEKaviation team, the technology will initially support engine boroscope services offered by Complete Aircraft Groupenabling engineers to rapidly submit data.



The goal of the new maintenance software solution being developed by Complete Aircraft Group (CAG) and global IT services firm TEKenable is to streamline compliance and reporting processes by utilising real-time, cloud-based data management. Developed from the ground up in collaboration with TEKenable's TEKaviation team, the technology will initially support engine boroscope services offered by CAG. It enables engineers to rapidly submit data related to the work, in the field, using any connected desktop or mobile device, improving turnaround times and thereby lowering associated expenditure.

Jason Davies, Business Development Manager at Complete Aircraft Group said, "The goal of this project was to use available technologies to create a powerful, one-stop solution capable of delivering huge efficiency and cost-saving benefits to our customers.The TEKenable team instantly understood the concept, developing an intuitive dashboard that allows each step of the boroscope checks to be uploaded in real-time. With the relevant data now instantly accessible, the process becomes much more efficient, with the system's automated reporting slashing the work hours required to get the engines back into service."

The two organisations have created a completely new method of working by leveraging the cloud to replace outdated paper-based processes and repetitive, time-consuming form filling. This has been made possible by their shared knowledge and sector expertise.

Peter Rose, Group CIO at TEKenable said, "We are very excited by the partnership with CAG, who bring unrivalled expertise and knowledge of the challenges faced across the full range of MRO processes. Combined with the power of our TEKaviation platform and an expert rapid delivery software team, we've created a solution that will support genuine business transformation."

Future plans include for the integration of additional features and modules, such as ELMS, the current personnel competency package used by CAG. With the aid of these advancements, a centralised, completely transparent source of truth for various maintenance activities will be established, giving consumers access to an abundance of current, real-time data.

For the time being, the first boroscope support solution is prepared for release, and CAG has already shown its array of business and commercial aviation clients the possible advantages.

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Northrop Grumman Corporation flies first Australian MQ-4C Triton

The multi-intelligence MQ-4C Triton is the only uncrewed high-altitude aircraft in the world performing persistent maritime surveillance today

Northrop Grumman Corporation, on Thursday, Nov. 9, at its Palmdale Aircraft Integration Centre in California, successfully completed the first flight of Australia's multi-intelligence MQ-4C Triton unmanned aircraft. A significant production milestone has been reached with this flight, advancing Northrop Grumman's plans to deliver Australia's first Triton in 2024. The multi-intelligence MQ-4C Triton, designed for the Royal Australian Air Force and the U.S. Navy, is the only unmanned, long-endurance, high-altitude aircraft capable of persistently gathering maritime intelligence, surveillance, reconnaissance, and targeting.

The maiden flight took place at 11:56 a.m. PST and lasted for around six hours and twenty-four minutes in total. Tests for basic aircraft handling and airworthiness, including engine, flight control, and fuel system inspections, were carried out. The Australian government announced in September that a fourth aircraft will be added, strengthening the fleet's resilience and enabling superior surveillance to continuously watch over and defend Australia's maritime interests.

Christine Zeitz, chief executive and general manager of Australia & New Zealand, Northrop Grumman said, "We are leveraging our deep expertise in uncrewed high-altitude long endurance aircraft to enable Australia to establish a superior long range maritime surveillance capability to monitor and protect Australia's maritime interests 24/7."

The multi-intelligence MQ-4C Triton unmanned aircraft system was declared to have gained initial operating capability (IOC) by the U.S. Navy on August 3, 2023. Australia's involvement in the Triton Cooperation Program had a significant impact on its system requirements. The defense forces of the United States and Australia will be able to pool data gathered by their respective Tritons, which is a crucial capacity, in one of the world's most strategically significant places.

Air Marshal Robert Chipman, Chief of the Royal Australian Air Force, said, "Triton expands Australia's intelligence, surveillance and reconnaissance capability by providing reliable real-time intelligence and situational awareness. Persistent surveillance enables better planning, greatly enhancing joint military responses and operations."

Australia has a wide range of security concerns, from disaster relief and humanitarian assistance to maritime surveillance of the crucial Indo-Pacific sea lanes. With the current four Australian Tritons under contract moving along with their production schedules according to plan, the systems which include sensors and communication nodes that may permit data sharing across warfighting domains and various mission needs.

Boeing to focus on MH-139A Grey Wolf helicopter production

Boeing has completed the RDT&E phase for the MH-139A Grey Wolf helicopter program, also delivering the sixth and final test aircraft to the U.S. Air Force in October 2023, for critical operational testing.

Boeing has achieved a significant milestone in the MH-139A Grey Wolf helicopter program by completing the Research, Development, Test & Evaluation (RDT&E) phase. The company delivered the sixth and final test aircraft to the U.S. Air Force in October 2023, allowing the Air Force to proceed with critical operational testing. The MH-139A, set to replace the UH-1N Huey, will play a crucial role in protecting intercontinental ballistic missiles across the U.S. and in transporting VIP and security personnel.

Boeing has successfully concluded the RDT&E phase for the MH-139A Grey Wolf helicopter program by delivering the sixth and final test aircraft to the U.S. Air Force. This paves the way for the Air Force to proceed with critical operational testing. Boeing is now transitioning towards low-rate initial production of the MH-139A Grey Wolf. The completion of the RDT&E phase allows Boeing to focus on building the first production aircraft. The first low-rate production aircraft is expected to be delivered to the customer in 2024.

Azeem Khan, MH-139 Program Director, Boeing said, "Delivering all of the RDT&E aircraft to the Air Force enables them to continue critical operational testing and allows Boeing to focus on building the first production aircraft. The Grey Wolf will provide crucial national security capability improvements to the Air Force. This is an important step in getting the aircraft into service."

Boeing has received a contract to build the first 13 MH-139A helicopters, with the first aircraft currently in final assembly. The company is set to provide up to 80 MH-139A Grey Wolf helicopters to the U.S. Air Force. This new helicopter is anticipated to bring improved national security capabilities.

The MH-139A Grey Wolf is designed to offer enhanced capabilities compared to its predecessor. The helicopter will have a critical role in national security, particularly in protecting intercontinental ballistic missiles and in the transportation of VIP and security personnel.

Robert Beyer, MH-139 Senior Program Manager, Leonardo Helicopters US:"With the final test aircraft delivered, we're headed into an exciting production phase. With the MH-139, the United States Air Force is getting a faster and more capable aircraft to bring them into a new era of service for this mission. Leonardo is incredibly proud of this aircraft, and we look forward to the continued partnership with Boeing and the USAF as we deliver additional Grey Wolf helicopters."

Leonardo Helicopters US, a key partner in the MH-139 program, expressed pride in the aircraft and looks forward to the continued partnership with Boeing and the U.S. Air Force. The collaboration aims to deliver additional Grey Wolf helicopters and bring the Air Force into a new era of service for this mission.

Boeing's completion of the RDT&E phase for the MH-139A Grey Wolf helicopter signifies progress toward transitioning to low-rate initial production and delivering enhanced capabilities to the U.S. Air Force. The helicopter is poised to play a vital role in national security and mission-critical operations.

Bombardier Defence delivers Seventh GlobalEye Aircraft to SAAB

Bombardier Defence has delivered Saab its seventh Global aircraft, which is prepared to be converted into Saab's Airborne Early Warning and Control system, known as GlobalEye used for surveillance.

Bombardier Defence is pleased to inform that Saab, a defence and security firm, has received its seventh Global aircraft, which is prepared to be converted into Saab's Airborne Early Warning and Control (AEW&C) system, known as GlobalEye. This new supply coincides with the two businesses' attendance at the Dubai Air Show 2023, where Saab will be showcasing GlobalEye's leading capabilities and Bombardier will be introducing its adaptable Global and Challenger business jets to the Middle East market.Contemporary corporate aircraft are becoming more widely acknowledged as vital resources for armed forces worldwide.

The most recent Global aircraft delivery from Bombardier is going to the Swedish Air Force. This will be Saab's second GlobalEye aircraft to be part of Sweden's armed forces. The seven aircraft that Bombardier supplied to the GlobalEye programme are an example of a fruitful partnership and speak to the company's long-standing and successful history of producing specialised aircraft for the defence sector.

Jean-Christophe Gallagher, Executive Vice-President, Aircraft Sales and Bombardier Defense said, "More and more countries are preparing for the future by choosing modern, more efficient business jets as strategic assets for their military fleet. With the rapid progression of technologies, there is a growing realization that business jets, such as our Global aircraft, can seamlessly integrate the equipment and capabilities that were traditionally carried by commercial aircraft."

Global business jets are more cost-effective to operate than commercial aircraft and can reach and depart from more critical places thanks to their ability to take off and land. When it comes to airborne surveillance systems intended for long-range air, marine, and ground surveillance, the Global aircraft's innovative wing design and steep approach certification provide manoeuvrability.

As a result, Saab's GlobalEye combines certain crucial features of the Global business jet, including as its cutting-edge avionics, over 11 hours of operational endurance, and industry-best maintenance intervals. The Global aircraft is well suited for situational awareness missions covering wide areas since it has enough cabin room for workstations and mission equipment to provide optimal crew conditions.

Leonardo to deliver second C-27J Spartan aircraft for Slovenian defence forces

Leonardo has signed a Purchase Contract to provide the Slovenian Defence Ministry with a second C-27J Spartan aircraft along with related logistics and training services.

Leonardo, in collaboration with the Air Armaments and Airworthiness Directorate of the Secretariat General of Defence/National Armaments Directorate, has signed a Purchase Contract to provide the Slovenian Defence Ministry with a second C-27J Spartan aircraft along with related logistics and training services. Leonardo has signed a contract to supply the Slovenian Defence Ministry with a second C-27J Spartan aircraft, following the Italy-Slovenia Government-to-Government agreement (G2G) signed in November 2021. This agreement aims to strengthen bilateral cooperation between Italy and Slovenia.

The C-27J Spartan is known for its versatility and can perform various types of defense and civil protection missions. It is designed for military transport, paratrooper and materials airdrops, tactical troop support, special forces operations, medical battlefield evacuation, humanitarian assistance, and natural disaster response. The C-27J Spartan purchased by Slovenia also features a FireFighter configuration. This includes the second-generation palletized MAFFS II (Modular Airborne Fire Fighting System) from United Aeronautical Corporation, a world leader in advanced aerial firefighting application systems.

Dario Marfè, Senior Vice President of Commercial, CSS&T & Proprietary Programs Business, Leonardo's Aircraft Division said, 'Deployed in the most challenging geographic, environmental and operating contexts, Leonardo's C-27J Spartan is an aircraft capable of performing various types of defence and civil protection missions. Extensive experience with air forces worldwide makes it the ideal aircraft for military transport missions, paratrooper and materials airdrops, 'last mile' tactical troop support, special forces operations, medical battlefield evacuation, humanitarian assistance and natural disaster response.'

The C-27J Spartan Next Generation features a glass cockpit with new avionics, five multi-functional color screens, a radar system for tactical transport missions, and advanced communication systems. It is designed to operate in high-threat environments with features like in-flight refueling, self-protection, secure communications, and ballistic protection systems. The aircraft is designed with a system architecture that ensures interoperability with other transport aircraft. It can be easily integrated with various mission kits, allowing it to be quickly transformed for different mission configurations.

Leonardo has signed a Purchase Contract to supply the Slovenian Defence Ministry with a second C-27J Spartan aircraft. The C-27J Spartan is known for its versatile capabilities, including military transport, paratrooper operations, medical evacuation, and firefighting. The contract strengthens the bilateral cooperation between Italy and Slovenia and underscores the aircraft's adaptability for various defense and civil protection missions.

Embraer names José Gustavo as VP, Sales and BD for Europe and Africa

José Gustavo possesses a strong track record in sales for Embraer, including the A-29 in Africa and the C-390 sales campaigns in Europe.

José Gustavo has been named as the new Vice President of Sales and Business Development for Europe and Africa by Embraer Defence & Security. Based in Lisbon, Portugal, he will report to Frederico Lemos, the business unit's CCO. José Gustavo, who has over 20 years of expertise, has a wealth of vast international experience from places like Turkey and the United States. The executive possesses a strong track record in sales for Embraer, including the A-29 in Africa and the C-390 sales campaigns in Europe. He has had various senior positions in Defence programmes, including roles in the NATO Command Structure.

José Gustavo has taken an active part in initiatives that have developed the NATO configuration for the A-29 (A-29N) and added capabilities for the C-390, in addition to integrating with Embraer's other business units.

Frederico Lemos, CCO of Embraer Defense & Security said, "José Gustavo has been a key executive in the successful sales campaigns we have conducted in Africa and Europe. He has in-depth knowledge of the region and a successful track record over his more than 20-year career. His appointment as Vice President of Sales and Business Development will not only bring gains for Embraer Defense & Security, but for the company as a whole."

José Gustavo started out as an officer in the Portuguese Air Force. After joining OGMA in 2013, he quickly moved on to Embraer Defence & Security, taking on sales and business development duties throughout several European, African, and Middle Eastern nations.

With postgraduate degrees in Commercial Management (INDEG), International Relations (UAL), Sales Leadership (INSEAD), Advanced Project Management (Catholic Lisbon School of Business & Economics), and Advanced Negotiation (Nova School of Business and Economics), the aeronautical engineer graduated from the Portuguese Air Force Academy and Instituto Superior Técnico.

International CALENDAR

Date	Event	Venue
06 - 08 Dec 2023	Air Expo India	New Delhi, India
14 – 15 Feb 2024	MRO Latin America	San José, Costa Rica
20-24 Feb 2024	Singapore Airshow	Changi Exb Centre,Singapore
27-29 Feb 2024	MRO XPO INDIA	New Delhi, India
27-29 Feb 2024	Aircraft Interiors INDIA	New Delhi, India
28-29 Feb 2024	Aerospace & Defence MRO South Asia 2024	New Delhi, India
28 – 29 Feb 2024	Aviation Festival Asia	Suntec, Singapore
28 Feb – 01 Mar 2024	Aero-Engines Americas	Miami, FL, USA
29 Feb – 01 Mar 2024	Engine Leasing, Trading & Finance Americas	FL, USA
05 –0 6 Mar 2024	Aircraft Interiors Middle East 2024	Dubai, United Arab Emirates
05 –0 6 Mar 2024	MRO Middle East	Dubai, UAE
7 – 8 Mar 2024	PBExpo 2024	Miami, FL, USA
12 – 14 Mar 2024	IATA WCS	HONG KONG
9 – 11 April 2024	MRO Americas	Chicago, USA
17 – 18 April 2024	Aerospace Tech Week Europe	Munich, Germany
24 – 25 Apr 2024	Aero-Engines Asia-Pacific	Hong Kong
28 – 30 May 2024	Aircraft Interiors EXPO	Hamburg, Germany
28 – 30 May 2024	EBACE 2024	Geneva, Switzerland
30 Apr – 2 May 2024	Global Aerospace Summit 2024	Abu Dhabi, UAE
02 –04 June 2024	IATA AGM & World Air Transport Summit	Dubai, UAE
05 –06 Jun 2024	Engine Leasing, Trading & Finance Europe	London, UK
06 – 08 Jun 2024	France Air Expo Lyon 2024	Lyon, France
12 – 14 June 2024	Aircraft Cabin Innovation Summit USA 2024	Dallas Fort Worth, Texas

For Editorial : editorial@mrobusinesstoday.com
For Advertisement : advt@mrobusinesstoday.com
Contact Us : info@mrobusinesstoday.com