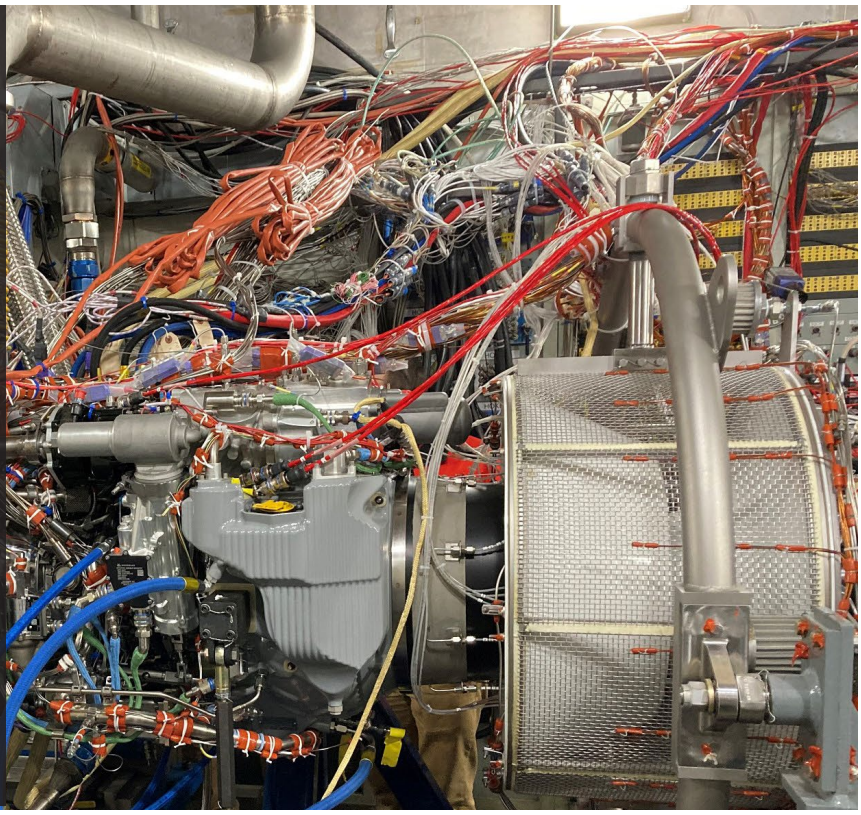
MRO BUSINESS TODAY

April 01st, 2022

GE begins testing on NextGen 3000 shaft horsepower T901 engine for US Army's Black Hawk, Apache and FARA



The First Engine to Test milestone is being performed in a recently upgraded test cell at GE's Lynn, Mass., facility.

GE Aviation has begun the testing on the next-generation rotorcraft engine, the first T901-GE-900 that will power the U.S. Army's UH-60 Black Hawk, AH-64 Apache, and Future Attack Reconnaissance Aircraft (FARA) aircraft in the future. The U.S Army had selected GE's T901 engines for the Engineering and Manufacturing Development (EMD) phase of the Improved Turbine Engine (ITE) program to re-engine its Apache and Black Hawk fleets back in 2019. The Army also selected the 3,000-shaft horsepower T901 for the Future Attack Reconnaissance Aircraft (FARA) program.

GE T901 Program Director Tom Champion said, "We're excited to get testing started on this engine. It's the biggest milestone to date in the ITE program and the result of the strong collaboration between the GE and U.S. Army teams. The early testing data we've gathered indicates the engine is performing in line with our expectations and Army requirements."

Compared to its predecessor, the GE T700, the T901's 50 percent power increase restores aircraft performance, while has 25 percent better specific fuel consumption reduces fuel usage and carbon emissions. Increased component durability will lower life cycle costs.

The First Engine to Test milestone is being performed in a recently upgraded test cell at GE's Lynn, Mass., facility. GE has upgraded three test cells in Lynn to efficiently complete the comprehensive T901 EMD engine test program. The test cell upgrades include systems to absorb the increased power and allow no-load operation of the engine, improved instrumentation capability, and upgraded test controls. T901 EMD engine testing will also be performed at GE's Evendale, Ohio, facility, as well as government facilities.

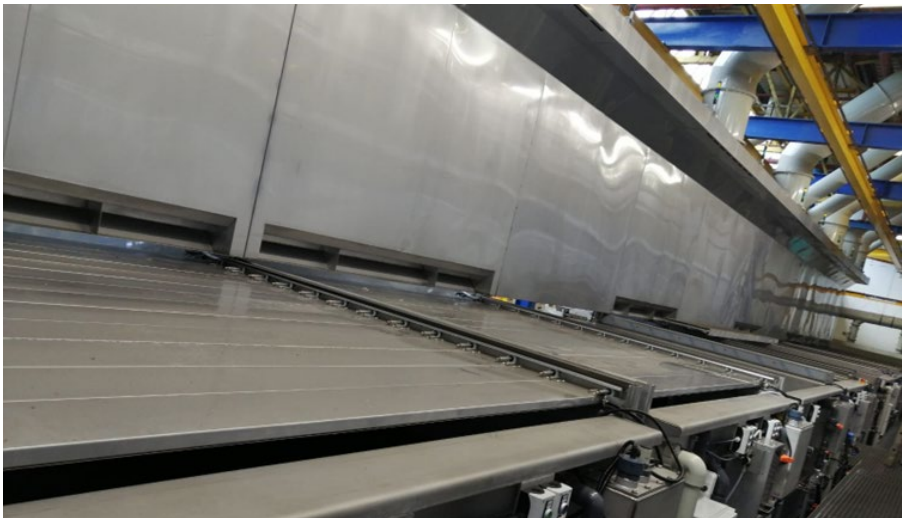
GE's use of advanced materials pioneered through GE's commercial engine lines, including 3D-printed (additive) manufactured parts and ceramic matrix composites, are key technologies enabling the T901's performance. The T901 also maintains the same aircraft mounting and installation envelope as the T700.

Testing of the first engine is the start of a multi-year test campaign to reach full Army qualification. During the remainder of testing for the first engine, the integrated test team will perform a number of simulated flight conditions to collect performance data of the highly instrumented test engine.

“State of the art chemical cleaning lines for engine MRO”

Surface Finishing Engineering Ltd were selected to undertake a critical project for the world-leading provider of maintenance repair and overhaul of aviation jet and turboprop engines and components. The client required a semi-automatic chemical clean line due to an expansion programme of their current cleaning bay. Chemical tanks were required to accommodate the cleaning of larger engine variant hardware which the current tanks did not have the capacity to do. SFE’s highly skilled, collaborative team were able to provide the perfect, bespoke solution to encapsulate the customers’ requirements, within the specified time and budget.

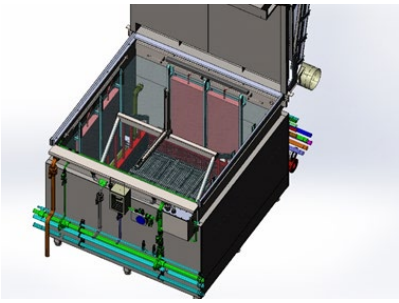
A two-phase installation approach was selected for this project; minimal site disruption was paramount. Live MRO operations were to continue during deconstruction and installation phases therefore thorough and detailed testing was conducted during an extensive Factory Acceptance Testing stage. The teams at SFE work in unison to ensure plant build and assembly is as comprehensive as possible in the manufacturing shop; the client is then able to see the lines operational before disassembly in modular form and delivered for installation. This approach keeps costs low and onsite disruptions to a minimum.



The highly-skilled and specialist teams at SFE ensure all activity is planned and co-ordinated. The client’s statement of requirements is taken as a basis to design the equipment with the highest levels of technical knowledge and best practice. Improvements and suggestions to initial requirements were discussed and agreed during early equipment workshops – a key element for SFE with every client to ensure collaboration and understanding right from conception stage. Detailed plans of work were agreed with design, manufacturing and project teams; the dedicated Project Manager oversees every detail with the Site Co-Ordinator. All information was regularly fed to the client to keep channels of communication open and clear at all times. Thorough and comprehensive health and safety procedures were regularly conducted and approved by the customer and all kept inline with latest regulations set by the Health and Safety Executive.

The key features of the equipment included:

- New structural gantry
- 4 x 2 tonne hoists on a single monorail – semi-automatic radio controlled hoists
- Thermal Fluid heating system
- Stainless Steel walkways
- New tanks
- Control System & PLC
- Ultrasonic Transducers in selected tanks
- Complete new LEV and fume abatement equipment



The extraction system installed was particularly impressive and a massive improvement from the existing provisions the client had. The system was meticulously calculated in line with regulation and the highest standards. All roller shutter lids on the tanks were interfaced with industry leading fume extraction system design. This massively boosted efficiency and was a huge cost saving for the client.

Equipment provided by SFE is expertly tailored to client and process requirements; all aspects are carefully considered and planned. Design is precise, manufacturing is of the highest quality. The chemical cleaning was constructed using high-grade stainless stell 316L throughout. Having heated stations hard piped to the thermal fluid heater, stainless steel heating coils carefully used and planned, without compromising the aesthetic appeal of the plant. Cladding ensured that from the customer’s view, the plant was aesthetically pleasing whilst covering the lagging, double skinning and bolted flanges, keeping the equip-

ment safe and efficient for use. All pipework was thoroughly tested and welded to Class A specification. Only the highest quality materials and workmanship is used on an SFE installation.

The high-spec control software and PLC operating a Scada system ensured the plant was easy to operate using the purpose built HMI. Clear signalling ensured the whole plant could be observed in real time; the filling and emptying of tanks, pumping, temperature levels and much more could all be controlled by the touch of a button. From a safety perspective, the control system warns and signals if any aspect of the plant is not operating as it should. This is crucial especially in a facility such as this where a dedicated chemical store was built to be connected directly to the tanks for automatic chemical feed.

The impressive plant SFE have installed for this prestigious client has a massive capacity to process at least ten engines per week. The operators are able to load and unload from both ends of the plant making the end-user operation clean and efficient. The operator also has manual interaction with the intelligent hoist system and manual intervention systems.

The installation has been recognised by the internal client board and other customers in the industry as exceptional. The capability, the capacity and the thorough, meticulous design combined with the visual aspect always in consideration makes this installation particularly outstanding. It has continued and strengthened the existing relationship with the client and has proven that SFE truly are world leaders in the surface engineering and treatment sectors.

For more information :

Vic Delveir - Business Development Director
T 0048 1902 409186 Ext205
E v.delveir@sfeuk.com

Surface Finishing Engineering Limited

Unit 16 Webner Industrial Estate, Ettingshall Road,
Wolverhampton , WV2 2LD.
Tel: 01902 409186 Fax: 01902 497265 W: www.sfeuk.com

Expecting the robust material demand, EirTrade expands its dismantling capability in Dublin

The initial focus will be on the CFM platform, but EirTrade will soon expand into other engine platforms as well.

EirTrade Aviation has augmented its dismantling capability in Dublin with the addition of engine disassembly. This will perfectly complement its existing aircraft disassembly activities which are based in the Company's AFRA accredited facility in Knock, Ireland West. The initial engine disassembly will be carried out under an agreement with Lufthansa Technik by Lufthansa trained engineers who will be responsible for the disassembly of the first eight engines in EirTrade's order book, after which all future work will be carried out by the Company's own engineers.

Lee Carey, VP Asset Management at EirTrade Aviation said, "The introduction of the engine disassembly facility in Dublin will enable us to enhance the organization's end-of-life product offering to the market and become a complete end-of-life solution provider. This vertical integration strategy will enable EirTrade to mitigate third party and logistical costs and enable the organization to gain access to material quicker to support our global client base."

"Our initial focus will be on the CFM platform; however, we will be looking to expand our capabilities to cover other platforms in the near future and we'll be offering these services to the open market as well as catering for our own engines. The demand for engine USM is strong and we anticipate that demand will continue to grow as the industry recovers from the effects of COVID. Our location in the heart of the aircraft leasing community in Dublin, alongside our relationships with the community itself, will be a key factor. During the market downturn, the fact that EirTrade was able to offer tailored asset management solutions encouraged asset owners to come to EirTrade to manage their assets and maximize the realizable value of their aircraft," Carey further added.

With the demand for narrow-body aircraft expected to continue, EirTrade has also invested heavily in certain widebody platforms such as the CF6-80, RB211 & PW4000 engine types. They expect this surge in demand for material to continue as deferred maintenance events now being undertaken are resulting in an augmented demand for USM to support these activities.

Airborne Engines, Arrow Aviation, Keystone Turbine Services & National Airways Corporation enhance capabilities

The four FIRST network members of Rolls Royce will now be able to provide world-class service for both the M250 and RR300 product lines.

The four FIRST network members of Rolls Royce have enhanced their capabilities to include certified service for RR300 engines. These include Airborne Engines, Arrow Aviation, Keystone Turbine Services, and National Airways. Each of them is certified as Authorized Maintenance Repair & Overhaul Centers (AMROC). Each of these companies had previously been certified Rolls-Royce M250 maintenance centers and will now be able to provide world-class service for both the M250 and RR300 product lines.

Scott Cunningham, Rolls-Royce Program Director – Helicopters said, "We congratulate Airborne Engines, Arrow Aviation, Keystone Turbine Services, and National Airways Corporation for increasing their capabilities and commitment to Rolls-Royce customers around the world. These strong FIRST network members help enhance our global network of authorized maintenance providers, giving operators the maximum level of flexibility and competition for local service and support on their Rolls-Royce helicopter engines."

With more than 16,000 turboshaft and turboprop engines in service and 4,500 customers worldwide, the Rolls-Royce FIRST network provides M250 and RR300 operators with a global network of authorized MRO service centers. The FIRST network includes more than 30 approved, licensed service centers, and its competitive structure means operators can find affordable and reliable service anywhere for Rolls-Royce M250 or RR300 engines.

The proven Rolls-Royce M250 and RR300 engines have powered more than 260 million flight hours of dependable service around the world. To date, more than 33,000 of these workhorse engines have been delivered to the marketplace.

The M250 and RR300 are manufactured in Indianapolis, Indiana, where a USD 600 million Rolls-Royce investment in modernization and technology programs was recently completed, including state-of-the-art advanced manufacturing.

Post-pandemic MRO Inventory planning, a whole different ball-game

MRO Inventory planning is an impossible number game. The managers often face the challenge of maintaining thousands of items, with specific features that require time-consuming calculations.

Aviation MRO inventory generally includes:

- All maintenance spares stocked to supply unplanned breakdowns and scheduled maintenance.
- The consumables needed to keep the maintenance processes running.
- Spares stocked by OEMs (original equipment manufacturers) to service the equipment you've purchased from them.

Today, Aviation MRO Organizations without an optimized aviation inventory run the risk of over-paid and under-performing assets.

How to tackle a massive amount of obsolete inventory?

In order to avoid pricy shortages, inventory managers of an MRO often choose to work with caution when it comes to determining stock levels. But that strategy has its cons in terms of costs. Inventory consumes space, may get damaged, and sometimes can become obsolete – which carries surplus inventory costs on an organization. Over time, a massive amount of unused/obsolete inventory translates into waste and loss. When asked about tackling this problem of uncertain demand, around 80% of aircraft spare parts, where planners can't predict what part will need to be replaced, where, or when, Brad Young, President of SkyTower Aviation Services said, "This is the Billion Dollar question. First, we look at fleet trends, maintenance planning trends, high failure units, ATA chapter patterns, and market patterns." Here communication is the key. "Talking with our customers about their short-term maintenance schedules and inventory pain points is still the best way to plan inventory in an effective manner," he further adds. Certain MROs like the FL Technics leverage their integrated MRO network capacity and capabilities both, in terms of resources and geography. In other

words, FL Technics is able to tailor and adapt possible solutions even in ad hoc cases by using and combining different business lines within the FL Technics group, including – owned stock of parts and materials, in-house logistics and supply chain solutions, a vast network of partners and clients (OEMs and distributors), their own production and repair shops (including dedicated FL Technics Engine Services business), and of course the base and line maintenance capabilities say Giedrius utautas, Marketing Manager at FL Technics. The range of such resources awards us flexibility and a selection of possible solutions when it comes to the sourcing of spare parts. He further goes on to say that we are actively investing in extending our own asset pool/stock, not only by purchasing selected parts and components but also by acquiring aircraft for teardown projects (one of such is currently being finalized at one of our MRO hangars). Such teardown projects allow us to retrieve a large number of airworthy/serviceable components and use them in our own projects as well as resell and supply our clients and partners.

How to reduce inventory investment and improve service?

There is a general observation that MROs end up buying surplus spare parts leading to excess spending and surplus inventory, leading to tied-up capital in inventory. Despite this many times, the target service levels are not achieved. When asked about the ways to reduce inventory investment while improving service levels, Brad said, "This is an accurate observation. Capital is king and the MROs are making a decision to make such investments. In my opinion airlines and MROs can do a better job of incorporating suppliers to assist in planning, delivery, and cost control." According to Giedrius, risk management, rigorous analysis, and evaluation, as well as own capacity of resources play a crucial role in such scenarios. You need to have highly experienced teams to be able to control these aspects as well as the global perspective of trends and needs within the aviation/MRO industry. FL Technics boasts such capacity and as mentioned previously is set to further increase investments in asset business, including high-value assets (engines, LGs, APUs).

Optimized Inventory

The right balance between demand and supply ensures an optimized inventory. Optimized inventory maintains a level of spares inventory that virtually eliminates out-of-stock conditions while improving efficiency and cutting inventory costs. Optimized spares inventory suggests that an MRO organization is putting its inventory investment where it should & when it should, without incurring unhindered future risks. An optimized inventory forms a continuous enhancement loop that produces tangible, sustainable results over the period of time – driving asset performance, competitive benefit, and positive bottom-line results.

Are newer aircraft posing more challenges to inventory planning?

Nowadays new aircraft are introduced every other day with the latest features and advanced technology, in such times planning an inventory of different and constantly updated fleets and different aircraft configurations is a bigger challenge. Out of all the aircraft introduced, many of them fall off or fail to make an impact. At Skytower we stick to what we know, which is Boeing and Airbus. It is a very niche industry and all successful companies specialize in one way or another says, Brad Young. Some specialize in business model, ATA Chapter, Sale vs. Repair, Core products, etc. Specialization is the key to success, he further adds. FL Technics mainly focuses on new generation aircraft, that our MRO teams are certified for and can work on various projects, from the base and line maintenance to engineering and DOA comments Giedrius utautas. Meaning if we are working on any client aircraft or fleet, we can support it with our aftermarket services and source parts and materials on-demand based on synergies described above, he further adds.

AOG situations come every day, that's the beauty of a challenge...

However, the biggest challenge that an Inventory planner can face is the unavailability of a particular spare during an AOG situation. Naturally, such situations can come from time to time. In most cases, we are able to resolve and meet the demand (yet again leveraging the scale and integrity of FL Technics group) said Giedrius. In the future, such strategy and approach will be further developed by expanding our certifications, investing in assets, and new businesses across the globe. Answering the question regarding financial and operational consequences – obviously, it depends on negotiations, but the outcome will most likely be related to increased costs (reduced profit), or simply time delays of a certain level, he added.

We face such situations almost every day says, Brad. Experience is the problem solver for this challenge. Each situation

is coming with unique circumstances that cannot always be mitigated or planned for. Our strategy is to learn from previous situations, plan as much as possible, and remain agile he continues further.

Inventory Management software

Since forever, inventory management software has lent a helping hand to MROs to ensure that they have enough inventory to meet the demand, minimizing costs at the same time. Such software provides real-time stock-level insights and automates replenishment. Besides this the inventory management software tracks historical trends, making it easier to schedule orders to build up stock when high demand is anticipated and to decrease orders at off-peak times. However, the COVID-19 pandemic was an exception to the above rule. No software predicted the outcome of the pandemic on the aerospace industry.

COVID-19 pandemic changed the rules of the game...

Even during and early post-pandemic time, many MROs continued to buy engines for teardown to expand the inventory. Industry predictions were that with the re-opening of the market the demand for spares will rise, and that is exactly what happened. Certain MROs like Next level aviation expanded their operations in Ireland anticipating strong USM demand. Their new Ireland subsidiary plans to support the customers, in Aircraft on Ground (AOG) situations, by strategically placing used serviceable material (USM) inventory in Ireland. As per the predictions, Next Level Aviation -Ireland is expected to grow to USD 100MM+ in annual revenues within five years through USM sales and used aircraft/engine asset transactions. Jack Gordon, Chairman, and CEO of Next Level Aviation said, "This new subsidiary will expand our geographic footprint by strategically placing USM inventory in Ireland, closer to our EMEA customers and trading partners. The establishment of Next Level Aviation-Ireland, Ltd. will also mark our entrance into the used aircraft/engine asset trading business, where NLA seeks to develop a reputation as an efficient and reliable counterparty in the monetization of asset portfolios by airlines, leasing companies, and financial owners."

APOC opened a new warehouse facility in 2021, at the peak of the pandemic in Miami to meet the expansion of its narrowbody inventory and consignment program. This is the second part of its ongoing strategic plan to expand the global footprint

C&L Aerospace invested heavily in additional inventory to meet customer demands during the pandemic time with the purchase and teardown of 15 aircraft. "Despite the market uncertainty over the past year, we are committed to continuing investing in the regional and corporate aircraft we support. These inventories allow us to be preferred partners for our customers who rely on us to support their needs," said Chris Kilgour, CEO of C&L Aviation Group

The market forecast

The Chinese MRO market has almost reached the pre-pandemic levels, while the Indian market is hopeful of a rapid comeback by the end of this year. Looking at these trends, Brad predicts that post-pandemic times will see the highest levels of demand and volume that the industry has ever seen. Pre-Covid, E-commerce was increasing demand for freight which was driving MRO volume.

Covid has once again shifted consumer patterns and the population is utilizing E-commerce for everyday items which will continue to drive freight, he adds.

The passenger side of the industry will be serving pent-up demand from consumers that have had the travel bug through Covid, and people will not only want to catch up on travel but will travel more often as they will have a new appreciation for it, Brad concludes.

FL Technics indicated a strong recovery in US and EU as well and is strengthening our teams and supply chains in respective regions (e.g. recently announcing new VP Business Development in Americas, to expand our assets trading business in the continent) said Giedrius. For us, the Americas play an important role when it comes to high-value assets projects (engines, landing gears, APUs) as well as aircraft redelivery projects, where we leverage our global MRO presence. On the other hand, in Europe, we face unexpected uncertainty caused by the recent war escalation in Ukraine. We spectate similar uncertainty across all MRO business areas, including aftermarket, causing a slowdown in previously strong expectations of recovery, he signs off

Pratt & Whitney GTF Advantage engine a step closer using 100 percent SAF

The GTF Advantage represents the greenest, lowest emission engine in the industry.

The GTF family has lowered fuel consumption and carbon emissions by up to 20 percent.

Pratt & Whitney successfully tested the GTF Advantage engine configuration with 100 percent sustainable fuel. The test took place in the West Palm Beach facility and marks a key step on the road toward 100 percent SAF operation of GTF-powered aircraft. The test is also a key element of an extensive development program to ready the GTF Advantage for entry into service in 2024, by validating the engine's performance on 100 percent SAF in thrust transients, starting, and operability

Graham Webb, chief sustainability officer at Pratt & Whitney said, "We're thrilled to have successfully tested the GTF Advantage engine on unblended SAF. The GTF Advantage represents the greenest, lowest emission engine in the industry, and it is now demonstrating full operational capability for the greenest aviation fuels of today and tomorrow. Operation on 100 percent SAF is a key component of the industry's commitment to net-zero carbon emissions by 2050 and the completion of these tests get us closer to that goal."

Pratt & Whitney has been actively involved in testing SAFs for almost two decades and helped to establish the technical standards that allow today's engines to operate on SAF blends of up to 50 percent with standard kerosene. Pratt & Whitney is working towards validating its engines to operate with 100 percent SAF, and the company

continues to collaborate closely with the Commercial Aviation Alternative Fuels Initiative (CAAFI) and ASTM International in service of that goal.

Sean Bradshaw, technical fellow for sustainable propulsion at Pratt & Whitney said, "Sustainable aviation fuels are central to the challenge of decarbonizing aviation and reaching our industry's net-zero goal. Validating and certifying the GTF Advantage engine on 100 percent SAF will ensure this engine's ability to deliver sustainable propulsion to our customers over many decades of service. We remain dedicated to working with the industry on creating a viable path for SAF development, production, and distribution."

Pratt & Whitney used 100 percent Hydroprocessed Esters and Fatty Acids Synthetic Paraffinic Kerosine (HEFA-SPK) fuel acquired from World Energy for the test. HEFA-SPK is a specific type of hydrotreated vegetable oil fuel used in aviation and is considered a leading alternative replacement for conventional jet fuel by CAAFI due to the sustainability of its feedstock.

The GTF is the world's most efficient and sustainable single-aisle aircraft engine. The GTF family has lowered fuel consumption and carbon emissions by up to 20 percent. As a result, GTF engines have saved more than 600 million gallons (two billion liters) of fuel and more than six million metric tonnes of CO_2 since entering service in 2016. The engine's revolutionary geared fan architecture is the foundation for more sustainable aviation technologies in the decades ahead.

Neste to supply DHL with 320,000 tons of Neste MY Sustainable Aviation Fuel

In its Sustainability Roadmap, Deutsche Post DHL Group has committed to using 30 percent of SAF blending for all air transport by 2030.

This is a significant step towards decarbonizing aviation logistics with strategic collaboration.

In what seems to be one of the largest sustainable aviation fuel deals, Neste will supply DHL with approximately 320,000 tons (400 million litres) of Neste MY Sustainable Aviation Fuel. This is one of the most significant steps taken by Neste and DHL Express towards decarbonizing aviation logistics by expanding their existing cooperation with a new strategic collaboration.

Peter Vanacker, President, and CEO of Neste said, "This milestone agreement, our largest ever for SAF, underlines the growing need and urgency – as well as the commitment – to act on aviation-related emissions. We are pleased to take this significant step together with DHL, which shows the joint ambitions of both companies and is further progress in our journey towards creating a healthier planet for our children."

Neste and DHL have been working together since 2020 making Neste MY Sustainable Aviation Fuel available for DHL's operations. In 2020, DHL Express became the first cargo operator to use Neste MY Sustainable Aviation Fuel on flights departing from San Francisco International Airport and Amsterdam Airport. In 2021 DHL and Neste extended that cooperation to provide Neste's SAF for DHL Express' hub at the UK's East Midlands airport.

Frank Appel, CEO of Deutsche Post DHL Group said, "Today's announcement also reflects how we are concretely helping customers reduce greenhouse gas emissions by at least 20 million tons of CO_2 equivalent annually by 2030. SAF is a cornerstone of the aviation industry's efforts to achieve net-zero emissions by 2050. It requires a joint effort across the aviation value chain with all stakeholders, using all available renewable raw materials and solutions, to reach that goal. As the world's leading logistics provider, it is our commitment to provide green and more sustainable solutions for our customers. The landmark SAF deal with Neste marks a significant step for the entire aviation industry and validates the framework of our Sustainable Roadmap. Using SAF is currently one of the aviation industry's key routes to reducing CO_2 emissions over the aviation fuel lifecycle with currently available aircraft types."

In its Sustainability Roadmap, Deutsche Post DHL Group has committed to using 30 percent of SAF blending for all air transport by 2030. Neste's SAF is produced from sustainably sourced, 100 percent renewable waste and residue raw materials. It can reduce greenhouse gas emissions by up to 80 percent, in its neat form, and over the life cycle, compared to the fossil jet fuel it replaces, thereby significantly reducing DP-DHL's carbon footprint.

John Pearson, CEO of DHL Express said, "With every SAF deal, we are increasingly aware of the huge task that lies ahead in utilizing alternative sustainable solutions to help our customers. Not a day goes by without our customers asking us about low-carbon logistics solutions and partnering with them in our joint aspiration to be part of creating a more sustainable future. The new SAF deal with Neste is a milestone on this journey. Our key focus is to inspire more SAF suppliers to address the current supply gap. At the same time, we are calling on policymakers to set the right framework to accelerate the market ramp-up of SAF in the EU and worldwide, including an accounting mechanism that allows flexible SAF purchases and usage."

Neste MY Sustainable Aviation Fuel is an available solution today. As a drop-in fuel, it can be used with existing aircraft engines and airport fuel infrastructure, requiring no extra investment to them. With the ongoing expansion of Neste's Singapore refinery and modification to its Rotterdam refinery, Neste will have an annual production capacity for sustainable aviation fuel of 1.5 million tons (approx. 1.875 billion liters) by the end of 2023.

IATA GROUND HANDLING CONFERENCE

Paris, France
31 May - 2 June 2022

Building a sustainable future for ground operations

PEOPLE, PURPOSE & PASSION

www.iata.org/en/events/ighc/

IATA

Twists and turns of MRO supply chain and Inventory planning

The aerospace industry is undergoing rapid transformation post-pandemic. In a race for survival in the new normal, MROs are fast adapting to the newer and latest technological advancements. A lot has changed in the MRO inventory management field pre-and post-pandemic. **Jared Corey, Director of Supply Chain at AMETEK MRO** explains how MRO supply chain has always been a challenging field, and how the industry continues to face headwinds of manufacturing capacity and labour shortages. He further discusses in detail the challenges faced and AMETEK's expansion plans in an Exclusive Interview with **Swati. K**

Q– COVID19 pandemic completely changed the industry's outlook towards inventory management. MROs are now well-prepared when it comes to inventory management. In AMETEK MRO what has changed as far as inventory planning goes, pre-and post-pandemic?

A-MRO supply chain has always been a challenging field, but the pandemic added a twist many of us have not previously experienced. Pre-pandemic inventory management models were based with an eye on the working capital impact and leaning on upstream manufacturers and parts distributors to reduce lead times and provide JIT type inventory services. AMETEK MRO looks now at more risk management, improved forecasting by commodity types, broadening and diversifying the supplier base, and extending the planning horizon.

Q– Can we safely say that Covid has actually given MRO parts management an opportunity to improve significantly?

A-There are still significant challenges to overcome in the near term. The industry continues to face headwinds of manufacturing capacity and labour shortages, which I expect to extend deep into 2022. AMETEK MRO will continue to drive operational excellence initiatives throughout our brands, from new product development and business sustaining solutions to improved inventory management techniques. Relationships with our business partners both customers and suppliers have always been central in aerospace MRO to build a supply chain that can adapt to the dynamic demands of the commercial maintenance cycle.

Q – Can you explain to our readers the importance of data in inventory management and how it helps to develop a strategic outlook and also to overcome market challenges?

A -Inventory Management revolves around data analysis, specifically accurate and timely data. This will be an even greater factor moving forward. The solid inputs of AMETEK MRO's data will drive a plan enabling us to better predict future requirements and to reduce the risk associated with the inability to produce. Efficient data analytics develop inventory models that can help to optimize inventory, reduce costs, identify trends, provide efficiencies in the ordering cycle, and reduce risk to the business.

Q - Can you tell us one challenging situation that you have faced and how did you handle it?

A -The current state of the global supply chain provides daily opportunities as we call them at AMETEK MRO. Regardless of the situation, solid relationships with our customers and suppliers are always a good start. We are still trying to understand the full impact of how this pandemic has affected the manufacturing supply base. Managing through material shortages and growing manufacturing leadtimes will require thoughtful and strategic analysis and planning. Understanding requirements and communicating forecasted demand upstream will increase AMETEK MRO's opportunity for success.

Q – Many MROs across the world are undergoing robust expansion to meet heavy customer demands. Any expansion plans on the cards?

A -Yes, AMETEK MRO is seeing heavy customer demand across its MRO segments. Besides PMA and DER development and increasing our capability lists, AMETEK MRO has multiple OEM heat exchange projects on the horizon. Additionally AMETEK MRO recently moved into a new wheel and brake facility in Paris, expanded its A350 repair capabilities in Singapore, was approved to sell PMA pyrotechnic parts in China, and in January AMETEK MRO signed an agreement to partner with Triman Industries to provide Triman's military customers with a variety of MRO solutions. Yes, there is a lot going on.

Q – Any tips for our readers for effective inventory management?

A -It's hard work. MRO folks are special people. This is a fast paced, solution driven industry. Everyday challenges are met head-on by establishing an understanding of the issues. There are no shortcuts to success.

Q – You currently are responsible for inventory control of our three North American businesses: B&S Aircraft, Drake Air, and Southern Aero parts. How do you manage to analyze the demand, forecast, and provision of materials? Are those the specific skill sets required to become an effective Inventory manager?

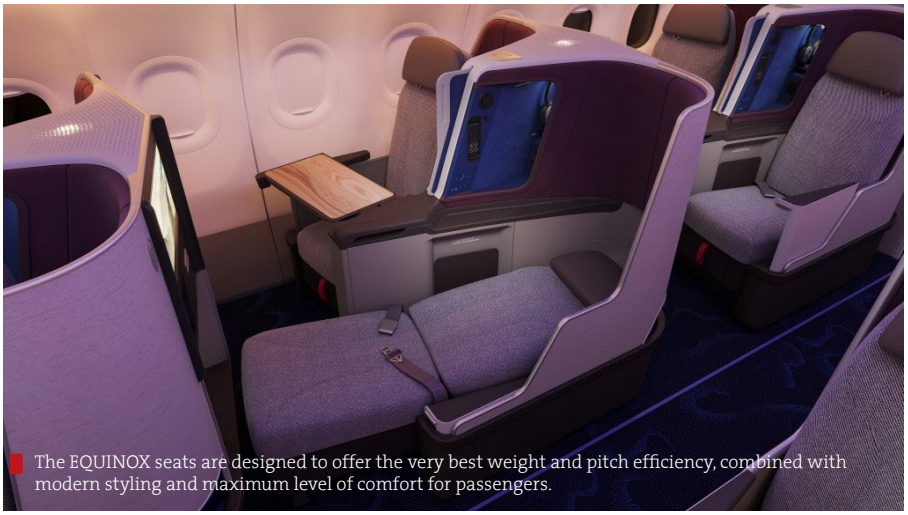
A -In the current atmosphere, it is essential to identify and mitigate supply disruptions, anticipate changing demand patterns, and constantly assess supplier performance. AMETEK MRO is constantly working to evolve our plan for every part (PFEP). I promote and rely on strategic thinking from my team so the inventory plan by line item is reviewed at every demand signal. Additionally, a strong SIOP process mates essential demand requirements from the customer with inventory acquisition and operational capacity. Understanding demand trends and supply limitations is the key.

Q – Any thoughts or suggestions to the youth who are currently pursuing their career in aircraft maintenance?

A -Aerospace MRO is full of great careers: Mechanics, Engineers, Finance, Supply Chain, Quality, Sales, Customer Service, and EHS. The people are great, and the work is rewarding.

STELIA Aerospace customizes state-of-art EQUINOX seats for premium class on China Airlines

The EQUINOX family of Premium Business Class seats is available for both widebody and single-aisle cabin layouts.



The EQUINOX seats are designed to offer the very best weight and pitch efficiency, combined with modern styling and maximum level of comfort for passengers.

STELIA Aerospace has developed a highly customized version of Premium Business Class seat for China Airlines A321neo. This exclusively designed seat is called EQUINOX and it perfectly fits China Airlines' very stringent requirements. Thanks to the highest standards provided by this seat passengers can benefit from a full-flat seat on a single-aisle aircraft with a bed width of 22.5 inches. It also has a retractable telescopic partition between seats for enhanced privacy, a personal storage area under the TV screen, whose door transforms into a small cocktail table, and a new LED control panel allowing the passenger to electrically adjust the seat and maximize comfort throughout the flight.

Apart from the above features, the seat also has a new inductive charging for mobile devices which is indeed a rare feature on single-aisle aircraft, and night mood lighting projections around each passenger's head. It also has the full height front row monument specifically tailored for China Airlines, which optimizes storage space as well as the aircraft seat count, while providing a welcoming cabin ambiance for passengers as soon as they board the aircraft.

Thierry Kanengieser, VP Cabin Interior STELIA Aerospace said, "In the name of STELIA Aerospace, I am very proud to have worked with China Airlines to develop this brand new and highly customized EQUINOX Premium Business Class seat for their A321neo. This seat will no doubt contribute widely to passenger comfort on regional routes, complying with China Airline's tradition of excellence."

Designed to offer the very best weight and pitch efficiency, combined with modern styling and maximum level of comfort for passengers, the EQUINOX family of Premium Business Class seats is available for both widebody and single-aisle cabin layouts.

FEAM AERO expands in Europe, acquires Northern Aerotech

This acquisition brings FEAM's global footprint to a total of 42-line stations.

In an attempt to expand their European reach, FEAM AERO recently acquired Northern Aerotech bringing their total European line station count to 12 locations. This will increase FEAM's global footprint to a total of 42-line stations.

Northern Aerotech has over 30 years of experience in heavy line maintenance and has the technical capability with multiple Boeing and Airbus fleet types. They also hold EASA Part 145 certification.

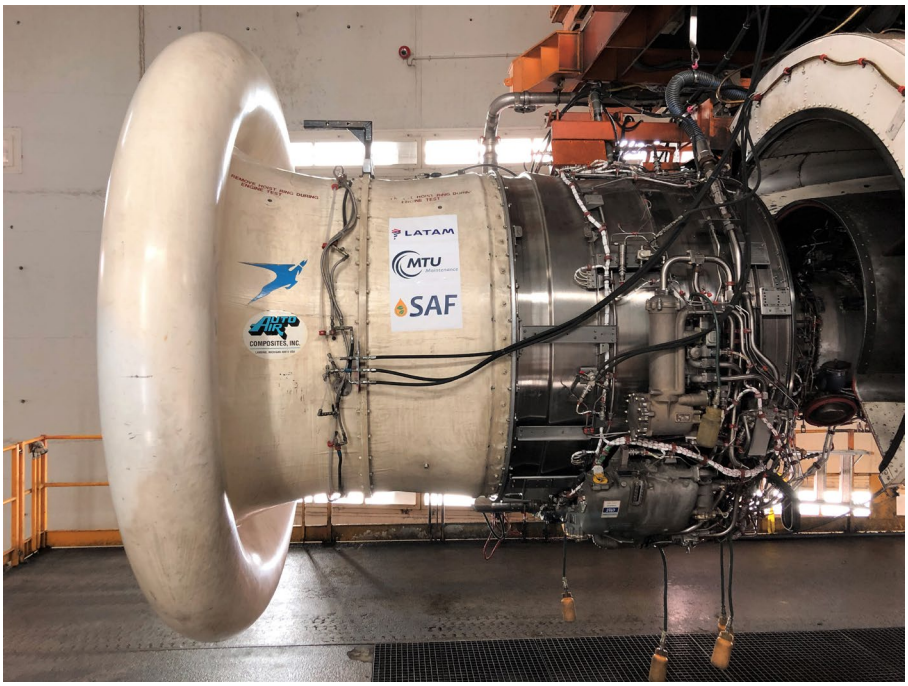
Dan Allawat, Chief Strategy Officer of FEAM said, "The acquisition of Northern Aerotech marks a pivotal moment for FEAM, and we have extremely high expectations of our newest partnership. We feel that our company has done an excellent job of establishing our brand in the United States, and we look forward to bringing our value-driven service perspective to clients across the world."

Cam Murphy, President of FEAM said, "FEAM is most certainly in growth mode. We feel that the time is right to align with key partners in major markets worldwide to continue our growth trajectory and provide the highest caliber of quality and service to our clients possible. Northern Aerotech was a natural choice; we are aligned from a value standpoint, and we are extremely positive about the work that we will do together in the future."

The acquisition of Northern Aerotech follows their initial acquisition of BOSA, a globally approved aircraft maintenance provider representing FEAM's first formal expansion initiative into the European market.

MTU Maintenance & LATAM come together to use SAF in V2500 engine test run

The engine was recently tested at the MTU site in Hannover with a 10 percent SAF fuel blend.



Up to 80 percent CO_2 emission reduction for V2500 test runs carried out with SAF fuel blend.

MTU Maintenance and LATAM have come together to use SAF in test runs of the V2500 engine of LATAM's fleet. The engine was recently tested at the MTU site in Hannover with a 10 percent SAF fuel blend.

The fuel used is derived from waste fats, oils, and lubricants and produces up to 80 percent less greenhouse gas emissions per gallon than paraffin over its entire life cycle. Thus, around 0.6 tons of CO_2 were saved during the test run. In future tests, the SAF proportion will be increased to up to 50 percent, which is the maximum limit currently permitted.

Michael Schreyögg, Chief Program Officer at MTU Aero Engines said, "MTU Maintenance is the first maintenance provider in the world to offer test runs with SAF. We are particularly pleased that we have been able to win over our long-standing partner LATAM for this purpose. MTU is committed to the goals of the Paris Climate Agreement. That's why we want to operate our sites in Germany in a CO_2-neutral manner and support our customers worldwide in their initiatives to combat climate change."

Paulo Rimbano Meneghel, Powerplant Director of LATAM said, "We are quite pleased to be working with MTU Maintenance on this ground-breaking initiative. We want to do our part to protect the planet, the biodiversity of ecosystems, and the well-being of the global population. We recognize the importance of SAFs in the fight against climate change and actively promote the development of these. An important part of our collaboration with MTU Maintenance is the collection of data to ensure that SAF deployment is both safe and useful."

MTU is working on revolutionary propulsion concepts with the aim of making aviation climate-neutral by 2050.

Delivery of Airbus A321neo aircraft (MSN 10373) by SMBC Aviation Capital to Scoot

Scoot to undertake operations effectively on getting delivery of Airbus aircraft.

SMBC Aviation Capital has announced the delivery of one (1) Airbus A321neo aircraft (MSN 10373) consisting of the equipment of two IAE PW1133G-JM engines to Scoot for undertaking various operations.

The aircraft and associated engines were delivered at the Airbus delivery centre in Hamburg, Germany as per the contract between SMBC Aviation Capital and Scoot.

The delivery of the Aircraft closes out a series of A321NEO deliveries contracted between SMBC Aviation Capital and Scoot from the orderbook of Airbus.

The delivery of one (1) Airbus A321neo aircraft.

Pratt & Whitney opens massive recruitment opportunity for Indian aerospace aspirants

The Supply Chain Support Center in Bengaluru will be the first-of-its-kind to create an advanced and integrated global supply chain.

Pratt & Whitney announced its plans to open a world-class global supply chain support center in Bengaluru, India. The India Capability Center (ICC) will employ hundreds of analysts and data scientists to augment Pratt & Whitney's global supply chain, focused on digital capabilities.

Jim Hamakiotis, vice president, supply management, Pratt & Whitney Canada said, "We are proud to announce our Supply Chain Support Center in Bengaluru – the first-of-its-kind investment for Pratt & Whitney in India. As we build upon our digital transformation efforts at Pratt & Whitney, the India center will play a crucial role in creating an advanced and integrated global supply chain for us."

The center began recruiting for its first tranche of 160 aerospace analysts and data scientists and is expected to begin initial operations by April 2022. The center will be co-located at Collins Aerospace's campus in Yelahanka, Bengaluru.

Ashmita Sethi, president and country head, Pratt & Whitney said, "India provides the perfect ecosystem of aerospace talent, innovation and capabilities for us. Over the years we have made significant investments, including our state-of-the-art India Customer Training Center in Hyderabad and our advanced R&D center in Bengaluru. Our new center is a great example of our continued commitment to India, and we aim to grow our in-country capabilities further."

Sandeep Sharma, managing director, India operations, Pratt & Whitney Canada said, "India's ICC will deliver seamless international collaboration. We look forward to building a team that is curious, innovative and aligned to Pratt & Whitney's mission – and Bengaluru serves as the perfect talent hub."

The India Capability Center will collaborate with teams across Pratt & Whitney's global supply chain and will focus on supply chain operations, procurement, and digital analytics.

Pratt & Whitney already has a strong, decade-old Research & Development (R&D) presence in Bengaluru. The company's world-class R&D center at Indian Institute of Sciences (IISc), Bengaluru focuses on cutting-edge materials and propulsion technologies research. With over 1700 engines and APUs (Auxiliary Power Units) powering more than 900 aircraft, Pratt & Whitney has the largest footprint of any engine maker in the country, and nearly one in every two people flying in India, fly on planes powered by Pratt & Whitney engines.

More Boeing Freighter Conversions ordered by ATSG towards fulfillment of strong demand

ATSG committed to fulfilling 360 degree brand promise to provide wide spectrum support for the global customers.

Air Transport Services Group, Inc. (ATSG), the world's largest owner and operator holding company of converted Boeing 767 aircraft, announced that its leasing subsidiary company Cargo Aircraft Management has placed a second order with Boeing for the conversion of four CAM-owned 767-300 aircraft into Boeing Converted Freighters (BCF), with an option for four additional conversions beyond that.

Mike Berger, chief commercial officer of ATSG said "Demand for the 767-300 platform remains strong among e-commerce and express providers" and further adding "As the world leader in midsize freighter leasing, ATSG is committed to fulfilling our 360-degree brand promise to provide wide-spectrum support for our customers around the globe as they continue to grow market share and expand their reach."

The conversions are slated to begin in late 2023.

Jens Steinhager, Director of the Boeing Converted Freighter Program said "We are thrilled that ATSG has again selected the 767-300BCF to increase their portfolio and fleet growth for e-commerce and express customers around the world. The 767-300BCF is in strong demand, and we are adding three additional 767-300BCF conversion lines at new and existing MRO suppliers around the globe to help customers like ATSG provide their customers with the dedicated freighter capacity they need."

ATSG's initial order of four 767-300BCF conversions was announced in November 2021. In addition to four additional Boeing conversion commitments, ATSG now has secured with its conversion suppliers estimated to be more than 80 passenger-to-freighter conversion slots which would be for the next five years.

Dassault Falcon 6X's flawless performance at bone-chilling -37 degrees of the Tundra

During the arctic ground test campaign, the aircraft was cold-soaked for three successive nights and subjected to different start sequences each morning.

Dassault Falcon 6X achieved a major milestone that will aid in its certification process. The Falcon 6X completed cold-weather testing at bone-chilling temperatures as low as -37 degrees Celsius. The trial run was held in Iqaluit, a tundra town in the far north of Canada where a team of technicians and pilots from Dassault Aviation and engine manufacturer Pratt & Whitney Canada were present.

Carlos Brana, Dassault Aviation's Executive Vice President of Civil Aircraft said, "The Falcon 6X continues to impress us with its performance and reliability as we move through the certification process. The aircraft operated

flawlessly at the extreme temperatures an aircraft can be subjected to in the severest climate conditions. That includes engines, systems, and low-temperature maintainability requirements."

During the arctic ground test campaign, the aircraft was cold-soaked for three successive nights and subjected to different start sequences each morning. Teams then powered up the aircraft and conducted engine ground runs and high-speed taxi tests. Ground tests were followed by a test flight during which anti-icing systems and handling qualities were checked and the stability of fuel and hydraulic fluid temperatures verified while the aircraft remained in a holding pattern flown at 10,000 feet.

These tests, which were completed at the end of February, followed an initial series of cold-weather tests in Iqaluit in December, when temperatures dipped as low as -25°C (-13°F). The 6X endured a total of 50 hours of Arctic cold tests and has now accumulated some 650 flight hours, and completed over 220 flights.

MRO BUSINESS TODAY

India will need 2,210 aircraft in the next 20 years – Airbus predicts India's growth spurt

Commercial aviation will leverage India's geographic, demographic and economic dividend to strongly deliver in the long-haul market.

The gloomy clouds of the COVID-19 pandemic are long gone and the aviation sector is all set to soar back into the skies to bask in its former glory. Prior to the pandemic India was a budding domestic aviation market expected to become the third-largest by the next decade. Even now, with the opening of international routes from March 27 and the government setting a target of creating 220 new airports by 2025, India has shown the world that it has grown significantly during the pandemic. The government intends to create 33 new domestic cargo terminals, set up 15 new flight training schools for pilots, create more jobs, and increase focus on the drone sector. The Ministry of Civil Aviation has ambitious plans to increase passenger throughput from 34.5 million in 2018-19 to 40 million in 2023-24.

Airbus predictions

Looking at the above figures, Airbus expects the domestic air travel in India to reach pre-Covid levels by mid-2022, while international travel traffic is expected to recover by next year. According to Airbus, the Indian aviation market will grow at 6.2 percent for the next 20 years, largely pushed by domestic traffic and nearby countries. It similarly expects the global aviation market to grow by 3.9 percent. This is a clear indication of a promising outlook and strong economic growth.

Before Covid-19 hit the business of aviation, the Indian market was growing consistently at double digits with traffic more than doubling from around 61 million in 2013-14 to around 137 million in 2019-20, registering a growth of over 14 percent per annum. India will soon replicate this performance in the international market in the next 20 years.

Indian airlines will order 2,210 aircraft in the next 20 years with 1,440 aircraft being narrowbodies.

"Just as the economy continues to improve, we believe traffic is going to go up here. This is going to drive the need for more aircraft. The fundamentals in general continue to improve. We are bullish where the market is going to go," said Brent McBratney, Head of Airline Marketing, Airbus India and South Asia.

Airbus expects domestic air travel in India to reach pre-Covid levels by mid-2022.

'The widebody aircraft will bring a revolution

Commercial aviation will leverage India's geographic, demographic and economic dividend to strongly deliver in the long-haul market. However, so far India's growth in the widebody fleet is almost stagnant. India only has 57 wide-body aircraft across its airline fleet, compared to 458 in China and 686 in the US. During the last 20 years, India's single-aisle fleet multiplied by a factor of six but the wide-body fleet remained stagnant.

Airbus firmly believes that this situation will change soon and the next spurt of growth in India will come from widebodies.

Wide-bodied planes like A350XWB have larger fuel tanks that allow them to travel long distances compared to narrow-bodied aircraft like A320NEO. A350XWB aircraft can travel above 8,000 nautical miles, with a flying time of approximately 18 hours in one flight.

"We believe the A350 will trigger a tectonic shift, a change of paradigm in long-haul travel that matches the aspiration of India and its people. The A350 will play a strategic role in this transformation", said Airbus India President, Remi Millard.

Airbus and Tatas

Airbus flew an A350 to three major Indian cities over the past three days, showcasing the jet to potential customers and media. On Tuesday, Ratan Tata, the Tata Group patriarch who was recently named chairman of Air India, also toured the plane, images posted on social media.

Airbus is pitching the A350 to Air India as the airline looks to revamp its fleet after a change of ownership from the government to Tatas.

When asked if Airbus is in talks with Tata and Indian carriers for the A350XWB aircraft deal, Maillard said, "We are obviously in talks with all airlines. The new owner of Air India, the Tatas are existing customers of Airbus. Tatas have Vistara and AirAsia India with them, as we know. We have developed a long-standing, trustful and respected relationship with the Tata Group."

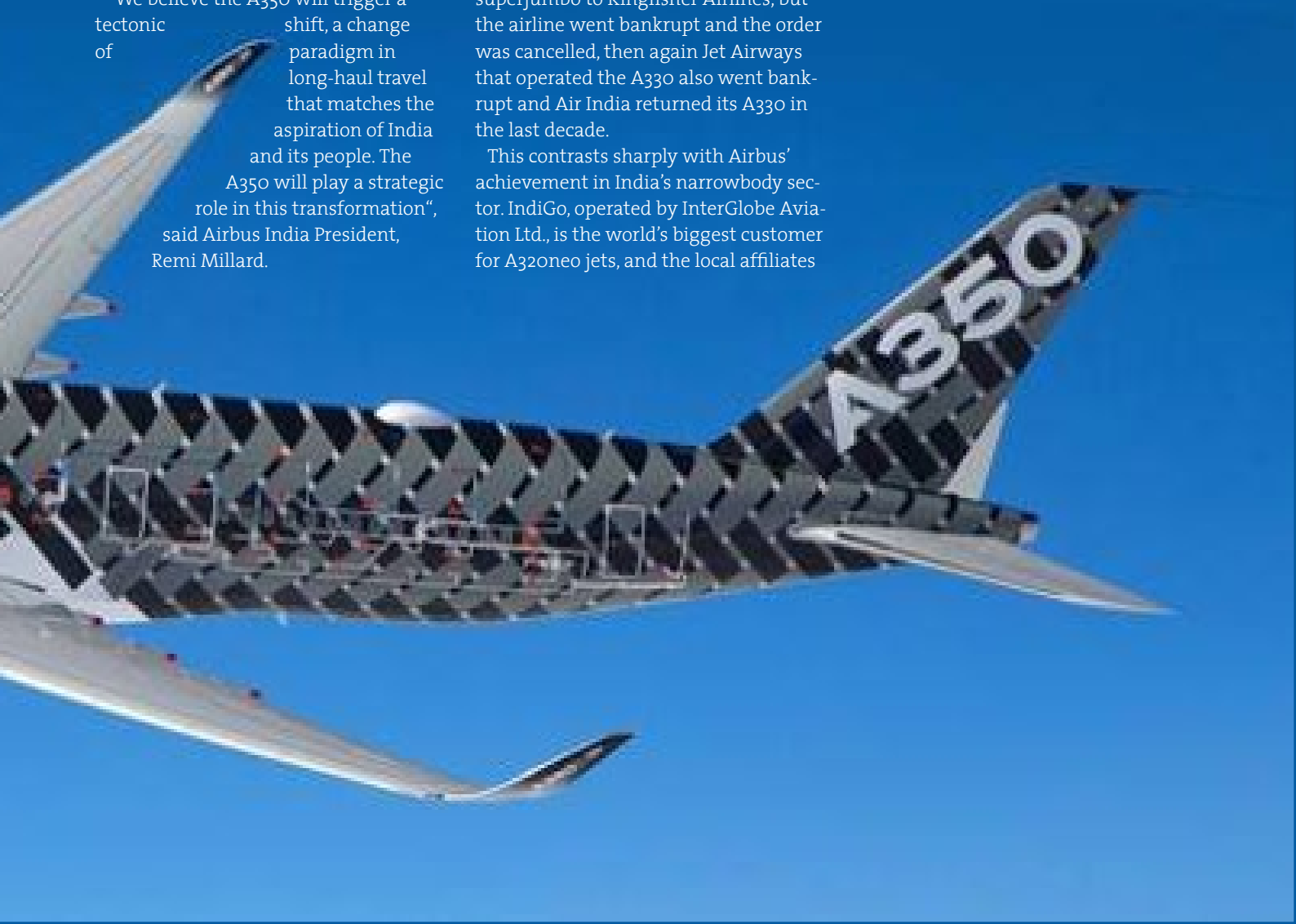
Prior to this Airbus had sold the A380 superjumbo to Kingfisher Airlines, but the airline went bankrupt and the order was cancelled, then again Jet Airways that operated the A330 also went bankrupt and Air India returned its A330 in the last decade.

This contrasts sharply with Airbus' achievement in India's narrowbody sector. IndiGo, operated by InterGlobe Aviation Ltd., is the world's biggest customer for A320neo jets, and the local affiliates of Singapore Airlines Ltd. and AirAsia all operate the A320 family. Tata Group is the majority owner in both of those ventures.

'India – A rich source of skilled labour'

Apart from this Airbus has also unveiled a host of employment opportunities for leading-edge engineering and IT professionals in India. Airbus India is actively recruiting to fill positions in avionics software, aircraft system simulation, and airframe structures. Additionally, opportunities also exist in digital technology roles such as cybersecurity, API development, Full Stack Development, Big Data, Cloud and DevOps, and IoT.

Airbus currently supports 7000 jobs in India and is set to raise the number of engineering and IT positions to more than 2,000 by the end-2022, as part of its growth strategy for India. The recruitment plan for India is in line with Airbus' growth forecast of around 6,000 new hires worldwide across the group.



MRO Calling #Atmanirbhar India

The government has also taken the issue of reduction of Value Added Tax (VAT) on Aviation Turbine Fuel (ATF) with the states and the UTs.

Atmanirbhar Bharat! the term is almost synonymous with India since the government by Mr. Narendra Modi introduced this term a few years back. Since then, that government is encouraging industries to manufacture and sell the products in India at par with the Western world. Picking up the cue many industrialists came forward and established their businesses to transform India from a developing to a developed nation. One of the sectors, considered to be the most neglected sector by the government was the aerospace MRO sector. To everyone's surprise, since the last couple of years, the Indian government has started taking special efforts to uplift this sector by announcing schemes and perks for the benefit of small, independent MROs and repair shops across the country. This is attracting the attention of several foreign MROs seeking investment opportunities in India.

Last year, in the annual budget, the government had promised to make India a global MRO hub and true to its promise, the government has already started taking steps towards this goal. The industry players had long been demanding the government to reduce the GST rate on aircraft MRO services, and the government responded to the popular industry demand by slashing the GST on aerospace MRO from 18 percent to 5 percent. This move by the GST council is supposed to help Indian MRO service providers invest more in infrastructure and capabilities due to the level playing field with foreign companies.

This will also accelerate the pace of setting up MRO services in India. The aviation ministry is trying to attract private investment for MROs at 8 airports. All these measures have received appreciation and positive responses from the MRO industry stalwarts.

"We would like to acknowledge and congratulate the civil aviation ministry's forward-looking policy measures that are advancing India's MRO ambitions. To develop India as a global aviation hub, we need to think of entire eco-systems that take advantage of India's inherent strengths, competencies, and talent. For the MRO and aviation ecosystem to grow, we need to focus on building scale that encourages OEMs to invest, use investments in civil and defense commonality to our advantage, further develop our engineering talent, and finally synergize policy-making with on-ground implementation," commented Ashmita Sethi, president & country head, Pratt & Whitney India.

Ashok Gopinath, CEO at GMR Aero Technic Limited, Hyderabad said, "These moves by the MoCA are in the right direction and the benefits will start becoming visible in a couple of years from now keeping pace with expected growth in the aviation industry in India."

Civil Aviation Minister Jyotiradiya Scindia, while speaking on India's new policy for aircraft MRO services in September last year had said that the ministry is planning to implement an allotment process for MROs via open tender and that it will provide allotment for 30 years to provide a stable ecosystem for investors. Apart from this, the government has also taken the issue of reduction of Value Added Tax (VAT) on Aviation Turbine Fuel (ATF) with the states and the UTs.

"GST reduced on Maintenance services for aircraft and aircraft components appreciate that, but what about duties on Tools and Consumables and ease of customs clearance process for Aircraft parts, these are major points for maintaining the aircraft. Also, to boost up the Indian aviation market government should come up with some rebate on import customs duties for private category aircraft and reduce the Airport infrastructure cost like Hangar charges," said Shobhit Shrivastava, head of Aviation at APCO infra.

Dr. Praveen Srivastava, CEO of AeroChamp Aviation Pvt Ltd commented, "The reduction of GST will definitely boost the MRO industry as the operators will now see the Indian MROs to be more competitive than flying their aircraft outside for maintenance needs. As it is since the last couple of years, domestic aircraft were not flying outside".

"During the maintenance, there are two main components, labor, and spare parts supply, the spare parts supply ecosystem in India has not been nurtured which has a definite impact on the MRO industry. We need to develop independent component suppliers in India. As of now, there is no clarity on this, as the MROs import the spares, they are charged a low customs duty compared to a non-MRO or a trader. This is a grey area that needs to be addressed by the ministry. Secondly, there are not many component repair shops in India both for Civil as well as defense, so just reduction of GST won't lead to an increase in investments or encourage entrepre-

neurs or small MSME to set up shops, until there is an open discussion on this between the MoCA and the DGCA, Also, the smaller repair shops get their share of recognition and their contribution in the MRO industry," Dr. Srivastava continued.

"Currently, the DGCA is not equipped to issue repair approvals for many components, e.g it has limited capability to give part 21 approvals. The Ministry needs to liberalize or encourage the DGCA to approve fabrication, manufacturing, and even component level repair in India, this would definitely help support the MROs in the country," he further added.

On the other hand, the foreign MROs have started seeking India as an ideal destination for investments looking at the upward curve of the domestic aviation post-pandemic. India's aviation sector is seeing a solid revival after pandemic-related turbulence. On October 9, domestic airlines flew more than 300,000 passengers for the first time since February. Major airports saw heavy crowds and long queues last weekend, indicating the comeback of air travel. If the current trend sustains and there is no sudden surge in Covid-19 infections, the Indian civil aviation sector may be on the verge of a turnaround.

Appreciating the efforts of the government, Mr. D Anand Bhaskar, Managing Director & CEO, Air Works Group said, "The Govts. approach, ambition and some of the measures taken since the past couple of years – esp. during the height of the pandemic, reflects a firm resolve to make India an MRO Hub. As India's largest independent MRO that works exclusively with all 3 segments – Commercial Airlines, Business/ Executive Aviation, and the Indian Défense Services, Air Works definitely welcome such steps to boost investment in the sector. Measures such as long-term investment horizon and the removal of royalty are definitely attractive and will help strengthen Indian MROs, helping them secure a greater pie of the Indian aviation maintenance market. Similarly, promoting convergence of Civil and Defense MROs will also make India increasingly atmanirbhar".

Many foreign MROs are also eyeing India to establish their roots and spread on the Indian soil. Recently Thales announced the opening of a new MRO center in Bengaluru, focusing mostly on avionics repair and fleet management. As per sources. Thales is vying for a major contract from the Tata Group for IFE in the fleet modernization module for Air India Limited. They are also planning on developing avionics for drones to allow users to identify, track, and geo cage drones. The MRO unit could be a JV or a fully-owned subsidiary of Thales.

"India has a very good set of highly skilled engineers and in good numbers. It is not easy to get good engineers as they are always sought after by all companies. We need engineers and India is the place for us to be in." said Yannick Assouad, Thales' EVP (avionics) when she was on a visit to India for celebrating the third anniversary of their Bengaluru center. "My visit to India was an eye-opener," she further added.

Thales is planning an investment of million dollars in India along with employment opportunities.

On the other hand, another French major Safran is opening an MRO facility in a joint venture with Hindustan Aeronautics Limited in Goa. The facility will be operational by the end of 2023 with a capacity to repair 50 engines a year and a full-capacity goal of 150 engines in the coming years. The J.V. will also bring employment opportunities to over 60 qualified engineers and technicians of the region. the 1,000 sqm training and office facility and a 3,800 sqm international class shop facility will provide Maintenance, Repair, and Overhaul (MRO) services for Safran TM333 and HAL Shakti engines installed on HAL-built helicopters to increase the operational readiness of the Indian Armed Forces.

"Indian MRO possesses the capabilities and intent and infrastructure is being created even as we speak. We are recognized as a leader in technology and the MRO industry is happy to embrace it for business efficiencies. However, the real challenge lies in seamlessness in approvals/ certifications/training/ manuals (IPRs), most of which are either different or rest with OEMs and are, therefore, out of bounds for domestic MROs," Mr. Bhaskar added, "Managing this isn't possible for an individual player, but requires a structured, trustworthy, win-win framework at the national & policy level to promote sharing and leveraging opportunities to build domestic capabilities. India should therefore take appropriate steps to strengthen the indigenousness of its aviation maintenance industry, on which all aircraft – regardless of type (commercial/ business/defense), depend. I would like to add that against the backdrop of aircraft fleet inductions expected over the course of the next few years, Indian MRO could well grow at a CAGR of 10% or more, for the next few years. Once/ if most of the maintenance work on domestic aviation assets begins to be done in-country, our current domestic capacities can and could pretty much be fully utilized to serve the needs of domestic aviation, leaving little capacity available for overseas business, for which also, one will need to plan and invest in order to expand our concept of MRO Hub," he concluded

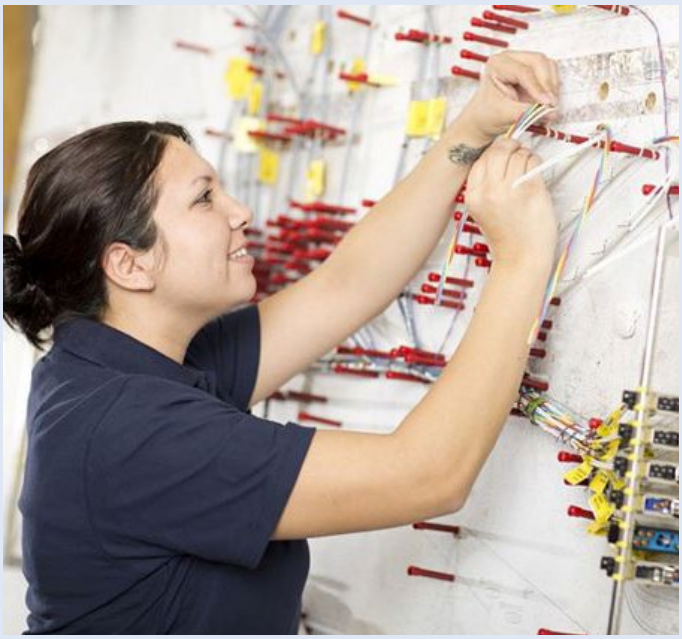
Just last year, AAR- Indamer JV, MRO was operational in Nagpur, in Mihan-SEZ. The first MRO to be operationalized in Mihan SEZ was that of Air India, built by Boeing and then handed over to Air India to operate. Mihan is slowly emerging as an aviation hub with DRAL, (Dassault Reliance Aerospace Limited), and Tatas, TAAL enterprise already operational there.

However, despite several favourable conditions like the strategic location, government backups and schemes, and abundance of skilled labour, India has a long way to go.

"While these are very positive news for the Indian MRO industry, it is still not enough for India to become an MRO hub," said Rohit Tomar, Managing Partner at Caladrius Aero. "MRO business I not driven by consumption of volume of business, an example is Singapore. The total MRO business in Singapore far exceeds the MRO needs of Singapore as a country. With Singapore's location close to India, it would not be easy for India to position itself as an MRO hub unless the government and stakeholders take strategic initiatives towards capital investments," he concluded.

Boeing places trust in Safran for wiring needs

Over the years Safran has provided Boeing with impeccable quality, on-time delivery, and world-class support.



Boeing and Safran recently signed the renewal of the electric wiring contract. This renewal covers the Boeing P8, 737 MAX, 767 Freighter, 777, and 777-X programs. The Boeing 787 Dreamliner and 767-2C remain on contract as well.

Ricardo Varela, Executive Vice President & General Manager of Interconnection Systems Americas for Safran Electrical & Power said, "The renewal of all our electrical wiring contracts with Boeing confirms the success of our joint projects since the start of our collaboration in 1992. Since then, our company has increased and matured to be a true partner with Boeing for their wiring needs. The enthusiasm of our teams and their dedication to excellence has allowed us to offer Boeing impeccable quality, on-time delivery, and world-class support."

Currently, more than 1,500 Safran Electrical & Power employees in Morocco, Mexico, and the United States provide engineering, manufacturing, and support services to Boeing Commercial Airplanes. In 2021, the company has produced more than 225,000 electrical wire assemblies for the Boeing programs, i.e., the 767 Freighter, and 737, 777, and 787 airplane families.

StandardAero grows by leaps and bounds in Helicopter MRO capabilities

The acquisition also included ERO's helicopter MRO facilities in Dallas and Colorado thereby providing StandardAero with increased capacity.

StandardAero has gained significant helicopter MRO capabilities with expanded offerings since the acquisition of Signature Aviation Engine Repair (ERO) last year. StandardAero now provides MRO services for M250, RR300, PT6T, T700, and CT7 helicopter engines and added new OEM licenses for CTS800 engines and PW200 engines as new platforms to its MRO portfolio, while also expanding parts distribution channels and mobile field services for customers worldwide.

Peter Wheatley, Vice President & General Manager of StandardAero's Helicopters business unit said, "Our combined team of highly skilled helicopter technicians and experienced aerospace professionals

has quickly integrated and we are completely aligned to raise the standard for helicopter MRO services to better serve our customers around the world."

The acquisition also included ERO's helicopter MRO facilities in Dallas, Portsmouth U.K., and Broomfield Colorado, providing StandardAero with increased capacity for engine MRO, accessories, and component piece-part repairs.

StandardAero's helicopters team foresees a multitude of benefits for current and future customers including enhanced operational efficiency, better turn times, expanded engineering expertise, expanded global and field service presence, and more global aftermarket support network and services. In addition to helicopter engine services, StandardAero also provides MRO services for airframes and dynamic components on a wide range of aircraft.

With the acquisition of Signature Aviation, ERO StandardAero totals nearly 6,600 employees strong across more than 50 locations, on six continents, and approaching USD 4 billion of annual revenue.

Beacon and ELMS Aviation partners on the future of aviation maintenance

This collaboration aims to test a fully integrated solution for managing aviation maintenance profiles and this requires Competence and Compliance check.

Beacon, the maintenance coordination platform for faster return-to-service powered by EmbraerX, has entered in to a partnership with ELMS Aviation, a leading Competence Management software service provider. This collaboration aims to test a fully integrated solution for managing aviation maintenance profiles and this requires Competence and Compliance check for the purpose of solving the immediate need of finding qualified and specialized talent.

In its commercial development plan to serve the European market of Operators and MROs, Beacon is partnering with ELMS to accelerate the development process with an unprecedented compliance feature and allowing the platform users to benefit from an improved Quality Assurance module to provide its customers more transparency and knowledge of personnel's competencies and ensure compliance and operational integrity.

Marco A.Cesarino, Head of Beacon said "Beacon is continuously pairing with existing and future customers and the aviation community to deliver meaningful and comprehensive solutions for Aviation Maintenance. The partnership with ELMS is another step forward that will allow us to bring more transparency, security and trust to the platform in one of our key markets. Beacon is about empowering teams and individuals with the tools to be visible to their customers and deliver the best return-to-service. Highlighting our users' capabilities will help support decision-makers not only to meet European Union Aviation Safety Agency (EASA) regulations but also to plan and allocate resources for a global and connected workforce in any region for today's and future challenges."

John Scale,General Manager of ELMS Aviation said "ELMS and Beacon are two ventures looking to bring 21st-century solutions to the aviation industry. Each of us has its own expertise: Beacon in supporting teams with digital tools for better communication, coordination and using event data and ELMS in creating an ultimate digital competence and compliance solution. Together, we are looking to power the next generation of maintenance workforce with a simple-to-use solution that is accessible for today's operators, OEMs, and maintenance providers that need to monitor, support and enhance their teams' competence levels."

This partnership will provide benefits to both ventures in the growth of their European operations, and will open up new commercial opportunities for Beacon in Urban Air Mobility and Drone Maintenance.

dentCHECK prides itself on being a part of Embry-Riddle curriculum

dentCHECK is the world's only handheld-portable, completely wireless 3D scanner tool purpose-built for aviation maintenance.

Embry-Riddle Aeronautical University has integrated dentCHECK into its Aviation Maintenance Science (AMS) curriculum. dentCHECK is the world's only handheld-portable, completely wireless 3D scanner tool with integrated AR that is purpose-built for the aviation maintenance industry. It is now used by the world's leading commercial, cargo and defense MROs.

Kris Hammer, associate chair of the AMS department said, "Part of that preparation is incorporating cutting-edge technology in our curriculum, especially when that technology is already being used by leading aviation and aerospace maintenance facilities. Advanced aircraft require advanced inspection methods, and 8tree's dentCHECK is a perfect example of this type of technology. Our students getting hands-on experience with the dentCHECK equipment gives them an additional edge over graduates from other Part 147 schools."

Arun Chhabra, CEO, 8tree said, "This is a major step in our journey to help prepare students for the technologies and practices that await them in the aviation maintenance workplace. By engaging the technical curiosity of today's students, tools like dentCHECK help increase their interest in aviation maintenance careers. This strengthens their employment prospects with airlines, MROs, and OEMs who already use such technologies in increasing numbers. Additionally, it addresses the industry's chronic shortage of maintenance technicians by creating a strong pipeline of qualified candidates. We are delighted to have Embry-Riddle as the launch partner for 8tree's Academic Initiative in the aviation industry, and look forward to helping the industry navigate the ongoing generational transition in the workforce."

Embry-Riddle's AMS department prides itself in preparing graduates to work in all sectors of aviation and aerospace maintenance. dentCHECK delivers real-time 'go/no-go' answers at the push of a single button and significantly reduces damage-mapping and reporting times, compared to traditional manual methods that use depth-gauges and straight-edges. Approved and recognized by all major aerospace OEMs like Airbus, Boeing, Bombardier, and Embraer, dentCHECK is used by the world's leading airlines/MROs for fast and accurate damage mapping and SRM-compliant multi-dent reporting. When compared to traditional inspection methods, dentCHECK delivers a 90 percent gain in efficiency and 35x better measurement consistency.

UltraFan power gearbox shipped to UK, one step closer to UltraFan engine demonstrator test run

The power gearbox can transmit more power than an entire grid of Formula 1 cars when running at maximum power.

Rolls Royce UltraFan technology demonstrator program achieved another milestone as the power gearbox has been shipped to the UK where the first UltraFan engine demonstrator is being assembled. The power gearbox has set a world aerospace power record on a test. The power gearbox has a planetary design and can transmit more power than an entire grid of Formula 1 cars when running at maximum power. On test, it has delivered 87,000 horsepower or 64 megawatts – enough to power a medium-sized city.

Chris Cholerton, President of Rolls-Royce Civil Aerospace said, "This is a tremendous moment for everyone on the UltraFan program as we take another step forward with the dispatch of the power gearbox. I'm proud that we are creating better, more efficient gas turbines which will be an essential part of air travel for decades to come."

UltraFan offers a step-change in gas turbine sustainability, saving 25 percent fuel compared to the first generation of Rolls-Royce Trent engines. UltraFan, which is scalable for narrowbody or widebody aircraft, is a key element of Rolls-Royce's commitment to making aviation more sustainable. Gas turbines will continue to be the bedrock of long-haul aviation for many years, and UltraFan's efficiency will help improve the economics of an industry transition to more sustainable aviation fuels, which are likely to be more expensive than traditional jet fuel in the short term.

The engine demonstrator – the largest engine in the world with a fan diameter of 140 inches – will go on test in Derby, UK, this year and its first run will be on 100 per cent Sustainable Aviation Fuel.

Safran and Bell come together to explore usage of 100 percent SAF on Bell 505

Safran Helicopter Engines is strongly committed to reducing carbon emissions at its sites worldwide by incorporating SAF at all its test benches.

In an attempt to reduce carbon emissions Safran Helicopter Engines and Bell Textron have come together to explore the technical performance and economic impacts of sustainable aviation fuel (SAF) on the Arrius 2R-powered Bell 505. A single, dedicated Bell 505 aircraft will conduct flights solely with the use of blended SAF. Both Bell and Safran Helicopter Engines will evaluate engine and aircraft performance data to better assess the collateral benefits associated with the incorporation of SAF, a significant tool being used to reach industry carbon reduction objectives.

A single, dedicated Bell 505 aircraft will conduct flights solely with the use of blended SAF.

Bruno Bellanger, executive vice president, Programs, Safran Helicopter Engines said, "We strongly believe in SAF, as it contributes to significantly reducing CO_2 emissions. As all our helicopter engines, the Arrius 2R, is already certified to operate on up to 50 percent SAF, and we are fully ready to assist all Bell 505 operators worldwide in their transition from conventional fossil fuels to SAF".

Doug May, vice president of Customer Experience said, "Bell has championed the usage of SAF as one of our many critical efforts in achieving carbon emission reductions in our rotorcraft operations. We look forward to working with Safran Helicopter Engines to gain a comprehensive understanding of SAF incorporation that will inform future aircraft technology and operations and ultimately support greener aviation practices."

With all its engine range already certified to operate on up to 50 percent SAF, Safran's objective is to certify in the coming years the use of 100 percent SAF, which can potentially result in carbon lifecycle emissions reductions by up to 80 percent. In 2021, Safran conducted a ground test campaign for a Makila 2 running on 100 percent SAF and followed this with successful flight tests.

Safran Helicopter Engines is strongly committed to reducing carbon emissions at its sites worldwide by incorporating SAF at all its test benches.

HAECO Landing Gear Service offers additional capacity and 100 on-time performance to Liebherr customers

This partnership offers guarantee of a world-class overhaul service to the highest standard of quality within a state-of-the-art facility that is ideally located in Xiamen.

HAECO Landing Gear and Liebherr-Aerospace extended their landing gear service agreement to offer state-of-the-art landing gear maintenance, repair, and overhaul (MRO) services to Embraer E-Jet E1 operators in the Chinese Mainland. This partnership combines HAECO Landing Gear Services' expertise in landing gear MRO services with Liebherr-Aerospace's original equipment manufacturer (OEM) expertise for the Embraer E-Jet E1 landing gear system.

Mr. Christian Pinter, Director and General Manager of HAECO Landing Gear Services said, "We are very honored to see our valuable long-standing partnership with Liebherr Aerospace elevating to the next level for supporting E-Jet E1 operators. HAECO Landing Gear Services is offering additional capacity and 100% on-time performance to Liebherr Aerospace's customers in the Asia Pacific region and the guarantee of a world-class overhaul service to the highest standard of quality within a state-of-the-art facility that is ideally located in Xiamen, a very dynamic and vibrant location for aviation maintenance and overhaul services."

Under this agreement, HAECO Landing Gear Services' quality landing gear MRO services are made available to aircraft operators through cost-competitive solutions offered by Liebherr-Aerospace, bringing planning flexibility to overhaul slots for return-to-service needs are made available to aircraft operators through cost-competitive solutions.

HAECO completed massive repair work for Xiamen Airlines

Some 32 units including ailerons, elevators, flaps, slats, spoilers, and wedges were promptly shipped to HAECO Composite Services to kick off immediate repair work.

HAECO Composite Services, recently completed the repair work for Xiamen Airlines aircraft that was damaged by a severe hailstorm.

To facilitate the extensive repair of the flight control surfaces on the Boeing 737 aircraft, HAECO Composite Services worked hand in hand with Xiamen Airlines' Fuzhou Base Maintenance team on this urgent task. Some 32 units including ailerons, elevators, flaps, slats, spoilers, and wedges were promptly shipped to HAECO Composite Services to kick off immediate repair work. Through mutual collaboration with the Xiamen Airlines engineering and procurement teams in Xiamen and Fuzhou, HAECO Composite Services worked around the clock to meet the customer's turnaround time expectations, and efficiently returned the units in pristine condition.

Mr. Chong Tat Nyin, Vice President of Aftermarket Business Development at HAECO Composite Services said, "We are pleased to undertake and successfully accomplish this massive repair work for Xiamen Airlines. Given the proximity of our facility to our customer's Fuzhou maintenance base, we look forward to cultivating an alliance of mutual co-operation and growth with Xiamen Airlines in the years to come."

For more than a decade, HAECO Composite Services has been providing industry-renowned MRO services, catalyzing a dedicated comradery amongst its global partnerships and clientele. The Xiamen Airlines Fuzhou maintenance base was established in December 2016 to provide engineering services to Xiamen Airlines' fleet of B737NG and B787 aircraft. It serves as the second-largest aircraft maintenance base in the East China region.

AAR expands portfolio by becoming Collins De-Icing & specialty Heating Systems distributors

Collins' partnership with AAR will help the best service this important de-icing market.

AAR signed an exclusive distribution agreement with Collins Aerospace's Goodrich De-Icing & Specialty Heating Systems business. Through this agreement, AAR will provide airlines, other aircraft operators, and MROs globally with de-icers and supporting products.

Eric Young, Vice President of OEM Solutions said, "We are excited to distribute Collins' De-Icing & Specialty Heating Systems and expand our portfolio and offerings, particularly to the business and general aviation marketplace. AAR looks forward to continuing our legacy of superior customer service through this agreement."

Sean Lyons, Vice President of Business Development for Collins Aerospace said, "Collins' partnership with AAR will help us best service this important de-icing market. AAR's global reach, industry insight, and aftermarket expertise will be a great benefit for our more than 5,000 customers worldwide."

Product offerings include patented technology and are predominantly used on general aviation aircraft, regional turbo-prop aircraft, and most multi-engine piston business aircraft.

Air Canada undergoes fleet modernization with 26 fuel-efficient, Next-Gen A321XLR's

The exceptional versatility and performance of the A321XLR will enable Air Canada to further develop its network expansion in a sustainable way.

The A321XLR is a perfect fit for Air Canada's fleet, given its history of operating the entire A320-Family as well as Airbus' long-range A330-300 widebody.

Air Canada has confirmed an order of additional six A321XLR aircraft with Airbus, this takes the total A321XLR fleet of Air Canada to 26, including the 20 additional A321XLRs that they are acquiring through lessors.

Michael Rousseau, President and Chief Executive Officer of Air Canada said, "Air Canada is committed to further strengthening its market-leading position, especially through investments in new technology. The acquisition of the state-of-the-art Airbus A321XLR is an important element of this strategy and will drive our core priorities of elevating the customer experience, advancing our environmental goals, network expansion, and increasing our overall cost efficiency. This order also shows that Air Canada is emerging strongly from the pandemic and is ideally positioned to grow, compete and thrive in a reshaped global aviation industry."

Christian Scherer, Airbus Chief Commercial Officer and Head of Airbus International said, "The exceptional versatility and performance of the A321XLR will enable Air Canada to further develop its network expansion in a sustainable way with increased efficiencies and reduced CO_2 emissions," said "We thank Air Canada for its confidence in us and are delighted by the step-up in our long-standing relationship."

The A321XLR is a perfect fit for Air Canada's fleet, given its history of operating the entire A320-Family as well as Airbus' long-range A330-300 widebody and more recently, Airbus' latest-generation single-aisle aircraft, the A220. The new Airbus A321XLR, the latest generation Single Aisle jet, is an ideal replacement for older and less fuel-efficient aircraft that will allow Air Canada to add new destinations in the most sustainable way.

The A321XLR is the next evolutionary step in the A320neo Family of aircraft, meeting market requirements for increased range and payload in a single-aisle aircraft, and creating more value for airlines by enabling economically viable service on longer routes than any comparable aircraft model. It will allow services from Eastern Canada to a much larger selection of European destinations.

The A321XLR will deliver an unprecedented single-aisle aircraft range of up to 4,700nm, with 30 percent lower fuel consumption per seat compared to previous-generation aircraft as well as reduced NOx emissions and noise. The aircraft will feature the Airbus Airspace cabin, offering a next level of long-haul comfort to passengers.

By the end of February 2022, the A320neo Family had accumulated nearly 7,900 orders from over 120 customers worldwide. A321XLR orders stood at 515 from 25 customers.

Magnetic Trading takes ITS partnership to next level

This partnership will allow both of the companies to expand service portfolios and to provide cost-effective and the highest quality solutions.

Magnetic Trading, part of Magnetic Group, recently signed a cooperation agreement with ITS. They were working together for quite some time on an ad-hoc basis. So this agreement comes as a natural next step in their partnership, allowing both parties to benefit from the exclusive terms of the deal.

Airina Kacienaite-Krake, Head of Magnetic Trading said, "We have vast experience of the mutual benefits from cooperation agreements thus for us, taking our partnership with ITS to the new level is a very organic step – it will allow both of the companies to expand service portfolios and to provide cost-effective and the highest quality solutions to our clients."

Darius Orvidas, Senior Key Account Manager at ITS said, "Magnetic Group and Magnetic Trading are well-established brands with an extensive customer's portfolio – and we want to share our resources that will allow improving their service offering for their clients, including those who are using PBH, Line Maintenance and other services. We are proud to take our partnership further and look forward to closer cooperation."

Just recently, Magnetic Trading has opened a new representative office in Miami, Florida, that aims to serve customers around the Americas.

ITS is a US based nose-to-tail supply chain partner within the air transport aftermarket industry.

AFI KLM E&M to carry out MRO work for Bamboo Airways fleet

Bamboo Airways is more than delighted to extend collaboration with AFI KLM E&M, thus creating further value for both sides.

Bamboo Airways and AFI KLM E&M have signed a Memorandum of Understanding (MoU) for maintenance of the Bamboo Airways fleet of Boeing 787, Airbus A320, and Embraer aircraft. As a part of the agreement, AFI KLM E&M will provide shop visits for the GEnx engines fitted on Bamboo Airways' Boeing 787s fleet, and for the engines equipped on their A320 Familly. AFI KLM E&M may also be called upon for new C-Check maintenance visits for the Boeing 787s at its facilities in Amsterdam, as well as line maintenance operations across an extended stopover network based on the destinations Bamboo Airways flies to. Besides, Bamboo Airways will gain access to the capabilities of EPCOR, the AFI KLM E&M affiliate specializing in the maintenance of APUs, for support of its APS2300 (EJets) and APS5000 (Boeing 787) products.

Ton Dortmans, EVP KLM Engineering & Maintenance said, "We're proud and thrilled at the prospect of continuing to support the soaring success of Bamboo Airways, a young and dynamic airline that has not let the health crisis hold back its international development. We are fully committed to honoring the trust placed in us, and are ready to roll out new support solutions adapted to the needs of Bamboo Airways."

AFI KLM E&M will also undertake C-Check maintenance visits for the Boeing 787s at its facilities in Amsterdam for Bamboo fleet.

Mai Dinh Toan, Deputy General Director of Bamboo Airways said, "AFI KLM E&M has proven to be a trusted airline-MRO expertise partner with its global footprint, multi-product catalogue, the flexibility of its programs and solutions as well as responsiveness, which have led us to reiterate confidence in them. Bamboo Airways is more than delighted to extend collaboration with AFI KLM E&M, thus creating further value for both sides in an attempt to spread its wings to promising international markets in the near future." Through this agreement, Bamboo Airways is once again demonstrating its trust in AFI KLM E&M as a benchmark industrial service provider, capable of supplying adaptive and high-performance aviation maintenance solutions across a large range of products. The young ambitious Vietnamese carrier will draw the benefits of AFI KLM E&M's dual expertise as an Airline-MRO and its global network, supporting its operations and business development through tailor-made support services.

DHL expands intercontinental air network to meet customer demands

Inks Crew and maintenance agreement with Boeing for five 777 freighters.

DHL Express and Singapore Airlines have entered into a Crew and Maintenance agreement (CM) for five Boeing 777 freighters. This agreement marks a further step in DHL Express' expansion of its intercontinental air network to meet customer demand in fast-growing international express shipping markets. The initial agreement is set for more than four years with the opportunity for an extension. As part of the agreement, the first aircraft delivery will be in July 2022, with the second in October 2022. The remaining three aircraft are planned for delivery throughout 2023.

Mr. Travis Cobb, Executive Vice President Global Network Operations and Aviation, DHL Express, said, "With the deployment of five Boeing 777 freighters, we can expand our express service linking the Asia Pacific region with the Americas. Following the pandemic, we see good prospects for strong growth in trans-Pacific trade lanes. By collaborating with Singapore Airlines, we see a unique chance to establish a long-lasting relationship with a long-time partner who shares common values and operates at the highest standard."

Mr. Lee Lik Hsin, Executive Vice President Commercial, SIA, said, "Today's agreement builds on and strengthens the long-standing partnership between SIA and DHL. This new freighter operation will support the fast-growing e-commerce segment, in addition to other key business segments that rely on trusted express services that DHL excels in providing. It also provides a foundation on which the partnership between SIA and DHL can be further expanded in the future. Basing these freighters at Changi Airport will further reinforce Singapore's position as a key air cargo and e-commerce logistics hub, contributing to its growth and development."

Mr. Ken Lee, CEO DHL Express Asia Pacific, said, "This new agreement guarantees capacity on our critical routes out of Singapore as we gear up for ongoing growth in Asia Pacific trade. It gives us greater flexibility to add new routes and optimize our aircraft utilization in the face of unpredictable changes or sudden increases in demand."

The freighters will be based at Singapore's Changi Airport and serve DHL's South Asia Hub. The planes will sport a dual DHL-SIA livery, will be operated by SIA pilots on routes to the U.S. via points in North Asia. SIA will also oversee the maintenance of these aircraft.

Pawan Hans, India's helicopter entity undergoes fleet modernization with Sikorsky S-76D

The Sikorsky S-76D will support Pawan Hans' onshore and offshore helicopter operations in India.

The Sikorsky S-76D will support Pawan Hans' onshore and offshore helicopter operations in India.

Milestone Aviation recently confirmed the lease of six Sikorsky S-76D helicopters to Pawan Hans Ltd. Pawan Hans is owned by the Government of India and falls under the ambit of the Ministry of Civil Aviation in India.

The helicopters of Pawan Hans play a crucial role in the Indian economy by carrying cargo load and passengers. They are also used in the exploration of crude oil. The Sikorsky S-76D will support Pawan Hans' onshore and offshore helicopter operations in India, two of which have been contracted to operate for the Government of India's Oil and Natural Gas Corporation ("ONGC").

Michael York, Head of Emerging Markets at Milestone said, "The S-76D is a new helicopter platform type for Pawan Hans that will enhance their operations with greater capabilities and advanced technologies. Through this transaction, we are not only cultivating a new operator for the S-76D but also starting a long-term relationship between Milestone and Pawan Hans."

The S-76D is a new helicopter platform type for Pawan Hans that will enhance its operations with greater capabilities and advanced technologies.

In addition to the six helicopters, five of which have already been delivered, Milestone and Sikorsky are providing them with comprehensive value and sustainment packages to support the phasing-in of this new helicopter type into its fleet.

TUI Airways continues to place trust in Caerdav for fleet maintenance

TUI send four aircraft to Caerdav's St. Athan facility for maintenance work.

TUI Airways have placed four aircraft, two Boeing 757 and two B-767 at Caerdav's St. Athan's facility to undergo a range of maintenance work. These two aircraft have reached the end of their current lease.

Juergen Jerome, Outsourced Maintenance Manager at TUI Airline said "We have developed an excellent relationship with Caerdav over the past two years – something that has been brought into even sharper focus during the Covid-19 pandemic. The team has delivered storage and maintenance support for a number of aircraft while the industry was grounded, including an engine change and end-of-lease work. What keeps us coming back to St. Athan is Caerdav's quality, consistency and flexibility, with a skilled team that is able to shift focus when required – nothing is too much to ask."

Caerdav carried out an engine change and end-of-lease work for TUI fleet with quality, consistency, and flexibility.

Richard Pitts-Robinson, Head of Commercial at Caerdav, said, "TUI is a fantastic airline to work with; to be entrusted with the range of maintenance work they have brought into St. Athan is a huge endorsement of the standard of work we've been able to complete for them."

Caerdav has so far serviced 40 aircraft for TUI Airways in the last two years.

Swiss Air Rescue undergoes fleet modernization with five-bladed H145 equipped with enhanced navigation

The navigation system uses the new capabilities of the Flight Management System GTN750 Xi by Garmin.

The Swiss Air Rescue Services or REGA has ordered nine five-bladed Airbus H145 to enhance their mission capabilities and increase operational safety. The new five-bladed H145 will replace their current four-bladed versions. REGA's new H145 will come equipped with a state-of-the-art navigation system that uses the new capabilities of the Flight Management System GTN750 Xi by Garmin. It will integrate and control a multi-sensor system that provides highly accurate and reliable navigation capacities. Even in the event of GPS signal loss, the helicopter will navigate safely thanks to Thales' inertial navigation system. This solution will further boost the navigation performance in low IFR conditions and allow the helicopter to be certified as navigation procedure RNP-AR 0.1, which is the most accurate navigation procedure in the helicopter environment. The configuration also includes a new hoist by Vincorion that is being certified on the five-bladed H145.

Bruno Even, CEO of Airbus Helicopters said, "We are very grateful to open another chapter in the relationship between our two organizations with this order for our five-bladed H145. We are always looking at ways to evolve our helicopters by taking into account the feedback of those who operate them each and every day."

The advanced navigation system of H145 will integrate and control a multi-sensor system that provides highly accurate and reliable navigation capacities.

Ernst Kohler, CEO of Rega said, "The H145 has fully proven itself in our operations since entering into service in 2018. We look forward to operating the five-bladed version on our HEMS bases in Switzerland. The helicopters will allow us to further boost our mission capabilities and safety of our operations."

Rega operates 13 HEMS stations in Switzerland. In 2021, the helicopter crews carried out 14,330 missions, including transporting 471 COVID patients. Rega's current fleet includes seven H145s and one H125 used for pilot training.

The H145 light twin-engine helicopter adds a new, innovative five-bladed rotor to the multi-mission aircraft, increasing the useful load of the helicopter by 150 kg. The simplicity of the new bearingless main rotor design also eases maintenance operations, further improving the benchmark serviceability and reliability of the H145, while improving ride comfort for both passengers and crew. The new H145 introduces on-board connectivity to customers and operators through the integration of the next step of the wireless Airborne Communication System (wACS), allowing seamless and secure transmission of data generated by the helicopter.

Powered by two Safran Arriel 2E engines, the H145 is equipped with full authority digital engine control (FADEC) and the Helionix digital avionics suite. It includes a high-performance 4-axis autopilot, increasing safety and reducing pilot workload. Its particularly low acoustic footprint makes the H145 the quietest helicopter in its class.

With EASA STC certification, EFW adds another first to A320P2F platform

The A320P2F is the second variant in Airbus narrowbody P2F solutions.

Elbe Flugzeugwerke (EFW) received Supplement Type Certification (STC) from the European Union Aviation Safety Agency (EASA) for its head-of-version A320 Passenger-to-Freighter (P2F) aircraft. This prototype unit is the first A320P2F aircraft to be developed in the world, joining a family of Airbus P2F programmes that include the A330-200P2F, A330-300P2F and A321P2F.

The A320P2F is the second variant in Airbus narrowbody P2F solutions. Similar to the A321P2F variant, the A320P2F is a collaboration between EFW and its parent companies, ST Engineering and Airbus, with EFW leading the overall programme as well as marketing

cont pg 33

cont pg 32

& sales efforts. The prototype A320P2F aircraft is owned by the aviation leasing arm of ST Engineering. It will be the first of several converted freighter aircraft on lease to Vaayu Group.

Andreas Sperl, CEO of EFW said, "With this STC, we have added another first in the world to our family of Airbus P2F platforms. The A320P2F is a great complement to our other conversion programmes. Airlines that employ different Airbus freighters to meet their various needs will get to enjoy improved operating economics due to the commonality across these platforms. Being a newer-generation freighter, it also offers greener fuel burn outcomes for its operators."

The current global Airbus A320 passenger fleet comprises thousands of aircraft, offering good-fitting options for airlines and leasing companies wanting to invest in converted freighters. The A320P2F is able to accommodate 10 containers and 1 pallet position in the main deck, and seven container positions in the lower deck. Given its gross payload of up to 21 tonnes at a maximum range of 1,850nm and total usable containerised volume of 159m3 (5,603ft3), the freighter aircraft has 85% stowage efficiency. This makes the A320P2F an ideal freighter platform to serve the fast-growing e-commerce market globally.

The widebody A330P2F programme comes in two variants – the A330-200P2F and A330-300P2F. The A330-200P2F can carry a gross payload of up to 61 tonnes for over 7,700 km. The A330-300P2F offers a gross payload of up to 63 tonnes and a containerised volume of up to ~18,581ft3 (~526m3), which brings a new paradigm of efficiency with 23% more cargo volume than other freighter aircraft in the same class.

To meet the rising demand for freighter conversions, ST Engineering and EFW are setting up new conversion sites in China and the U.S. this year, and are ramping up conversion capacity for all their Airbus P2F programmes to over 60 slots per year by 2024.

Airbus and The Helicopter Company take a step towards pioneering sustainable air travel

The agreement foresees the decarbonization of flight operations for Airbus' products in THC's fleet.

The agreement will contribute to the reduction of CO_2 emissions in the urban transportation market.

Airbus and The Helicopter Company (THC) have signed an agreement to continue expanding helicopter activities as well as to introduce urban air mobility in Saudi Arabia. This agreement is an additional step toward the co-creation of an Urban Air Mobility ecosystem in the Kingdom. The Helicopter company already operates 10 H125s and recently added 20 five-bladed H145 and six ACH160 helicopters.

Captain Arnaud Martinez, CEO of THC said, "This is a significant move toward the introduction and efficient operations of cleaner helicopters and advanced technologies in the Kingdom of Saudi Arabia. We are pleased to be a part of this unique opportunity to contribute to the reduction of CO_2 emissions in the urban transportation market together with Airbus."

This agreement includes the use of Sustainable Aviation Fuels for conventional helicopters along with the introduction of urban air mobility (UAM) in Saudi Arabia. These sustainable solutions will be applied to a variety of missions like Emergency Medical Services, Ecotourism or Private and Business Aviation.

Bruno Even, CEO of Airbus Helicopters said, "We are looking forward to working closely with THC to further develop our strong commitment to the decarbonization of our customers' missions. This agreement with one of our major partners is an important step towards pioneering sustainable air transportation services around the world".

The Helicopter Company is the first and only helicopter services provider licensed to operate commercial flights in Saudi Arabia. Since 2014, Airbus has been exploring how electric propulsion can help drive the development of new kinds of aerial vehicles.

This F135 MRO&U capability brings significant industry opportunities to Norway and shows KONGSBERG's increased commitment to the F-35 program.

Kongsberg Aviation Maintenance Services became second fully operation F135 engine depot outside US

The regional capability will support F-35 operators in the region under the F-35's Global Support Solution.

Kongsberg Aviation Maintenance Services or KAMS of Norway successfully achieved all Initial Depot Capability (IDC) requirements for the repair and overhaul of the Pratt & Whitney F135 engine, which powers all three variants of the 5th Generation F-35 Lightning II fighter aircraft.

With this achievement, the KONGSBERG F135 Maintenance, Repair, Overhaul and Upgrade (MRO&U) facility in Norway became the second fully operational F135 engine depot outside of the United States.

Eirik Lie, President Kongsberg Defence & Aerospace said, "This F135 MRO&U capability brings significant industry opportunities to Norway and shows KONGSBERG's increased commitment to the F-35 program. Together with our partners, we will create a leading technical environment at Rygge, supporting jobs to the benefit of the program."

The regional capability will support F-35 operators in the region under the F-35's Global Support Solution.

Andre McMillian, Vice President, Pratt & Whitney Military Engines Sustainment Operations said, "We congratulate the Kongsberg Aviation Maintenance team on reaching this critical sustainment milestone for the F135 engine. The activation of the Norway depot will increase capacity to the global F135 MRO&U network and ensure additional capability for our allies. Standing up the regional MRO&U depots is an integral part of the enterprise's strategy to assure sustainment readiness across the F135 MRO&U network to exceed program requirements."

Atle Wøllo, President, Kongsberg Aviation Maintenance Services AS said, "This is a product of collaboration between the Norwegian Ministry of Defence, the F-35 Joint Program Office, KONGSBERG, and Pratt & Whitney. We are therefore very proud to achieve the Initial Depot Capability milestone today and look forward to further developing the F135 engine depot with all of our partners in supporting the F-35 community."

With the declaration of IDC, the Norwegian depot will immediately begin maintenance repairs for the F135 engine fleet, providing increased capacity to the global F135 MRO&U network. The facility is tailored to support the MRO&U work and testing of the F135 engine.

Safran and HAL ink JV in India to open world-class MRO center for helicopter engines

The Joint Venture will be called Helicopter Engines MRO Pvt Limited (HE-MRO).

Safran Helicopter Engines and Hindustan Aeronautics Limited (HAL) recently signed an MoU in India to extend their cooperation and explore opportunities for new helicopter engines in civil and military markets, reflecting their commitment to the Indian Government's vision of "Atmanirbhar Bharat" towards achieving self-reliance in defense technologies and MRO (Maintenance, Repair, and Overhaul). The Joint Venture will be called Helicopter Engines MRO Pvt Limited (HE-MRO). The signing ceremony took place in the presence of Mr. R. Madhavan, CMD, HAL, Mr. Franck Saudo, CEO, Safran Helicopter Engines and senior officers from the Indian Armed Forces and HAL in Goa, India.

Mr. Florent Chauvancy, EVP OEM Sales, Safran Helicopter Engines and Mr. Amitabh Bhatt, CEO, HAL's Bangalore Complex signed the MoU.

Mr. Madhavan said, "The 1,000 sqm training and office facility and a 3,800 sqm international class shop facility will provide MRO services for Safran TM333 and HAL Shakti engines installed on HAL-built helicopters to increase the operational readiness of the Indian Armed Forces."

Mr. Franck Saudo said, "I am very proud to celebrate the launch of this world-class MRO Centre for the TM333 and Shakti. This complex will be a key factor for building customer satisfaction and supporting the Government of India's vision for aerospace MRO in India. Thanks to this joint venture, we will support all HAL helicopters legacy programs while the MoU opens new perspectives to strengthen further our partnership with HAL directly or through such joint venture on future helicopter engine technologies and platforms".

HE-MRO will be operational by the end of 2023 with a capacity to repair 50 engines a year and a full-capacity goal of 150 engines in the coming years. It will also bring employment opportunities to over 60 qualified engineers and technicians of the region. The facility has an expansion capacity for other engines in the future.

With a fleet of over 1000 engines, including 250 TM333 and over 500 Shakti, India's Armed Forces are one of the largest operators of Safran-designed helicopter engines, and the manufacturer power 100 percent of HAL-produced helicopters.

Shakti is the Indian variant of the Safran Ardiden 1H1, co-developed with HAL. HAL has produced over 500 plus Shakti engines till date successfully. Shakti is installed on HAL's Dhruv and Rudra and has also been selected to power the HAL-designed Light Combat Helicopter (LCH). The Ardiden 1U variant powers the new Light Utility Helicopter (LUH), a three-ton single-engine aircraft. The engine was certified by DGCA (India) on July 26, 2021.

C-130J Super Hercules Program achieved the latest milestone 500th delivery

This Historic Super Herc is operated by the West Virginia Air National Guard's 130th Airlift Wing.

Lockheed Martin recently delivered its 500th C-130J Super Hercules Airlifter to the 130th Airlift Wing of the U.S Government currently undergoing fleet modernization. The 130th Airlift Wing is a long-time C-130 operator located at McLaughlin Air National Guard Base in Charleston, West Virginia.

The U.S. government operates the largest C-130J Super Hercules fleet in the world. This delivery represents the U.S. government's continued transition to the C-130J as the common platform across the Air Force, the Marine Corps, and the Coast Guard.

Rod McLean, vice president, and general manager of Lockheed Martin's Air Mobility & Maritime Missions (AMMM) line of business said, "This delivery represents the thousands of people — past and present — that design, build, fly, maintain and support C-130Js around the world. Like its namesake, the C-130J is a legend defined by its strength and power. Yet, it is the people who are part of the C-130J operator, production, supplier, and industry partner communities who truly define the Super Hercules and helped the C-130J Program reach this monumental achievement."

The C-130J Super Hercules is the current production model of the legendary C-130 Hercules aircraft. With the airlift choice of 26 operators in 22 nations, the global C-130 fleet has surpassed more than 2 million flight hours and holds more than 54 world records.

Defined by its versatility, there are 17 different mission configurations of the C-130J that include transport (military and commercial), humanitarian aid delivery, aerial firefighting, natural disaster relief support, medevac, search and rescue, weather reconnaissance, and aerial refueling.

Curtis Wright Laser Peening process on F-35 fighter jet receives successful verification

The verification marks FRCE as the first facility in the world capable of conducting on-site laser peening modification on an F-35 aircraft.

Curtiss-Wright Corporation announced the successful verification of the Curtiss-Wright Laser Peening process on the airframe components of the fifth-generation F-35 fighter jet. The verification was implemented by the Fleet Readiness Center East (FRCE) at the Marine Corps Air Station Cherry Point, NC and the first F-35B to undergo the treatment has been successfully returned to the fleet. Curtiss-Wright has been selected to help extend the life expectancy of the F-35B, the short takeoff-vertical landing (STOVL) variant flown by the U.S. Marine Corps and other allied nations around the world, by utilizing its critical Laser Peening process.

Lynn M. Bamford, President and CEO of Curtiss-Wright Corporation said, "Curtiss-Wright is honored to be part of this milestone through the utilization of our critical surface treatment applications, building on our commercial and industrial capabilities to support the military's premier fighter jet program. We are excited to be part of the team that returned the first laser peened F-35B back to active service, and we look forward to a long and successful relationship with all of the stakeholders involved on other F-35 variants."

The Laser Peening process was developed by the Curtiss-Wright Surface Technologies Division. Laser Peening strengthens the aircraft's frame without adding any additional material or weight, which would reduce its capability by limiting its fuel or weapons carrying capacity. The technology has wide applications across the defense, commercial aerospace, commercial nuclear and industrial markets. The verification marks FRCE as the first facility in the world capable of conducting on-site laser peening modification on an F-35 aircraft. A second facility, Ogden Air Logistics Complex at Hill Air Force Base, Utah, is now also fully operational and the first F-35B will be processed at that facility starting in April of 2022, followed shortly thereafter by the F-35C.

MRO BUSINESS TODAY

AN AD. THE MOST TRUSTWORTHY FORM OF BRAND COMMUNICATION

Distributed

21,837+

High profile MRO professionals worldwide

MRO Business Today is a premier industry fortnightly digital e-News Magazine that is distributed to **21,837*** high profile MRO professionals worldwide.

We also treat our readers with exclusive interviews and feature stories. It generates worldwide readership through its website (www.mrobusinesstoday.com).

Our digital magazine finds it way directly to their mail boxes every fortnight with all the relevant and latest news from the MRO Industry.

NEWS DESK
editorial@mrobusinesstoday.com

ADVERTISEMENTS
advt@mrobusinesstoday.com

www.mrobusinesstoday.com

Boeing and Airbus come together to work on H-47 Chinook for German forces

It is the only heavy-lift helicopter capable of providing Germany immediate interoperability with allied nations and is significantly more powerful, versatile, and agile.

Boeing and Airbus Helicopters signed a Memorandum of Understanding (MOU) to partner on the H-47 Chinook in support of Germany's Schwerer Transporthubschrauber (STH) heavy-lift helicopter requirements.

Mark Cherry, Boeing vice president, and general manager of Vertical Lift programs said, "We are pleased that Airbus Helicopters has joined our team of strategic partners on the H-47 Chinook program for Germany, and together we will provide the strongest offering to the Bundeswehr. The Chinook has been the preferred heavy-lift helicopter in Europe for decades and a cornerstone of all kinds of NATO operations. It is the only heavy-lift capable of providing Germany immediate interoperability with allied nations and is significantly more powerful, versatile and agile than any other aircraft in its class."

The new partnership between Boeing and Airbus aims at bolstering German defense readiness while supporting German industry and economic growth. The partnership will draw on the strengths and combined expertise of the world's leading aerospace companies to deliver advanced capability,

Wolfgang Schoder, General Manager of Airbus Helicopters in Germany said, "Building on decades of experience as a partner of the Bundeswehr, Airbus Helicopters is excited to join Boeing's Chinook Germany industry team and to partner with Boeing on delivering maximum operational availability to the Bundeswehr. The H-47 Chinook is a proven, mature program in service with many of our allies, and is the optimum solution for Germany with an excellent price-performance ratio."

Boeing is committed to working with the German industry on aircraft sustainment, including post-delivery modifications and installations, aircraft maintenance, supply chain services, training and logistical support, as well as the potential for sub-systems Maintenance Repair and Overhaul work.

Dr. Michael Haidinger, president of Boeing Germany said, "The partnership with Airbus Helicopters reaffirms our commitment to strengthen cooperation with German industry. With our Chinook offering and together with our German industry partners, we will create more than 500 highly skilled jobs in-country, all in direct support of the Bundeswehr's heavy-lift mission requirements."

The Chinook helicopter has proven its unique capabilities and mission readiness in several platforms and is chosen favorite of eight NATO nations. Chinook has delivered Air-to-Air refueling, Medevac, troop transport, search and rescue and humanitarian and disaster relief, and special operations.

Mesfin Taswe Bekele succeeds Tewolde GebreMariam as the CEO of Ethiopian Airlines

Mr. Mesfin has 38 years of experience in airline management and various supplementary operations.

Mesfin Taswe Bekele is appointed as the CEO of Ethiopian Airlines Group, he succeeds Tewolde GebreMariam whose early retirement request due to health issues has been approved by the board.

Mr. Mesfin has 38 years of experience in airline management and operations in the areas of aircraft maintenance and engineering, procurement, information technology, flight operations, capability development, capacity building, development of corporate strategies, airline operation management, and corporate leadership. He earned Master's in Business Administration (MBA) from Open University in the UK, MSc degree in Electrical Engineering specializing in Communications Engineering from Addis Ababa University, and BSc degree in Electrical Engineering from Addis Ababa University.

The Board Chairman of the airline, Mr. Girma Wake said, "I would like to congratulate Mr Mesfin on his new appointment and I am fully confident about his capabilities. We believe that Mr Mesfin will lead the airline to even greater success, keeping it on the right track that will see it grow through many generations to come. I urge the 17,000 employees and the board members to stand with the new Group CEO to keep the airline flying high. We are also thankful for the remarkable contributions of the former Group CEO."

Mr Mesfin Tassew on his part said, "I am honored and humbled to be appointed as the Chief Executive Officer of Ethiopian Airlines Group which I have been serving for nearly four decades in various positions. My new role gives me the opportunity to carry on with the fast and profitable growth of our beloved airline and take it to the next level. I call on all my colleagues at Ethiopian to join hands and forge ahead for further success."

Mr Mesfin has been a key player responsible for planning and execution of strategies that led the airline to shine in the African skies and beyond. He assumed responsibilities including but not limited to overall maintenance of Ethiopian fleet, capability and capacity development, leading the automation project of the Maintenance and Engineering Division, and managing projects related to aircraft acquisition.

Mr. Mesfin has been a key player responsible for planning and execution of strategies that led the airline to shine in the African skies and beyond.

Mr. Mesfin has been serving as a Chief Executive Officer of ASKY Airlines since 2021 and has led the airline with a profitable growth strategy until the time of his new appointment. He has served as a Chief Operating Officer of Ethiopian Airlines from 2010 –to 2021 and successfully led the operation of the airline in an efficient and cost-effective way by optimizing processes and developing internal resources to cope with the airlines' growth strategy.

Besides, he was Vice President of Maintenance and Engineering from 2006 –2010; Chief Information Officer from 1998 – 2006; Manager of Planning and Automation, Maintenance and Engineering Division from 1995 – 1997; and Avionics Engineer and Supervisor Avionics Engineering Group from 1984 – 1994.

International CALENDAR 2022

2022

Date	Event	Venue
26-28 Apr	MRO America	Dallas, TX, USA
03-05 May	NBAA Maintenance Conference	San Antonia, TX
23-25 May	EBACE	Geneva, Switzerland
07-08 Jun	Engine Leasing, Trading & Finance	London, UK
09-11 June	France Air Expo	France
15-16 June	MRO BEER	Istanbul, Turkey
21-23 June	World ATM congress	Madrid , Spain.
22 Jul	AERO South Africa	South Africa
06-08 Oct	Istanbul Airshow	Istanbul Atatürk Airport, Istanbul
7-8 Sept	AERO-ENGINES EUROPE	Dublin, Ireland
7-8 Sept	Helitech Expo	ExCeL London
20-22 Sept	MRO ASIA-PACIFIC	Singapore
18-20 Oct	MRO EUROPE	London, UK
01-03 Nov	Abu Dhabi Air Expo	Abu Dhabi
06-09 Nov	ATCA	Washington, D.C.

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