



Jan 01<sup>st</sup>, 2022



**'When people  
are on holidays  
you make their  
holiday travel  
safer.  
We salute you.'**

## Lufthansa Technik to provide Engine Services for Frontier Airlines

*21 CFM56-5B engines under five-year contract, Overhauls and Mobile Engine Services included.*

Frontier Airlines, ultra low-cost carrier selects Lufthansa Technik to repair and overhaul 21 CFM56-5B engines as well as to supply Mobile Engine Services.

In the next five years Lufthansa Technik will perform overhauls and surgical repairs on the engines which fly under Frontier's fleet of 112 Airbus A320 family aircraft. Lufthansa Technik in Hamburg, Germany, will overhaul the engines, whereas surgical repairs can be done locally at Lufthansa Technik's facility in Tulsa, Oklahoma.

Trevor Stedke, Senior Vice President of operations, Frontier Airlines said "Lufthansa Technik is an important and long-standing partner for us, which makes us confident that they will meet our high expectations regarding engine maintenance, flexibility, and price."

"We are extremely happy that we were able to win the trust of Frontier. Engines are the most valuable asset of an aircraft.

We look forward to growing our partnership and support Frontier's growth, as one of the most successful airlines in the American market, with a focus on providing affordable air travel throughout the U.S. and beyond. We will fulfill the trust placed in us and prove that we can provide high-quality and reliable services at a reasonable price," said Dietmar Focke, Vice President engines, Lufthansa Technik.

Major investments were made at the Tulsa engine shop, new tooling was acquired, mechanics were trained and the existing test cell was upgraded to cover CFM56-5B testing. The team in Tulsa will also perform Mobile Engine Services for repairs necessary between overhauls, aiming to significantly reduce operational downtime and avoid unnecessary shop visits. Depending on the requirements of the individual repair solution, the available options range from on-wing and in-field services to more complex repairs performed at the shop in Tulsa.

## EHang secures its first order VT-30 autonomous aerial vehicle

*EHang recently completed the flight demonstration of dual-seat AAV EH216 with the cooperation and support of MASC.*



The AAVs have been expected to be used in the scenarios of travel on outlying islands and sparsely populated areas, life rescue and material support in disasters.

EHang recently secured its first order for VT-30, a long-range electric passenger-grade autonomous aerial vehicle. EHang will work with local partners, such as the Okayama Kura-shiki Mizushima Aero & Space Industry Cluster Study Group (MASC), to further explore use cases with its EH216 and VT-30 and develop the urban air mobility

network in Japan.

EHang recently completed the flight demonstration of dual-seat AAV EH216 with the cooperation and support of MASC. The flight tests took place in June 2021 at Fukushima and Okayama. This further explored the application and practice of AAV solutions in use cases such as cross-island travel, emergency

rescue and aerial logistics.

Mr. Narisawa Koichi, the Counselor of Civil Aviation Bureau at Ministry of Land, Infrastructure, Transport and Tourism ("MLIT") of Japan said, "The AAVs have always been expected to be used in the scenarios of travel on outlying islands and sparsely populated areas, life rescue and material support in disasters. I also personally feel the efforts made by enterprises in various industries like EHang to achieve this goal. The MLIT of Japan will formulate and publish new flight test guidelines to support the experimental tests of enterprises, such as EHang."

Under the witness of many guests and media, the EH216 successfully completed a flight demonstration for emergency rescue scenarios in the extreme weather with strong winds up to 27.5m/s at the Fukushima Robot Test Field (RTF). In 2019, Public-Private Council for Air Transportation Revolution in Japan positioned the Fukushima RTF as a fixed site for test flights, preparing for the goal of achieving commercial applications of eVTOLs in 2023.

## Air Lease Corporation to Deliver New Airbus A321-200neo LR Aircraft to Peach Aviation

*This aircraft is the first A321neo LR to join Peach Aviation's fleet.*

Air Lease Corporation recently announced the delivery of one new Airbus A321-200neo LR aircraft on long-term lease to Peach Aviation, an affiliate of ANA based in Osaka, Japan. Featuring CFM International LEAP-1A32 engines, this is the first of two new A321-200neo LRs confirmed to deliver to the airline from ALC's orderbook with Airbus.

Chi Yan, Senior Vice President of Air

Lease Corporation said "ALC is delighted to be the first to introduce the A321-200neo LR to Peach Aviation. The A321neo LR will provide key enhancements to the airline's fleet operations as Peach continues to add the most modern, fuel-efficient aircraft to their expanding fleet and offer the highest quality passenger experience."

In addition to this new A321-

200neo LR, Peach Aviation currently has two A320-200neos on long-term lease from ALC.

Air Lease Corporation is a leading aircraft leasing company based in Los Angeles, California that has airline customers throughout the world.



The first of two new A321-200neo LRs confirmed to deliver to the airline from ALC's orderbook with Airbus.





The cabin interior was designed by an external design studio and included a number of complex features.

## Jet Aviation's milestone cabin interiors modification of VVIP cabin in Boeing 787 jet

*The exceptionally low cabin noise Jet Aviation achieved on this aircraft is the culmination of long-term collaborative research and development.*

Jet Aviation recently delivered its first modified VVIP cabin interior on a Boeing 787-8 aircraft to an undisclosed customer. The aircraft is notable for its low weight and low cabin acoustic values.

Enrique Garrido Bosch, completions program director for the program said, "The exceptionally low cabin noise Jet Aviation achieved on this aircraft is the culmination of long-term collaborative research

and development between us, universities, OEMs and partner companies. We're delighted to see our work lead the industry in sound space, and our customer was particularly delighted with his environment of calm. We are very excited about the possibilities for further innovation to develop and shape sound experiences."

Jeremie Caillet, SVP Regional Operations EMEA said, "The company drew on years of advanced preparation and research from its team of in-house artisans to incorporate several new design elements into the interior. We delivered the aircraft on time and under target weight using our existing EASA STC for certifying interior installations on Boeing 787 aircraft — the first STC of this kind to be granted to a completion center. It is truly one of the most beautiful and technically impressive cabins we have ever redelivered in Basel. I couldn't be prouder of how the team embraced every challenge and ultimately positioned us strongly for future 787 completions."

The Boeing 787 was delivered green to Jet Aviation's Completions Center in Basel in October 2019 and was recently redelivered to the customer on schedule. The cabin interior was designed by an external design studio and included a number of complex features, all engineered and produced in-house at Jet Aviation.

## Singapore Airlines acquires seven Airbus A350 freighters powered by Trent XWB-97

*The Trent XWB-97 as already proved it worth as powering short-haul or long haul flights, which makes it the ideal solution for the passenger and freighter market.*

Singapore Airlines recently signed a Letter of Intent for seven Airbus A350F Freighters powered by Rolls-Royce Trent XWB-97 engines. This selection by Singapore Airlines is another endorsement of the proven capability of the Trent XWB powered A350 family, which has delivered unprecedented reliability to customers since its entry into service in 2015. In addition, Singapore Airlines has committed to a 15-year TotalCare maintenance agreement on the Trent XWB-97 for the A350F Freighter.

Chris Cholerton, President of Rolls Royce Civil Aerospace said, "We are

delighted by Singapore Airlines' decision to sign an agreement to acquire seven Airbus A350F freighters powered by Rolls-Royce Trent XWB-97 engines. This provides the exciting opportunity for us to expand our presence in the freighter market on a new aircraft type and also further strengthens our much valued partnership with Singapore Airlines built over the last 25 years."

As versatile as it is reliable, the Trent XWB has already shown it is equally efficient at powering short-haul or long haul flights, which makes it the ideal solution for the passenger and freighter

market with a varied network. Now the engine will also show its versatility by powering dedicated freighter as well as passenger flights – from people to cargo – to their final destinations.

With a renewed focus on transitioning the aviation industry towards net zero in the coming years, the Trent XWB supports Singapore Airlines' sustainability strategy with a 15 per cent efficiency improvement over the first generation of Trent engine, making it the most efficient aero engine in service in the world today.



# MRO recovery Post Pandemic

The COVID-19 pandemic sure shook the Aviation industry, with thousands of grounded planes and jobs lost, there was a time when the aviation industry across the globe was almost on a stand-still. But there was hope, aviation professionals across the world believed that once the pandemic clouds fade away, the aviation industry will be back on its feet in no time and that is exactly what has happened. Today almost 18 months later as vaccination rolls out, travel industry has opened up, airports are crowded once again, lockdowns have

ended and things are headed in the right direction. Boeing predicts global commercial fleet will surpass 49,000 airplanes by 2040. China, Europe, North America and other Asia-Pacific countries each account for about 20 per cent of new airplane deliveries, with the remaining 20 per cent going to other emerging markets.

In this article let us explore how the pandemic affected the MRO sector and whether there are any opportunities or major changes in the global MRO industry post pandemic.

## MRO Market recovery statistics

As per the Oliver Wyman forecast there is a 39 percent decline in MRO revenues across the industry while MRO markets are expected to recover to 2019 levels in 2022 or 2023. Airlines expect a slightly earlier recovery than MRO. The pre-COVID forecast originally predicted USD 91.6 billion in MRO spending but an updated report released at the end of July showed the dropped numbers at USD 50.3 billion. The drop in MRO spending is especially pronounced in the sector's biggest and





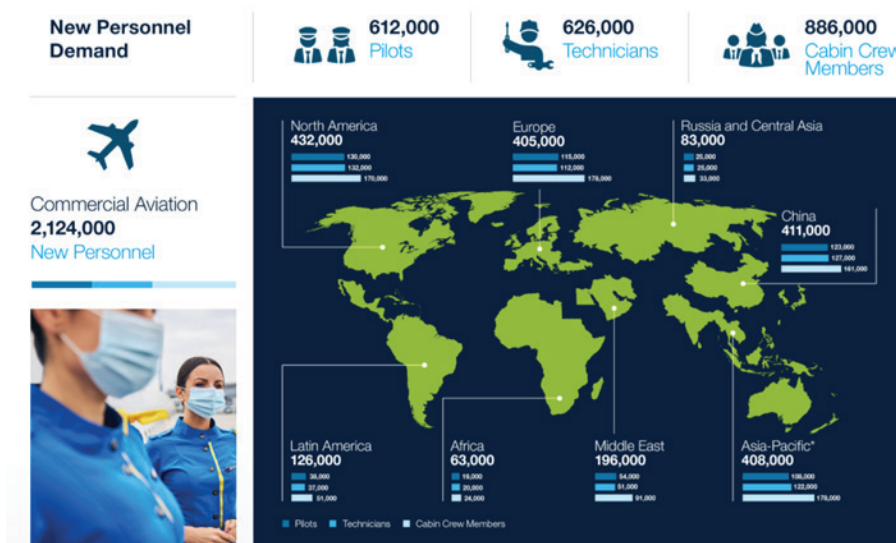
most expensive segments: engines and airframes. The Oliver Wyman report estimated that airframe spending plummeted by 59 percent, with a pre-COVID spend estimate of USD 17.9bn adjusted down to just USD 7.9bn post-COVID. Deferred engine overhauls and parked fleets made engine spend fall from USD 43.5bn pre-COVID to USD 23.2bn post-pandemic.

As per CAPA reports, the Asia-Pacific MRO industry is expected to face a temporary capacity crunch when airlines return more of their fleets to service after the COVID-19 pandemic. However, the longer-term capacity outlook is brighter as MRO providers are keeping facility expansion plans largely on track.

Major MRO companies in this region have seen a significant dip in business due to airlines parking large numbers of aircraft and deferring heavy maintenance. But demand could spike quickly when COVID-19 restrictions ease, with many Asia-Pacific airlines

## OUTLOOK BY REGION

2021-2040



needing MRO providers to help reactivate aircraft that have been in storage for several months. While the Asia-Pacific travel sector may be recovering more slowly in the short-term, in the long term it is projected to grow much faster than in any other region, according to Boeing. Aircraft delivery estimates show that Asia-Pacific will be the key marketplace for Boeing and other manufacturers. Darren Hulst, Boeing VP-commercial marketing says the centre of aviation gravity [will continue] to pivot more and more towards Asia over the next few decades.

### Skilled workforce shortage will continue to be a challenge...

One of the major challenges facing the MRO industry could continue to be workforce shortages – a potential problem for many parts of the aviation industry, but seemingly a particular headache for MRO. As per the Boeing forecast of 2021, there will be a need of 612,000 new pilots, 626,000 new maintenance technicians and 886,000 new cabin crew members to fly and maintain the global commercial fleet over the next 20 years. One of the major factors for this are instability in the industry, competition from other industries, lack of qualified applicants, and a reduction in long-term labor supply and reluctance of women entering the industry. According to Oliver Wyman, women make up only 12 percent of staff and 8 percent of those in leadership roles across maintenance and engineering organizations.

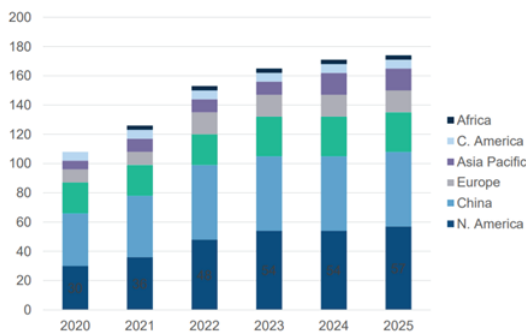
### Parked Aircraft

At the beginning of first pandemic wave, airlines parked around 60 percent of the total global fleet. Never before has the industry seen so many of its aircraft temporarily put out of service. This unprecedented situation has caused a number of maintenance and repair challenges. Before parking the aircraft, even if it's just for a few days, there's a detailed process that includes covering intakes and exhaust points, protecting the internal entertainment systems, greasing and cleaning landing gear, turning off cockpit controls and disconnecting batteries. Most parked aircraft are then put on a service schedule that requires basic visual inspections every seven days, electrical and brake maintenance every 14 days and fuller checks, including starting the engine and inspecting anti-ice systems, every 30 days. Most of this parked aircraft are enroute to permanent storage while many of the widebody fleet have gone into early retirement. This is because the longer the aircraft is parked, the periodic maintenance interventions go down.

This uncertainty faced by airlines for their parked fleet has affected the MROs, particularly the independent MROs as the airlines are now mostly opting for basic in-house maintenance process as a part of their cost-cutting policy.

Also, longer aircraft remain grounded, the higher the chances that some airlines will not survive the crisis. If and when airlines go bankrupt, MROs and other

2020-2025 Estimated Global Freighter Conversion Capacity (# aircraft)



**Winners: larger variants & ample feedstock**

A321, 737-800, A330-300, 767-300, 777-300ER

**Losers: smaller variants & declining feedstock**

A330-200, A320, 757, 737 Classic, 737-700

dependent companies are likely to follow.

## Early fleet retirements

Apart from workforce challenge, early retirement of major widebody aircraft across the globe by almost all major operators led to further disruptions in MRO market recovery. As per Oliver Wyman, despite making up only 20 percent of the fleet, widebody aircraft made up 35 percent of retirements in 2020. Recovery of widebody flying is expected to take longer and will grow more slowly than narrowbody flying into the future. These shifts will have profound impacts on the MRO industry. Besides, changes to fleet plans and strategies will also led to further long-term disruptions in recovery.

## New Aircraft Challenges

The parked aircraft might never see the light of the day again, and with increased number of early retirements, coming years will witness more and more Next-Gen aircraft. These fleet will be more technologically advanced with latest innovations, giving less time for MROs to adapt to this change. New innovative solutions like predictive maintenance, increased digitization, utilization of Big Data and blockchain technologies have already paved their way deep into

aviation circles. Hence MROs will have to invest heavily to support these new capabilities and train their technicians on how to operate and service them.

Further complicating this challenge for MRO suppliers, newer aircraft are not only more high-tech, they also require less maintenance and fewer replacement parts. With traditional MRO services thus likely to decline, how suppliers respond to the shift to next-generation aircraft will be vital.

## OEMs Versus MROs

The next five years will prove to be the most challenging for MRO industry. The main focus needs to be to create adaptable business, however problems like competitive positioning of OEMs versus MROs in the aftermarket and labor availability might just affect the market recovery. Oliver Wyman predicts a steady growth of OEMs over the next five years. This growth will be mostly concentrated on new platforms. OEMs are likely to be more focussed on engine and component aftermarket rather than airframe.

## More Mergers and Acquisitions for mutual benefits

Earlier the mergers and acquisitions were most for the purpose of cost savings

and synergies. However today this market focuses on new product deliveries and robust market expansions into emergent MRO markets like Asia and Middle East. The acquisitions are used to gain new capabilities, access emerging technologies, and geographic expansion.

As majority of the aerospace market is focussed in US, several tier suppliers are penetrating the US markets through M&A. The M&A activities are also increasing in the Asia-Pacific region as several OEMs are opening manufacturing facilities in Asia. This will lead to a smaller number of independent MRO operators in the long run.

In what seems to be like one of the largest mergers in the aviation industry, AerCap completed the acquisition of GE Capital Aviation Services business (GECAS) from General Electric. This merger not only positions AerCap as the worldwide industry leader across all areas of aviation leasing: aircraft, engines and helicopters but will have large scale implication in commercial aftermarket.

## Boom in Passenger to Freighter Conversions

Passenger-to-freighter conversions are expected to reach historical levels - many facilities are fully booked through 2024 as per Aerodynamic Advisory predictions.

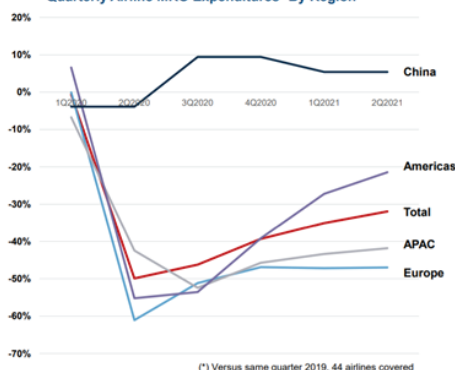
## Road to Recovery

As per the forecast by Aerodynamic Advisory, MRO spending remained resilient in China and nearly recovered in the US...elsewhere it remained well below pre-COVID levels

However, all hope is not lost. A dynamic time awaits the MRO industry on multiple fronts. Aircraft OEMs need to revise their aftermarket goals and narrow their offerings including broad support. Engine OEMs need to watch supply chain to handle coming ramp-up and need to carefully manage their supply chain to prepare for the ramp-up.

The exact time span for MRO market to completely recover still remains largely uncertain. Needless to say, Covid has clearly challenged what we do and how we do it. Now is the time for MROs to revisit their strategies, workforce training technics, operations to adjust to the new normal.

Quarterly Airline MRO Expenditures\* By Region



› Global MRO spending remains >30% below pre-COVID levels

› China and the US are the most resilient MRO markets

› Europe and APAC remain well below pre-COVID spending levels

Source: Airline Financials, Aerodynamic Advisory analysis

25

Aerodynamic



# Airbus delivers world's first H160 to Japan's All Nippon Helicopter

*With 68 patents, the innovative H160 is the world's most technologically advanced helicopter.*

Airbus recently deliver the first ever H160 to Japanese operator All Nippon Helicopter (ANH), heralding a new chapter for this next generation twin-engine helicopter.

The multi-role H160 was delivered from Airbus' helicopter facility in Kobe, Japan, where flight training and specialised equipment installation for electronic news gathering will be performed before the helicopter's entry into service next year.

Bruno Even, Airbus Helicopters CEO said "It is an honour to have ANH as our very first H160 operator. I would like to thank ANH for their continued trust and confidence in our helicopters. I'm also very proud of the hard work and dedication of our teams in France and Japan in preparation of the aircraft delivery. I can't wait to see this next-generation helicopter flying the skies of Japan, playing a key role in the country's electronic news gathering market."

ANH is excited to be the first in the world to receive this state-of-the-art H160 helicopter to support our electronic news gathering missions. The electronic news gathering industry is changing rapidly, and we are happy to have the perfect helicopter for our operations, becoming the leading workhorse in our Airbus fleet" said Jun Yanagawa, President of ANH.

ANH deploys an Airbus Helicopter fleet comprising five AS365s and five H135s. This H160 will join its existing fleet for electronic news gathering for the TV stations across Japan.

The H160 was granted its type certificate by the European Union Aviation Safety Agency (EASA) in July 2020, followed by the certification from the Japan Civil Aviation Bureau (JCAB) in May 2021 and the Brazilian Civil Aviation Agency in September 2021.

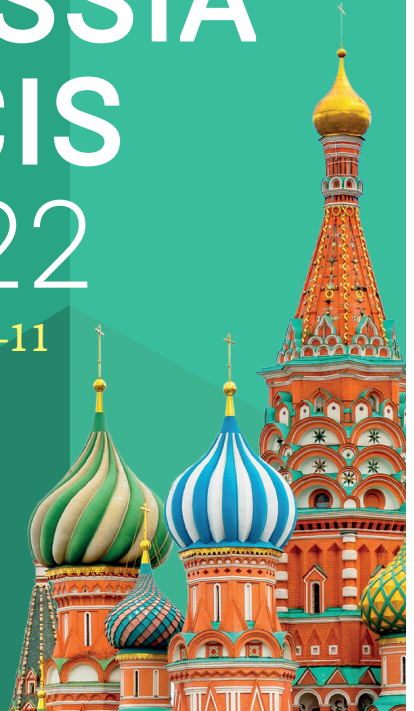
Designed as a multi-role helicopter capable of performing a wide range of missions such as offshore transportation, emergency medical services, private and business aviation, as well as public services, the H160 integrates Airbus' latest technological innovations. The helicopter provides passengers with superior comfort thanks to the sound-reducing Blue Edge blades and superb external visibility that benefits both passengers and pilots.



# MRO RUSSIA & CIS 2022

March 10-11

Moscow  
Russia



700

offline  
participants

100+

international  
participants

60+

airlines

MRO Russia & CIS is the only event of its kind and scale in the ex-USSR dedicated entirely to covering the burning issues of restructuring MRO services for the region's air transport.

## KEY TOPICS

- Aircraft MRO Development
- MRO IT & Digitalization
- MRO Component
- Engine MRO
- Technical Staff Training
- Aircraft Connectivity and Cabin Modification

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# RBI Hawker Australia Appoints Rotor Blade Repair Service Center for Leonardo Helicopters

*RBI Hawker Australia is authorized to offer OEM approved helicopter rotor blade repair services to Leonardo AW139 and AW109 models.*



RBI Hawker Australia.

RBI Hawker Australia recently announced that it has been appointed a rotor blade repair service center for Leonardo Helicopters. The Brisbane-based facility has been operating in Australia since receiving its Part 145 maintenance organization approval from the Australian Civil Aviation Safety

Authority (CASA) in June 2021. It was appointed a Customer Service Facility for Bell in July 2021.

With this latest approval, RBI Hawker Australia will offer OEM approved helicopter rotor blade repair services to Leonardo AW139 and AW109 models from its 1,000-square-meter maintenance

facility in Eagle Farm, Brisbane.

Ian D'Arcy, Jet Aviation's vice president for North East Asia said "This service expansion demonstrates our ongoing commitment to providing high-quality OEM-supported rotary blade repair services to both government and commercial Leonardo helicopters operators in the region. We look forward to working closely with Leonardo Helicopters to provide the quality customer service and support that operators have grown accustomed to expect from RBI Hawker, both in the Middle East and Australia."

RBI Hawker has been providing maintenance support to both commercial and military helicopter operators in the Middle East, Africa, Asia, Eastern Europe and wider regions from Dubai since 2005. It is the authorized Bell CSF and Leonardo Service Center with an extensive OEM-approved standard and expanded repair portfolio.

# GEODIS selects Unilode for ULD management solutions

*GEODIS awards five-year ULD contract to Unilode Aviation Solutions.*

GEODIS, a global leading supply chain provider, has entered into a five-year unit load device (ULD) supply, management and repair agreement with Unilode Aviation Solutions, the market leader in outsourced ULD management and repair services.

Stanislas Brun, Senior Vice President, Global Air Freight, GEODIS, said "As airfreight capacity offered by airlines has significantly decreased during the pandemic, we decided to lease our own freighter aircraft to ensure air cargo space availability for our customers and increase the speed of their shipments. Unilode's ULD management services proved to be the most convenient and appropriate solution for GEODIS' start-

up airline activities as in addition to supplying the necessary stock of ULDs at all our destinations, Unilode also takes care of all ULD-related operational tasks. We are pleased with our newly formed partnership and are confident that our cooperation will be further developed in terms of volume and services."

"GEODIS' investment into its own dedicated aircraft is a great example of freight forwarders taking ownership to overcome air cargo capacity shortages. From Unilode's pooled ULD fleet we are able to quickly supply containers and pallets needed for GEODIS' freighter aircraft operations. Additionally, we also reduce costs and carbon emission associated with the repositioning of damaged equip-

ment, as Unilode has its own ULD repair centres covering GEODIS' destinations in the Netherlands, the United Kingdom, the USA, and Hong Kong. We look forward to partnering with GEODIS and contributing to the success and growth of its own air cargo operations" said Marc Groenewegen, Chief Commercial Officer, Unilode.

Currently, GEODIS leases one A330-300 aircraft, converted into a freighter, and flies to AMS, ORD, STN and HKG, to increase supply chain velocity and airfreight capacity for its customers. Unilode supplies containers and pallets to GEODIS and provides its full range of ULD management solutions, including procurement, planning, logistics, repair and digitalisation.



# Air France' focus on improving environmental performance, orders 100 next-gen A320neo

*The latest A320neo offers a unit cost reduction of more than 10percent, as well as a 15percent reduction in fuel consumption.*



These aircraft will operate medium-haul routes in Europe, notably from Amsterdam-Schiphol - KLM's global hub and Transavia Netherlands' main base.

Air France-KLM recently ordered 100 Airbus A320neo aircraft with an aim to improve their economic and environmental performance. The order covers Airbus A320neo and Airbus A321neo aircraft. The first deliveries are expected in the second half of 2023.

Benefiting from the latest technological innovations, the A320neo family aircraft offer the best performance in their category for the network needs of the Group's airlines. Compared to previous generation aircraft, they offer a unit cost reduction of more than 10percent,

as well as a 15percent reduction in fuel consumption and CO<sub>2</sub> emissions. Their noise footprint is also 50percent lower.

These aircraft will operate medium-haul routes in Europe, notably from Amsterdam-Schiphol - KLM's global hub and Transavia Netherlands' main base, and from Paris-Orly, Transavia France's main base.

Details of the cabin configuration will be announced at a later date.

Fleet renewal is the first lever to cut CO<sub>2</sub> emissions, with immediate effect. Alongside the use of sustainable aviation fuels and eco-piloting, it is one of the pillars of the Air France' Group's decarbonization trajectory, which aims for net zero emissions by 2050, and -50percent CO<sub>2</sub> emissions per passenger/km by 2030.

# DHL places firm order of nine 767-300 Boeing Converted Freighters to meet cargo demands

*The additional B767 freighters are part of DHL's efforts to modernize DHL's long-haul intercontinental fleet.*

DHL placed a firm order for another nine 767-300 Boeing Converted Freighters. These additional freighters will help expand DHL's long-haul intercontinental fleet in response to increased global demand for cargo capacity.

Geoff Kehr, senior vice president, Global Air Fleet Management, DHL Express said, "We are confident in the quality and OEM expertise that comes with Boeing's converted freighters. The additional B767 freighters are part of our efforts to modernize DHL's long-haul intercontinental fleet in order to fly eco-friendlier and more cost-efficiently. Our goal is to enhance our well-connected global network whilst reducing carbon emissions and fuel consumption to benefit the environment, partners and customers alike."



DHL has taken delivery of seven of a batch of eight 767-300BCF, that have been leased to DHL partner airlines in the Middle East and Latin America to support its expanding regional networks.

Ihsane Mounir, Boeing's senior vice president of Commercial Sales and Marketing said, "We are pleased that DHL continues to expand their 767-300BCF fleet to help meet the growing demands

for their global logistics and cargo business. The versatility of the 767-300BCF makes it the preferred medium widebody converted freighter for both the general and express cargo markets, ensuring DHL will have the capability, reliability and efficiency they need to capture growth opportunities and maximize their air cargo operations."

The 767-300BCF is the world's most efficient medium widebody converted freighter and can carry up to 51.6 tonnes (113,900 pounds) up to 6,190 kilometers (3,345 nautical miles). 767 Freighters provide the lowest operating costs per trip with excellent payload and range capability. The 767-300BCF has more than 100 orders and commitments to date.

## Pratt & Whitney opens 8th facility in Asia to support GTF MRO work

*The facility will serve PW1100G-JM engines for the A320neo family with full disassembly, assembly and test capability.*



Pratt & Whitney's GTF MRO Network gained eighth facility in Asia Pacific with Korean Air, specifically its Korean Air Maintenance and Engineering Division. The facility will serve PW1100G-JM engines for the A320neo family with full disassembly, assembly and test capability.

With more than 10,000 engine orders and commitments from more than 80 customers, GTF engines now power more than 1,100 aircraft with 56 operators across three aircraft families. To keep pace with the growing fleet, the GTF MRO network

continues to expand around the globe.

Marc Meredith, executive director of GTF Engine Aftermarket at Pratt & Whitney said, "Pratt & Whitney has enjoyed a long-standing relationship with Korean Air dating back to the late 1960s, and today we are excited to welcome them to the GTF MRO network. Seeing both sides of the equation – operation and maintenance – Korean Air has the experience we expect of our network providers."

Korean Air is the eighth facility announced in Asia that will support GTF

MRO work. Three shops are currently active, including MTU Maintenance Zhuhai in China, Pratt & Whitney's Eagle Services Asia (ESA) in Singapore, as well as IHI, which is part of JAEC, in Japan.

Mr. Sookeun Lee, Executive Vice President and Chief Operations Officer at Korean Air said, "We are excited to be joining the trusted network of GTF MRO service providers. Since 2018, we have been flying GTF-powered A220 aircraft, with ten currently in our fleet. We are looking forward to next year, in which we expect to take delivery of our first GTF-powered A321neo aircraft."

The expanding GTF MRO network is comprised of the industry's leading MRO companies. There are currently ten active GTF MRO engine centers worldwide. The GTF MRO network is part of Pratt & Whitney's EngineWise solutions, which provide engine operators with a variety of aftermarket services resulting in long-term, sustainable value.

## West Star commits to 3-5 Year Facility Expansion Plans at Multiple Locations

*Facility locations include East Alton, IL (ALN), Grand Junction, CO (GJT) and Chattanooga, TN (CHA).*

West Star is pleased to announce plans for major facility expansion at their East Alton, IL (ALN), Grand Junction, CO (GJT) and Chattanooga, TN (CHA) locations in order to keep pace with customer demand.

Plans for the East Alton, IL (ALN) facility include a new 40,000 sq. ft. general use hangar and an additional 48,000 sq. ft. dedicated paint shop and hangar that when combined with existing paint facilities, will significantly increase paint capacity at the location. These additions will bring the ALN operational footprint to over 400,000 sq. ft. of office, hangar and shop space, with over 200,000 sq. ft. of ramp space.

Additionally, the Grand Junction, Colorado facility is planning a new 40,000 sq. ft. hangar with an additional 35,000

sq. ft. of shop and office. The shop space will include a larger interior shop, a complete composite shop and tool room. The new facility will be focused on the expansion of large aircraft capability and are slated to be complete in 2023. The expansion would increase the GJT location's operational footprint from 304,000 sq. ft. of office, shop and hangar space to approximately 379,000 sq. ft.

Jim Rankin West Star Aviation CEO said "West Star has been one of the fastest growing business MROs for past 20 years. This expansion plan is our most aggressive investment in our future to date. We are committed to implementing sustainable growth that benefits both our customers and our employees. I'm very proud of West Star's 1,500 employ-

ees who have continued to provide our unique, industry-leading experience to our customers even during these recent dynamic times. These expansion projects will ensure West Star Aviation will be well positioned to meet customer needs for the next five years and beyond."

West Star's Chattanooga facility has a new hangar planned that will consist of 40,000 sq. ft. of active hangar space and an additional 17,000 sq. ft. of shop and support space. The expansion plans at CHA also includes the lease of an existing 20,000 sq. ft. hangar on the field that will be leased from the airport. The planned expansion at the CHA location will increase the operational footprint from 179,828 sq. ft. to approximately 266,000 sq. ft. effectively.



# French Bee incorporates A350-1000 making it an all A350 operator

*The aircraft is the first of two A350-1000s to be operated by the carrier on route from Paris to Saint Denis de La Reunion Island in the Indian Ocean.*

French Bee recently took delivery of its first A350-1000 on lease from Air Lease Corporation to make the airline an all-A350 operator. French Bee is a low-cost, long-haul airline based in France. The aircraft is the first of two A350-1000s to be operated by the carrier on route from Paris to Saint Denis de La Reunion Island in the Indian Ocean.

The A350-1000s will complement the four A350-900 aircraft already in the French bee fleet, providing the airline with unrivalled operational flexibility and eco-efficient solutions for its network.

The aircraft features 480 seats in a two-class layout (40 premium class and 440 economy class), providing all the



comfort and amenities of Airbus' Air-space cabin, including state-of-the-art, in-flight passenger entertainment (IFE) and full WiFi connectivity throughout the cabin. The A350 cabin is also the quietest of any twin-aisle aircraft.

The A350-1000, Airbus' largest widebody in the twin-engine category, features the

latest aerodynamic design, a carbon fibre fuselage and wings, plus new fuel-efficient Rolls-Royce Trent XWB-97 engines, allowing the airline to fly long-haul destinations up to 16,000 km (8,700nm).

Together, these elements translate into unrivalled levels of operational efficiency with 25 per cent less fuel burn and CO<sub>2</sub> emissions and 50 per cent reduction in noise.

Simultaneously, the Dubreuil group also takes delivery of another A350-1000 on lease from Air Lease Corporation intended for Air Caraïbes, bringing the number of Airbus aircraft in the group's fleet to 15.

At the end of November 2021, the A350 Family had received 913 firm orders from 49 customers worldwide.



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■ Manufacturing of advanced aerostructures to start in late 2021 in Jingjiang, Jiangsu Province, China.

## GKN Aerospace, SAMC and AVIC Supply to manufacture advanced Aerostructures

*COMAC subsidiary SAMC, AVIC Supply and GKN Aerospace sign a strategic joint venture agreement to support Chinese commercial aerospace market.*

Shanghai Aircraft Manufacturing Company (SAMC), AVIC Supply and GKN Aerospace have signed a joint venture agreement for the manufacture of Composite and Metallic Aerostructures in Jingjiang, Jiangsu Province, China. This milestone achieved by GKN Aerospace is the long-stated ambition to grow within the commercial aerospace market within China.

The state-of-the-art, 80,000m<sup>2</sup> facility in Jingjiang will be GKN Aerospace's first aerostructures JV in China. It will offer COMAC, AVIC and Western customers the opportunity to access an important local supply of advanced aerostructures in the country. The JV builds on COMAC, AVIC and GKN Aerospace's proven track record in the global commercial aviation industry. Production is scheduled to begin in Q4 2021 and, by the mid-2020s,

the workforce is expected to grow to 1,000 people.

In addition to this, GKN Aerospace is in final preparations to open a separate 20,000 m<sup>2</sup> site in Jingjiang, focusing on the manufacture of transparencies for the commercial market.

Both endeavours will help meet China's national industrial strategy of "made in China 2025".

John Pritchard, President Civil Aerospace at GKN Aerospace said "The establishment of the first aerostructures JV and the upcoming opening of the transparencies facility in Jingjiang, Jiangsu Province, China are exciting milestones. We are proud to extend our footprint in China by working together with our committed partners COMAC, SAMC and AVIC Supply. The collaboration with the local authorities and support of the regional

government has been vital. I am sure the combination of our dedicated teams, technology leadership and extensive aerospace experience will lead to exciting growth opportunities. We are excited to be part of the growth of the commercial aerospace industry in China."

GKN Aerospace has a strong three-continent footprint, supporting customers in the Americas, Europe and in Asia. In recent years, growth in Asia has included opening a new wiring systems plant in Pune, India in Q4 2019, as well as unveiling a new aero-engine repair and research plant in Johor, Malaysia, in October 2018. With two new sites in China, GKN Aerospace will be delivering aerostructures, wiring systems and transparencies for the commercial aerospace market from seven sites across China, India, Malaysia and Turkey.



## VD Gulf to provide maintenance service to Pobeda Airlines' Boeing fleet



■ The opening of VD Gulf's new line maintenance stations in Egypt underlines their commitment to offer a greater level of services for clients in the Middle East and North Africa.

VD Gulf recently signed its first maintenance agreement with Russian operator Pobeda Airlines. As per the agreement VD Gulf will provide maintenance services at the company's

two Egyptian line stations in Hurghada (HRG) and Sharm El-Sheikh (SSH) for Boeing 737NG aircraft operated by Pobeda Airlines.

Ayrat Gilmudinov, VD Gulf's Director

Commercial said, "The opening of VD Gulf's new line maintenance stations in Egypt underlines our commitment to offer a greater level of services for clients in the Middle East and North Africa region, and we thank Pobeda Airlines for choosing VD Gulf to provide maintenance services in Egypt. We look forward to a long-lasting and prosperous relationship with Pobeda Airlines."

VD Gulf is an independent MRO services provider approved by multiple regulatory authorities, offering unlimited maintenance services on Boeing 747-400/-8, 777, 737 CL/NG, and Airbus A320ceo family/A320neo family aircraft.

Pobeda Airlines LLC, part of the Aeroflot Group, commenced operations in 2014. Pobeda operates a fleet of more than 40 Boeing 737-800 aircraft.

## Surging demand for air cargo boost 767 Freighter deliveries

UPS recently signed a firm order of 19 767 Freighters from Boeing to ensure a modern and efficient fleet. This sale has added to the record-breaking year for Boeing freighter family. This deal also enhances the operational efficiency and payload capability of the 767 Freighter to serve its customers at a time of robust air cargo demand.

UPS US Operations President Nando Cesarone, "The Boeing 767 is the most versatile aircraft we operate. Our plan to purchase 19 aircraft and take delivery between 2023 and 2025 aligns with the strategy and capital expenditure forecast shared during our June 2021 Investor and Analyst Day. It also supports our sustainability efforts by making our fleet more efficient and improving reliability."

The year 2021 has shown a record demand in air cargo market due to an expansion of e-commerce and express cargo markets. Apart from this deal,



Boeing also has 80 firm orders for new widebody freighters and more than 80 orders for Boeing Converted Freighters

Ihsane Mounir, Boeing senior vice president of Commercial Sales and Marketing said, "This latest order for 19 jets bookends an incredible year for the Boeing Freighter family. Since the program was launched, UPS has recognized the value of the 767 Freighter and utilized the airplane's outstanding cargo capabilities throughout its network. These new jets will enable UPS to meet expected near-term and long-term cargo demand

with the proven economics, reliability and flexibility that are synonymous with the 767 Freighter."

Based on the 767-300ER (Extended Range) passenger jet, the 767 Freighter carries up to 52.4 tons of revenue cargo with intercontinental range, serving as a flexible platform for long-haul, regional and feeder markets. UPS was the launch customer for the 767 Freighter in 1995, and since then has ordered a total of 91 of the aircraft. The carrier currently operates 236 Boeing freighters including the 747, 757, 767 and MD-11.

Boeing's 2021 Commercial Market Outlook forecasts an annual increase of 4 per cent in air cargo demand (Freight Tonne Kilo meters) over the next 20 years. With more than 270 orders since program launch, the 767 Freighter continues to play a key role in supporting this demand, together with a global freighter fleet predicted to grow by 70 per cent by 2040.

# Spanish Ministry of Defence and Interior activates Helicopter Master Plan, orders 36 H135

*The new helicopters will enable the Policía and Guardia Civil to replace the BO105 helicopters in a wide range of missions including law enforcement, surveillance, and rescue activities.*



■ The Ministry of Interior currently has a fleet of 31 helicopters from the H135 family in operation with the National Police, the Guardia Civil, and Tráfico.

The Spanish Ministries of Defence and Interior have ordered 36 Airbus H135 helicopters as a part of the stimulus plan activated by the government to support the industry. The Ministry of Defence will receive 18 helicopters to be operated by the air force and the navy while the Ministry of Interior will also take delivery of 18 helicopters to be operated by the National Police and the Guardia Civil. The deliveries will start next year.

The Spanish Army already operates a fleet of 16 H135 helicopters. With this acquisition, these will be the Spanish Air Force's first H135s and the Spanish Navy's first Airbus Helicopters product. As was the case for the H135s acquired some time ago by the army, the new aircraft for the air force and navy will replace older helicopter models currently used for advanced pilot training. The standardisation of training fleets

across the three-armed forces will create synergies and lead to the implementation of new and more efficient training and support activities.

Admiral Santiago González at DGAM said, "Together with the NH90, the H135 will be present in all branches of the Spanish armed forces, as an example of harmonisation and the search for synergies in training and maintenance, as stipulated by our Helicopter Master Plan. This collaboration between the Ministries of the Interior and Defence is an important milestone in the rationalisation of programmes by the Spanish Government".

The Ministry of Interior currently has a fleet of 31 helicopters from the H135 family in operation with the National Police, the Guardia Civil, and Tráfico. The new helicopters will enable the Policía and Guardia Civil to replace the BO105

helicopters in a wide range of missions including law enforcement, surveillance, and rescue activities.

Bruno Even, CEO of Airbus Helicopters said, "We are pleased to sign the largest H135 contract in the history of this programme in Spain, a key partner and one of the largest H135 operators worldwide. I take this opportunity to welcome the Spanish Navy and the Spanish Air Force as new users of this model. The H135's performance, versatility, and flight readiness have been particularly appreciated by Spanish operators."

Airbus' light, twin-engine H135 is equipped with the most advanced technologies available, including Airbus Helicopters' own Helionix avionics suite. There are about 1,350 H135 helicopters operated by 300 operators in 64 countries. The fleet has accumulated 6 million flight hours.





The H160 is designed to be a modular helicopter, enabling its military version, with a single platform, to perform missions ranging from commando infiltration to air intercept, fire support, and anti-ship warfare.

## H160 Helicopters to bring new capabilities for French Armed Forces

*The French Ministry for the Armed Forces plans to order a total of 169 H160M helicopters.*

The French Army is all set to receive the H160 Helicopters or Guepard as a part of Light Joint Helicopter programme. As a part of the contract Airbus Heli will deliver first batch of 30 aircraft, out of which 21 will be for Army, 8 for navy and one for the Air force. The French Ministry for the Armed Forces plans to order a total of 169 H160M helicopters. Deliveries will start in 2027 beginning with the French Army.

Bruno Even, CEO of Airbus Helicopters said, "The Guépard is the result of ten years of close cooperation with the DGA and the French armed forces. The H160M will bring new capabilities to the armed forces as it is adapted to modern warfare thanks to its increased connectivity, maneuverability, low acoustic footprint, and a fully integrated support system. Having the French armed forces, a world reference, as our launch customer for the H160M is extremely valuable."

The first of a new generation of helicopters, the H160M is derived from the EASA-certified H160. It benefits from a low cost of operations and optimised

flight safety. The H160 was designed to be a modular helicopter, enabling its military version, with a single platform, to perform missions ranging from commando infiltration to air intercept, fire support, and anti-ship warfare in order to meet the needs of the army, the navy and the air force. To ensure a high level of availability while reducing operating costs, the H160M's support and services needs were taken into account from early in its design phase. Innovative and simplified, the H160M's support is based on the exploitation of data through analytics.

Airbus Helicopters will guarantee a high level of availability through an innovative maintenance contract.

Trials conducted in the Moroccan desert in July 2021 demonstrated the efficiency of the H160's inlet barrier filtration system in protecting the Safran Arrano engines against sand ingestion. The tests also demonstrated the efficiency of the automatic flight control system during the takeoff and landing operations with limited visibility due to

sand clouds. The H160M will be ready to operate in the roughest conditions.

The military version of the H160 will be more discreet than previous helicopters with a reduced acoustic signature made possible by the Blue Edge blades. The H160's stability, maneuverability, and an automatic flight control system will be key assets for the military version. The H160M will be equipped with Airbus Helicopters' HForce weapon system, a modular and incremental solution enabling the use of a large choice of weapons. Equipment will also include a hoist and a fast roping arm.

The H160M Guépard will be equipped with the Safran Euroflir 410 electro-optical system, the Thales FlytX cockpit avionics suite, and AirMaster C radar. The pilots will be able to use the Thales TopOwl Helmet-mounted Sight & Display. The Guépard will also carry a self-protection suite, a satellite communication system and tactical data link system. The weapon package will include the MBDA ANL anti-ship missile, pod mounted and door mounted guns.

# First Airbus A321neoLR for the German Air Force arrives at Lufthansa Technik

*With the Airbus A321neoLR, the German Air Force will receive a future-proof, modern passenger aircraft.*



■ Commencement of cabin modifications for troop transport and the MedEvac role.

The first of two Airbus A321neoLR (Long Range) for the German Air Force has recently arrived at Lufthansa Technik in Hamburg. The aircraft bears the military registration 15+10.

Its sister aircraft 15+11 will follow in the coming weeks.

This marks the start of the cabin conversion of the two aircraft, carried out by the Original Equipment & Special Air-

craft Services business unit, for various mission types such as troop transports, parliamentary flight operations and the MedEvac (medical evacuation) role. The delivery of the converted aircraft is scheduled for the second half of 2022.

It can be deployed on short, medium and long haul flights. With the installations made by Lufthansa Technik, the aircraft can be used in four different interior configurations. Their passenger transport capacity ranges up to 136

Furthermore, either the transport of up to six intensive care patients or the transport of up to twelve slightly or moderately ill/injured patients as well as various mixed configurations for patient transport are possible. Lufthansa Technik will therefore supply twelve Patient Transport Units (PTUs) as well as two reserve units required for the MedEvac role to the German Armed Forces.

# TNO and Embraer sign MoU for advanced research and innovation

*This MoU aims to strengthen the cooperation between Embraer and TNO in The Netherlands and Brazil.*

Embraer and Netherland Organization for Applied Scientific Research – The TNO have signed an MoU for future developments of defense and dual-use products and services in air, sea, land, and space domains. The MoU include joint research, technology development, and innovation process.

Marja Eijkman, Managing Director of TNO Defense, Safety and Security said, “We are very pleased to strengthen our relationship with Embraer Defense & Security through this MoU. We see multiple opportunities to extend the cooperation and to jointly develop advanced technologies and innovations for a safe and secure society. We are looking forward to use our complemen-



tary knowledge and technologies in the defense and security domain for mutual benefit.”

Jackson Schneider, President and CEO of Embraer Defense & Security said, “We truly believe that this MoU can generate a lot of value for both parties. We have seen a great synergy between TNO and Embraer related to our com-

pany’s complementarity defense and security expertise. Also, we believe that together we can advance in research in fields such as autonomy and artificial intelligence, which are very important for us.”

The MoU intends to extend and increase long-term business relations between the parties during the research and development of key technologies for defense applications, which can be part of future capabilities within Embraer’s existing platforms such as the C-390 Millennium, or new aircraft, vehicles, and systems. This MoU also aims to strengthen the cooperation between Embraer and TNO in The Netherlands and Brazil.



## Boeing inching towards successful integration of MQ-25 into carrier environment

*The demonstration was intended to ensure the design of the MQ-25 to evaluate the functionality, capability and handling qualities of the deck handling system both in day and night conditions.*



In a milestone achievement Boeing successfully maneuvered the Boeing-owned T1 test asset on US Navy aircraft for the first time. This is said to be an early step forward in ensuring the MQ-25 unmanned aerial refueler will seamlessly integrate into carrier operations.

Capt. Chad Reed, Unmanned Carrier Aviation program manager said, "This is another significant step forward in demonstrating MQ-25's integration into the Carrier Air Wing on the flight deck of our Fleet's aircraft carriers. The success of this event is a testament to the hard work of our engineers, testers, operators and the close collaboration and teaming from Naval Air Force Atlantic and the crew aboard CVN 77."

The demonstration was intended to ensure the design of the MQ-25 will successfully integrate into the carrier environment and to evaluate the functionality, capability and handling qualities of the deck handling system both in day and night conditions. Maneuvers included taxiing on the deck, connecting to the catapult, clearing the landing area and parking on the deck.

Jim Young, MQ-25 chief engineer said, "The Navy has a rigorous, well-established process for moving aircraft on the carrier. Our goal was to ensure the MQ-25 fits into the process without changing it. From the design of the aircraft to the design of the system moving it, our team has worked hard to make the MQ-25 carrier suitable in every way."

Dave Bujold, Boeing MQ-25 program director said, "The Navy gave us two key performance parameters for the program – aerial refueling and integration onto the carrier deck. We've shown that the MQ-25 can meet both requirements, and we've done it years earlier than traditional acquisition programs."

The deck handling demonstration followed a two-year flight test campaign for the Boeing-owned T1 test asset, during which the Boeing and Navy team refueled three different carrier-based aircraft – an F/A-18 Super Hornet, an E-2D Hawkeye and an F-35C Lightning II.



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## Saab strikes SEK 1.4 billion contract from Swedish Defence for Gripen E's new equipment

*This contract is supplementary to the original Gripen E contract that was signed in 2013.*

The Swedish Defense Material Administration has ordered new equipment for their Gripen E from Saab. This contract is supplementary to the original Gripen E contract that was signed in 2013. The new contract order value amounts to approximately SEK 1.4 billion.

The new equipment is acquired for a part of the total Swedish order of 60 Gripen E aircraft instead of reusing the equipment from the Gripen C/D. This approach secures the availability of the Swedish Gripen C/D fleet in service, while Gripen E is being delivered and introduced to the Swedish Armed Forces.

The original contract that was signed in February 2013 was regarding the development and modification of Gripen E. Besides, the contract was based on the terms that certain equipment from the existing Gripen C/D fleet within the Swedish Armed Forces should be reused.



■ Gripen E multi-role fighter jet.

## Bell Textron delivered four Huey II to Bosnia Herzegovina armed forces for special mission



*The Huey IIs will enhance the Bosnia and Herzegovina's ability to perform search and rescue, firefighting, and many other missions.*

■ Prior to the delivery, members of the AFBiH Air Force and Air Defense Brigade completed adaptation training at the Bell Training Academy in Fort Worth, Texas.

Bell Textron delivered four Bell Huey aircraft to the Armed Forces of Bosnia and Herzegovina earlier this month as a part of Foreign Military Sale signed in December 2019.

The Huey II worldwide fleet of more than 300 aircraft have a combined 1.2 million flight hours. Prior to the delivery, members of the AFBiH Air Force and Air

Defense Brigade completed adaptation training at the Bell Training Academy in Fort Worth, Texas.

Clay Bridges, regional sales manager, Bell said, "We are very pleased and honored to be able to deliver these very versatile helicopters to the Armed Forces of Bosnia Herzegovina. The Huey IIs will enhance the Bosnia and Herzegovina's

ability to perform search and rescue, firefighting, and many other missions. Here and throughout the region, we are seeing the need for helicopters grow."

Additionally, Bell's global customer support network, with more than 100 authorized customer service facilities in 34 countries, provides customers with the largest support network in the industry.



# Airbus Heli provides two additional five-bladed H145s to French Sécurité Civile

*The new aircraft will reinforce the operational capacity of the men and women of the French Sécurité Civile throughout France.*



■ This new version of Airbus' best-selling H145 light twin-engine helicopter brings a new, innovative five-bladed rotor to the multi-mission helicopter, increasing the useful load by 150 kg.

As a part of advanced security drive, the French Armament General Directorate (DGA) has ordered an additional two five-bladed H145s destined to equip the Sécurité Civile. This contract comes as a follow-up to the contract signed in 2020 for an initial batch of two H145s which were delivered in December 2021. Sécurité Civile is an agency of the French Ministry of Interior that performs rescue and air medical transport services throughout France.

Prefect Alain Thirion, Director General of the Sécurité Civile said, "The Sécurité Civile has launched an ambitious, multi-year programme to modernise its means of intervention in order to adapt to the evolution and demands of our public service missions. We operate day and night from our 23 bases in France and overseas territories. On average, one person is rescued every 33 minutes

by one of our "Dragon" helicopters and these two new aircraft will reinforce the operational capacity of the men and women of the French Sécurité Civile throughout France. We are proud to be providing the Sécurité Civile with two more five-bladed H145s."

Bruno Even, Airbus Helicopters CEO said, "This follow-up to the contract signed in the frame of the French stimulus plan for the aerospace industry offers Airbus Helicopters visibility while we navigate this global health and economic crisis. The new five-bladed H145 will be an asset to the critical missions that the Sécurité Civile performs as we have seen during the various waves of the pandemic and the floodings in France."

Certified by the European Union Aviation Safety Agency in June 2020, this new version of Airbus' best-selling H145

light twin-engine helicopter brings a new, innovative five-bladed rotor to the multi-mission helicopter, increasing the useful load by 150 kg while delivering new levels of comfort, simplicity, and connectivity. 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. Today, Airbus has more than 1,515 H145 family helicopters in service around the world, logging a total of more than six million flight hours. Established in 1957, the helicopter division of the Sécurité Civile operates a fleet of 33 EC145 helicopters on call 24/7 throughout France for rescue missions.

# GE successfully concluded phase I testing on XA100 adaptive engine, clears coast for phase II

*The testing was a part of US Air Force's Adaptive Engine Transition Program (AETP).*



■ The second phase of testing will begin at US Air Force's advanced testing facility at Arnold Engineering Development Complex (AEDC) in the first quarter of 2022.

GE successfully concluded the phase 1 testing on its second XA100 adaptive cycle engine paving the way for phase 2 testing. The testing took place at GE's Evendale, Ohio, altitude test facility and enabled GE to continue gathering high-quality performance data validating the engine's transformational propulsion capability. The testing was a part of US Air Force's Adaptive Engine Transition Program (AETP).

The second phase of testing will begin at US Air Force's advanced testing facility at Arnold Engineering Development Complex (AEDC) in the first quarter of 2022.

David Tweedie, GE Edison Works' general manager for Advanced Combat Engines said, "Phase 1 testing allowed us to further characterize the operation of the engine and puts us in a great position to begin Phase 2 testing at AEDC. We continue to burn down risk with full-scale engine testing, which is why the XA100 is the lowest risk, most capable, and fastest approach to keep the F-35 a preeminent fighter platform for the long term."

The XA100-GE-100 engine has an

adaptive engine cycle that provides both a high-thrust mode for maximum power and a high-efficiency mode for optimum fuel savings and loiter time, a third-stream architecture that provides a step-change in thermal management capability, enabling future mission systems for increased combat effectiveness and an extensive use of advanced component technologies, including ceramic matrix composites (CMC), polymer matrix composites (PMC), and additive manufacturing. These key innovations are designed to deliver a generational change combat propulsion performance.

Tweedie further added, "Between the step-change fuel efficiency improvement and enhanced durability of our advanced materials, this engine provides the maximum opportunity to increase readiness and reduce operational and lifecycle costs. No upgrade of a legacy propulsion system can simultaneously provide the revolutionary improvements in fuel efficiency, thrust, power and thermal management, and durability as the XA100 engine."

Besides this innovation increase the

thrust by 10 percent, improve fuel efficiency by 25 per cent and provide significantly more aircraft heat dissipation capacity, all within the same physical envelope as current propulsion systems. The XA100's improved fuel efficiency provides significant reduction in carbon emissions. The engine will also operate on any US Air Force-approved biofuels.

GE's XA100 became the world's first ever flight-weight, three-stream adaptive cycle engine in December 2020 before initiating tests on its second engine in August 2021. GE's engine is uniquely designed to fit both the F-35A and F-35C without any structural modifications to either airframe, enabling better aircraft range, acceleration, and cooling power to accommodate next-generation mission systems.

The XA100 is a product of GE Edison Works, a business unit dedicated to the research, development, and production of advanced military solutions. This business unit has full responsibility for strategy, innovation, and execution of advanced programs.



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# Dr. Harpreet A De Singh – A shining beacon of hope for millions of aviation aspirers

*Breaking the glass ceiling, the first woman CEO of an Indian airline, Dr Harpreet A De Singh, has received the IATA Inspirational Role Model Award.*

Adding another feather to her cap, Dr. Harpreet A De Singh, the first women pilot selected by Air India has created history yet again and this time across the border. She was recently awarded the IATA Inspirational Role Model Award for her outstanding career in aviation which will serve as a shining torch of inspiration for millions of Aviation aspirants across the globe. It is indeed a rare moment for India as well as the world.

Responding to this award, the Indian Minister of Civil Aviation, Jyotiraditya Scindia tweeted, "Overjoyed & proud to see Indian women in aviation bring laurels & make a mark on the world! Breaking the glass ceiling, the first woman CEO of an Indian airline, Dr Harpreet A De Singh, has received the IATA Inspirational Role Model Award – a first for India. Congratulations!"

Dr. Harpreet A De Singh has a string of accolades and awards under her name. Let us re-count a few of the milestones



of her glorious career path –

1. Indian Airlines appointed Harpreet A De Singh as the CEO of Alliance Air making her the first women CEO to head an airline and created history.
2. Prior to this appointment she was working as executive director for flight safety in Air India
3. She was the first woman pilot to be selected by Air India in 1998
4. She is the President of Indian

Women Pilots Association.

5. She is the first woman chief of flight safety in India and also the first woman head of quality management systems in an airline

6. In January 2020, Singh was rewarded with the prestigious Bharat Ratna Dr APJ Abdul Kalam Excellence Award for "Outstanding Personal achievement and Distinguished services to the nation."

7. In the same year she was awarded the Outstanding Women in Aviation Award at the MRO South Asia Summit conducted by the STAT Media Group

8. She is also Chairman of 'Aeronautical Society of India', Mumbai Branch and Council Member at Headquarters of AeSI.

In her glittering career path she overcame all challenges breaking the glass ceiling along the way. She has left behind a string of firsts, which will be hard to equal. In her 30-year career at Air India, Harpreet made sure she made the most of each opportunity that came her way.

## Top management appointments at Air Transport Services Group

*Todd France, president of ATSG's aircraft maintenance subsidiary, Airborne Maintenance & Engineering Services, will become president of ATSG's aircraft leasing subsidiary.*

Air Transport Services Group recently made two major appointments at the top management level. Todd France, president of ATSG's aircraft maintenance subsidiary, Airborne Maintenance & Engineering Services, will become president of ATSG's aircraft leasing subsidiary, Cargo Aircraft Management, effective from April 2022. On the other hand, Mark Snook, general manager of Airborne's Wilmington facilities and line stations, will replace France as Airborne's president.

France has been president of Airborne since February 2020, having previously served as the company's General Manager, Vice President of Business Develop-

ment, Director of Business Development, and Director of Business Operations.

Before joining Airborne, France held a series of management positions at ABX Air. He received a bachelor's degree in business administration from California State University, Fresno.

"Todd knows our business inside and out, and he has a proven track record of effective leadership," said ATSG President and CEO Rich Corrado. "I am confident that he has what it takes to ensure CAM's continued success."

Snook joined Airborne in June 2020. His 37-year career in aviation has included management roles with TIMCO/HAECO

Americas and Evergreen Air Center. He is a veteran of the US Marine Corps.

"Mark's wealth of experience in the aircraft maintenance, repair, and overhaul industry make him the right choice to lead Airborne," Corrado said.

Brady Templeton's tenure as the president of Cargo Aircraft Management caps a 30-year career with ATSG companies. Before being named to his current role, he led Airborne Maintenance & Engineering Services since its inception in 2009 and had spent 17 years in management roles at airline subsidiary ABX Air. His prior experience includes work for Lockheed, Batch Air, and Arrow Air. He is a veteran of the US Army.



# Panasonic Avionics promotes Chris VanderBerg as Chief Engineer, Software

*Chris has over 25 years of experience in software programming, hardware design, and system architecture.*



■ Chris has a wealth of experience in software design and development and is highly knowledgeable in delivering a final production product from its concept phase.

Chris VanderBerg is promoted as the Chief Engineer, Software at Panasonic Avionics. In this role, Chris will be responsible for delivering the company's highly complex, end-to-end software that redefines how airlines interact with their passengers onboard the aircraft. He will report to CTO, Joe Bentley, and will lead a multi-disciplined and talented team of highly skilled individuals across Panasonic Avionics' global footprint. Chris will also act as the company's primary technical contact with its customers.

Bentley said, "Our customers are always looking for new ways to deliver an enhanced passenger experience, generate revenue, increase passenger engagement and improve operational efficiencies. Robust and reliable software

will be the foundation for the kinds of products and solutions that help them achieve their organizational goals. Chris has a wealth of experience in software design and development and is highly knowledgeable in delivering a final production product from its concept phase. I am delighted to welcome him back to Panasonic Avionics where he will again be a major asset to our team."

Chris Vandenberg said, "As an award-winning provider of in-flight entertainment and connectivity, Panasonic Avionics is a company I am very proud to be a part of, and I look forward to working with my fellow colleagues to enhance the standards of software engineering excellence that we deliver to our airline customers."

Chris has over 25 years of experience in software programming, hardware design, and system architecture. He re-joins Panasonic Avionics from Safran Passenger Innovations, where he was Technical Fellow – Head of Software Architecture from 2019, managing a team of software architectures and developers. Chris brings 14 years of experience at Panasonic Avionics, having joined as Principal Software Engineer in 2004 and progressed to become CTO, Global Communications in 2016. During this time, he managed engineering teams in the company's satellite communications division and designed the company's Global IPTV system, including its first generation of IP back-haul and up-link distributions.

# 2022

## International CALENDAR 2022

Date	Event	Venue
27-28 Jan	Aero-Engines Americas	Miami, FL
7-9 Feb	ACTA Annual conference & Expo	Washington, DC
09-10 Feb	MRO Latin America	Cancun, Mexico
15-18 Feb	Singapore Airshow	Singapore
22-23 Feb	AIME 2022	Dubai, UAE
22-23 Feb	MRO Middle East	Dubai, UAE
03-04 Mar	PBExpo	Miami, FL
06-09 Mar	World Defense show	Riyadh, Saudi Arabia
07-10 Mar	HAI Heli Expo	Dallas, TX
10-11 March	MRO Russia	Moscow, Russia
28-31 Mar	AEA International Convention & Trade Show	New Orleans, USA
26-28 Apr	MRO America	Dallas, TX, USA
03-05 May	NBAA Maintenance Conference	San Antonio, 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
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
25-27 Oct	Abu Dhabi Air Expo	Abu Dhabi
6-9 Nov	ATCA	Washington, D.C.

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