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Inside:

AIRFRAMERS

Airbus Cuts Commercial Aircraft Production Targets, Records Space Charges

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SEATTLE—Airbus no longer expects to reach its target of producing 75 A320neo family aircraft per month in 2026 and has cut back its delivery guidance for 2024.

The decisions come as the manufacturer is suffering from renewed constraints in its supply chain that make the targets unrealistic. Airbus now expects to reach rate 75 in 2027, one year later than planned of late. The company had already pushed out the target before because of supply chain issues. In 2024, Airbus now aims to deliver 770 commercial aircraft, 50 less than in 2023 and about 30 less than it had anticipated so far.

The cutbacks have severe financial implications for the company. Airbus now expects an adjusted operating profit of €5.5 billion ($5.8 billion), down from €6.5-7 billion.

For airlines and lessors, the latest admissions mean more delays for hundreds of aircraft over the next several years. Customers have already been complaining about receiving A320neo family aircraft routinely several months late. The continued and now aggravated scarcity of supply will likely support the already high lease rates further and could slow down retirements even more when many airlines are already operating aging aircraft longer than expected.

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The Daily Memo

EASA, FAA Must Work On Cybersecurity, Industry Says

THIERRY DUBOIS, thierry.dubois@aviationweek.com

As cybersecurity threats grow and airframers and avionics manufacturers hone their plans for a more connected cockpit, the imperative for certification standards is becoming urgent.

This underscores the need to have a perfect understanding of the risks and the importance of thoroughly identifying the available techniques that may form a solid response.

"No aircraft system with a role in flight safety is connected to the open world of the internet," Thales EVP for avionics Yannick Assouad said recently at the Paris Air Forum. "The cockpit is increasingly connected but without an interaction with the flight management system (FMS), which is secure."

"We benefit from very relevant information thanks to our internet link, such as satellite weather [observation and forecast]," Vincent Gilles, a member of the executive committee of the SNPL France ALPA pilot union, said. "Our iPads are segregated [from aircraft systems]."

The GPS receiver has been the weak point. When they fly near war zones, civil aircraft may be the collateral victim of GPS jamming that targets military operations. Jamming may also take place near a jail or the site of a major event. As a result, the GPS receiver displays a fault alert message.

"We anticipate the failure," Gilles said. "For trajectory calculation, we use other sources of data: we rely on navaids on the ground." In situations such as trans-oceanic flights, or when facing jamming from a cheap, illegal device, the crew may also use inertial reference systems (IRS).

Spoofing, when a malevolent emitter emulates a GPS signal and the aircraft receives wrong information, may be more difficult to counter. Again, aircraft may be a collateral victim of military operations.

Due to spoofing, an issue can occur with the Enhanced Ground Proximity Warning System (EGPWS). The system relies on map positioning and a radio-altimeter. The spoofing's inaccurate

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The delay also means that Airbus cannot grow its share in the single aisle market vis-à-vis Boeing as fast as planned in the coming three years.

Airbus said the decision reflects "specific supply chain challenges in a degraded operating environment." It is "facing persistent specific supply chain issues mainly in engines, aerostructures and cabin equipment."

The company also conducted technical reviews of all space programs and identified "further commercial and technical challenges," Airbus said without revealing further details. It is recording €0.9 billion in charges as a consequence in the first half of the year. Airbus will disclose its second quarter results on July 30.

Airbus did not reveal changes to the ramp-up planned for the A220. The program plans to go up to 14 aircraft by the middle of the decade.

The supply chain remains "very constrained," Airbus sales chief Benoit de Saint-Exupery, told Aviation Week in a recent interview. He added that there are "many areas of friction," therefore "we are not out of the woods yet, for sure."

"Would I like to have more aircraft being produced in due course? Yes, of course, because right now the market would actually take everything," de Saint-Exupery said. In that conversation, he was even looking beyond rate 75: "I'm conscious that we will have to get there first in a reliable and stable way, sustain that, and then we will see whether we can do something else," de Saint-Exupery said. "The market would take more than that today for sure."

Deliveries of Pratt & Whitney PW1100G engines have been constrained, as the engine OEM has to service the in-service fleet with a much larger number of replacement engines to contain fleet groundings caused by various maturity issues. CFM International has also had challenges in ramping up production.

Airbus did not say where exactly the shortages in aerostructures lie. Unlike cabin equipment and engines, a lot of the aerostructures work is performed in-house or at suppliers owned by Airbus. The OEM is also understood to be close to taking over parts of Spirit AeroSystems, a key supplier on the A220 and A350 programs.

Issues in the cabin supply chain have worsened recently, industry sources say. Delays in deliveries and certification of seats have become a particularly serious problem, sometimes pushing back aircraft handovers by several weeks or months. Cabin monuments such as galleys and lavatories or their parts have also not arrived at the pace expected.

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positioning creates false EGPWS alerts in airport approaches. "Procedures do work; when pilots are in doubt, [air traffic control] can dispel the doubt," Marion Buchet, head of Computer Emergency Response Team (CERT) Aviation France, said. CERT Aviation France specializes in cybersecurity in the air transport sector.

"We have begun to improve the resilience of our systems," Jean-Claude Nanche, Airbus' head of aircraft security, said. "It is difficult to get rid of jamming, but you can find solutions. As for spoofing, there are working groups, especially in radio-telecommunications, where we are considering future flight computer standards that would include resilience."

"We are working on future IRS," Assouad added. "They will be more precise and will need less frequent adjustment."

In cockpit connectivity, civil aviation authorities, such as the European Union Aviation Safety Agency (EASA), have yet to create certification requirements. "No EASA standard allows certifying a connected system," Assouad said. "If we wanted to do it, we could not. The International Civil Aviation Organization and civil aviation authorities are working on certification standards for cybersecure, open FMS. Manufacturers participate in these working groups."

Aviation's decarbonized future will require connectivity. "A future Airbus will be more connected," Assouad said. "If we want to optimize air operations, whether it be between the aircraft and air traffic management or between the operator and its aircraft, we cannot imagine that there is no digital link between these actors ... We are preparing the advent of this more advanced connectivity, which will be cybersecure, with techniques proven on the ground."

Significant work is needed at EASA and FAA levels, Assouad said. "The two agencies have yet to sufficiently understand and analyze cybersecurity techniques, as we see more techniques that allow us to have strong security for data flows in both directions," Assouad said. "Today, we could not approve them. We need to work with the authorities so that they understand these cybersecurity methods with encryption, flow analysis, and expected data recognition; not only the data, but also its value. We can also harden components."

FAA and EASA must take ownership of the subject, Assouad said. "When you have 10 engineers at EASA, you see 6,000 cybersecurity specialist engineers at Thales," she said. "The rules have always evolved under the impetus of the industry, by working with the authorities so that they adopt the technologies and incorporate them into regulations."

MRO

Faulty MRO Process Prompts Landing Gear Checks

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The FAA will mandate maintenance records checks on several Boeing aircraft types to flag and remove more than 300 improperly repaired main landing gear (MLG) assemblies after the issue was linked to a 767 gear collapse in 2020.

In a notice of proposed rulemaking (NPRM) issued June 20, the FAA said it will order all 767 operators to either check records or inspect MLG outer cylinders for signs of heat damage. Damaged parts must be replaced at a cost of about $500,000, the FAA said. The agency will give operators 30 months from the issuance of a final rule to do the work.

The parts were repaired using a grinder "operating outside of its input parameters," the FAA said. The work was done at an unnamed maintenance, repair, and overhaul (MRO) provider and implicated in the investigation of an August 2020 Omni Air International left MLG collapse.

The incident took place when the 767-300, on a flight from Kabul, Afghanistan, to Washington, D.C., with a planned refueling stop in Bucharest, Romania, touched down on Bucharest Aurel Vlaicu airport's runway 07. The left MLG collapsed, and the aircraft skidded to a stop. All 15 crew members and 49 passengers evacuated safely.

The Romania Civil Aviation Safety Investigation and Analysis Authority-led probe determined that the MLG cylinder fractured from damage caused during a 2015 overhaul. The cause: "overheating in the base metal due to the result of an inner diameter grinding machine that was found to be operating outside of input parameters," the authority's final report, issued in March, said.

The MRO shop determined the same issue could affect a total of 331 MLG assemblies overhauled using a similar process. The suspect gear assemblies are for 737s, 747s, 757s, and 767s. Investigators said 40 of the gear assemblies, including the Omni one, have both possible damage and no record of any follow-up non-destructive inspections that could flag problems.

Romanian investigators recommended Boeing and the FAA analyze the probe's findings and related ramifications for the in-service fleet and follow up with any needed actions.

Earlier in 2024, Boeing began issuing what is expected to be a series of fleet-specific instructions on the issue.

"The MRO identified a suspect population of MLG outer cylinders on 737, 747, 757, and 767 airplanes that may have also been affected and provided this information to the FAA and Boeing," the company said in a February 2024 767 alert requirements bulletin (ARB) outlining the issue. The FAA's NPRM is based on the 767 ARB and a related service bulletin.

Boeing has also released a bulletin on the 737 fleet, investigators said in the final report on the Omni accident.

Boeing did not immediately respond to Aviation Week queries.

LESSORS

CDB Aviation Working Toward 60% New-Generation Fleet By 2026

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Lessor CDB Aviation aims to increase the number of new-generation aircraft to more than half of its portfolio in the coming year.

CDB Aviation, the wholly owned Irish subsidiary of China Development Bank Financial Leasing (CDB Leasing), says it is making rapid progress in changing over its fleet to less-polluting aircraft.

In its second annual sustainability report, reviewing its environmental, social and governance-related activities for 2023, CDB says it is rapidly approaching the halfway mark in its ambitions to build a more sustainable fleet.

CDB Aviation's fleet today consists of 273 aircraft, with an average age of 4.4 years, 125 of which are new-generation models. The lessor says that the relative efficiency of the fleet on an available seat kilometer basis has already improved by 12% since 2018.

As part of its Sustainable Fleet Initiative, CDB Aviation aims to achieve 60% new-generation aircraft by the end of 2025.

"This significant transition, from 12% of new-generation aircraft in 2018 to 46% today and 60% by 2025, is happening through active portfolio management, exiting older-generation aircraft and adding new-generation types from the lessor's order book and through acquisitions," the report says.

CDB says it has also introduced sustainable investing metrics into its underwriting decision-making process, becoming the first lessor to disclose asset emissions intensity data.

"Our sustainability strategy is underpinned by our belief that to achieve our corporate mission, we must respond to the sustainability risks and opportunities that will fundamentally shape our industry's future and indeed the future of the world," CDB Aviation CEO Jie Chen says. "We recognize that the long-term commercial success of our business relies on it."

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SUPPLIERS

Safran's Electric Motor Certification Effort In Full Swing

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PARIS—Certification testing for the Safran ENGINeUS 100, a 100-180 kW electric motor, is underway and the engine manufacturer is expecting the European Union Aviation Safety Agency's (EASA) approval in the next few months, Florent Nierlich, Safran Electrical & Power's VP, technology and innovation, said.

The advancement is relevant to both light aviation and the commercial air transport industry. The ENGINeUS family's power level is suitable for all-electric or hybrid aircraft in the 4- to 6-seat category, and future versions will fit small business and regional aircraft that are currently in the early stages of development. On the larger commercial aircraft side, future narrowbodies may use hybrid-electric engines, the electric part of which may find their roots in low-power motors.

"We are betting on small platforms to develop and mature the technologies," Nierlich said, speaking June 13 at the Paris Air Forum. "We will use them on our RISE demonstrator to hybridize the turbomachine in future commercial engines. Therefore, this is a strategic project for Safran in our ambition to decarbonize."

Certification trials began early in 2024. "We expect to complete them in the coming months. We have 10 motors running for various tests," Nierlich said. "These are environmental tests; we put ice on an electric motor and see whether we can melt the ice. We spray water onto a motor running under 800V, and we check that not a single drop of water seeps into the motor."

Moreover, the evaluations confirm reliability, he said. "We are going to demonstrate our motors' design service life of 10,000 hr., to start with," he said. "In terms of endurance, we will show they can run at full speed and maximum temperature."

The greatest technical challenge has been found in thermal management. On the ENGINeUS 100, Safran's engineers use air cooling. "The propeller blows air [onto the motor], which is very effective and reliable," Nierlich said. "However, even though efficiency stands in the 94-95% range, we have 5 kW of wasted heat to dissipate. That is the equivalent of a small apartment's heating power. To dissipate it in a very small volume, we resort to advanced materials to optimize thermal management. We optimize control laws to minimize losses."

Another challenge has been the high voltage. "At altitude, the 800V voltage, up from 230V on recent commercial aircraft, can cause premature wear of insulation materials, leading to short circuits," Nierlich said. "We have to learn how to manage those issues; much testing is required, and robust designs are proposed ... After several years of development, we are rather confident about thermal performance, and reliability." One year ago, certification for the ENGINeUS 100 was expected in the first quarter of 2024.

Nierlich thanked civil aviation authorities, especially EASA. "They are supporting us in this certification endeavor, which is crucial for us and for our industry," Nierlich said. "We knew certification rules for thermal propulsion; we did not have rules for electric motors, and now we have them. It took two years of effort to redefine the basis, and rewrite special conditions for an electric motor used in propulsion."

"We first flew on Voltaero's hybrid-electric Cassio S in 2021," Nierlich said. "In 2023, we flew on the Diamond eDA40. We did a lot of flight tests, we demonstrated our

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MRO

Flyht Earns Second STC For New Aircraft Interface Device

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Flyht Aerospace Solutions has earned a Transport Canada supplemental type certificate (STC) for installing its third-generation aircraft interface device, Automated Flight Information Reporting System (AFIRS) Edge, on Boeing 737 Next Generation (NG) variants, the company said.

The Calgary-based hardware and software-as-a-service specialist partnered with 737NG operator Air North to earn STC certification. The airline in late 2023 signed a deal to equip its fleet, which is being upgraded from 737 Classics, with AFIRS Edge.

Edge provides several capabilities in one box. The aircraft interface device supplies data to electronic flight bag applications and a wireless quick access recorder. It also is 3G/4G/5G cellular and Iridium Certus capable and can run both Flyht and third-party software.

The Transport Canada approval comes three months after Flyht earned a similar STC to install AFIRS Edge on Airbus A320ceos. Canada Jetlines is the A320 AFIRS Edge launch customer.

"We are now in a leadership position to provide the aviation industry's first wireless data and communications device with 5G capability on the two most popular aircraft types, the Airbus A320 and Boeing 737NG," Flyht President and CEO Kent Jacobs said.

Flyht is developing two versions of AFIRS Edge. The initial certifications are for the flange version. The second version, dubbed the Edge Plus, is a plug-and-play design that uses existing avionics trays and aircraft wiring. Flyht is working on the initial Edge Plus STC for the A320.

The company also plans to develop AFIRS Edge STCs for other aircraft types, starting with the Embraer ERJ145.

AIRLINES

Korean Air Prepares To Ramp Up Its Recovery In China Market

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Korean Air plans to make significant progress toward the full restoration of its flight capacity in the mainland China market thanks to the resumption of multiple routes in the second half of this year.

The carrier has announced it will resume five routes to China, and increase frequencies on others, as a result of rising demand. As with most Asia-Pacific airlines, Korean Air's China market has been one of the slowest to recover.

The route resumptions will increase Korean Air's weekly flights on mainland China routes by 33% compared to current levels, the carrier said. This will restore its weekly flights in the China market to 89% of pre-pandemic levels.

Bringing back more routes will also increase the number of mainland China destinations served by Korean Air to 88% of 2019 levels.

The South Korea-China routes will be added progressively in the coming months. Korean Air will resume its route between Busan and Shanghai Pudong airport on July 1, and its Jeju-Beijing route on the same day. Both services will be daily. The Seoul-Hefei route will resume with five weekly flights from Aug. 19, the Busan-Beijing route will restart with six weekly flights from Sept. 16 and the Seoul-Kunming route with four weekly flights from Oct. 14.

Other China routes will see frequency increases, including flights from Seoul to Yanji, Dalian and Tianjin.

Korean Air also plans to boost its Japanese network to meet demand. It will increase its weekly flights in this market by 2% from the current total, meaning weekly flights will be 4% above pre-pandemic levels. The number of Japanese destinations served by Korean Air reached 100% of pre-pandemic levels in January.

The carrier will resume its Jeju-Tokyo Narita airport route, with three weekly flights, between July 19 and Oct. 25. There will also be frequency increases on routes from Seoul to Okayama and Kagoshima.

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performance, the motor meets expectations."

Next in line is the Aura Aero Integral E electric two-seater, the first flight of which is imminent. CAE, for an electrified Piper Archer trainer, is another customer.

Nierlich describes the ENGINeUS 100 as a replacement for the Continental 360 series engines. A feature is the integrated converter, which controls the motor's torque and speed (between 2,500-3,500 rpm). The single unit makes design and installation easier for the airframer, Nierlich said.

Safran Electrical & Power was awarded a Design Organization Approval by EASA in 2023 and wants to be the first to certify an electric engine for CS-23/Part 23 aircraft.

AIRLINES

Alaska Airlines, Flight Attendants Reach 'Record' Tentative Agreement

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After nearly two years of negotiations and a successful strike authorization vote, flight attendants at Alaska Airlines and the carrier's management have forged a tentative agreement for a new contract.

Alaska's flight attendants, represented by the Association of Flight Attendants (AFA), voted in favor of a strike authorization in February. The last major work action by Alaska Airlines' flight attendants occurred in 1993 when the work group launched intermittent strikes without notice dubbed CHAOS (Create Havoc Around Our System), a strategy that has since been trademarked.

The new tentative agreement was reached under the oversight of the National Mediation Board (NMB) after the AFA requested mediation in September 2023.

No specific details of the tentative agreement have emerged, but in late 2023, the union expressed frustration that Alaska opted to pursue an acquisition of, and merger with Hawaiian Airlines, "just months after stating that flight attendant proposals were not 'economically feasible.'"

Alaska has negotiated seven labor contracts during the last couple of years, and during an earnings discussion in April the company's CFO Shane Tackett noted it continued to prioritize finalizing an agreement with the airline's flight attendants. "We remain committed to high productivity in our contracts," he said. Absent the Boeing 737-9 grounding in January following the door plug blowout incident on Jan. 5, "we would have had a 2% increase in productivity year-over-year, as measured by passengers carried per FTE [full-time employee]."

AFA, meanwhile, declared the tentative agreement would produce a record contract. The new agreement follows Southwest Airlines attendants ratifying a new contract in April valued at $6.3 billion over its four-year term, one which its union described as leading the industry on pay, and "set[ting] a new standard for the profession."

Southwest's flight attendants are represented by the Transport Workers Union (TWU), and at the time the agreement was ratified, TWU International President John Samuelson stated: "This new TWU contract has so many significant improvements that its impact will resonate across the industry as carriers like United, Alaska, and American bargain with their flight attendants."

Flight attendants at American Airlines expect the NMB to decide on a request by the Association of Professional Flight Attendants (APFA) to be released from mediated contract talks by the end of June.

If granted by the NMB, a 30-day "cooling off" period would begin, preceding any strike action that was authorized by the labor group in a nearly unanimous vote in summer 2023.

Alaska's negotiating committee plans to present the full text of the tentative agreement to the airline's AFA Master Executive Council (MEC) this week. Voting members of the MEC will thoroughly review the agreement prior to the release of details and a membership ratification vote.

SUPPLIERS

Figeac Aero Signs Two Contracts For Metallic Parts

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LYON—Metallic components specialist Figeac Aero has signed two contracts worth a combined €90 million ($97 million) for the production of parts for the Airbus A220 and Boeing 737 MAX.

For the Figeac, southwest France-based company, obtaining new business means being on track to recovery. Figeac Aero's future was once at stake because of the pandemic's serious impact. A factor in the turnaround has been the capital increase funded by the Tikehau Aero Partenaires fund in 2022. In January, under the Pilot 28 strategic plan, CEO Jean-Claude Maillard set more ambitious objectives in sales and financial performance.

The contracts, with unspecified customers, cover titanium and aluminum parts. They will be produced at several of Figeac's factories, in France and overseas, the company said. Figeac Aero has production sites in Mexico, Morocco, Romania, Tunisia and the U.S. The agreements stem from long-term partnerships and include contract extensions, market share increases and the outsourcing of additional part numbers, the company added.

Production will start in the second half of 2024 for the first contract, and 2026 for the second one. Both run until 2032. A dedicated workshop will be organized in production cells—an integrated arrangement aimed at cutting costs and working capital while improving productivity.

A target in Pilot 28 is that new business should contribute €80-100 million to annual revenues in 2027-2028, when total revenues reach €550-600 million. Combined, the two agreements will contribute €6 million to the annual objective, Figeac Aero said.

"These latest agreements are fully in line with the targets set out under our Pilot 28 strategic plan and provide yet more evidence of our ability to reconcile a competitive offering with financial performance," Figeac Aero COO Thomas Girard said.

MRO

Metal Inspection System To Debut At GE MRO Tech Acceleration Center

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CINCINNATI—A non-destructive inspection system for metallic engine parts based on technology developed for detecting art forgeries is set for deployment to MRO shops via GE Aerospace's soon-to-open Services Technology Acceleration Center (STAC).

Set to debut in September, the STAC is designed to accelerate the placement of new inspection and repair processes to GE's MRO network. The non-destructive, open-beam x-ray fluorescence spectroscopy (XRF) inspection device, which can detect microstructural variations in metal parts, is the first of its kind in the aerospace industry, GE says.

"High-energy X-rays interact with a surface or some part of the subsurface of the part, excites the outer shell of electrons and re-emits a known chemical signature," says Nicole Jenkins, chief MRO engineer at GE Aerospace. The XRF system can detect, for example, additively made substructures with anomalous or contaminated powdered metal—helping alleviate component inspections that have caused issues recently for GE and particularly Pratt & Whitney.

Developed by GE Aerospace in partnership with Bruker, a provider of analytical tools for material characterization, the system adapts the same basic sensor head used to evaluate art works. "We've taken the detector that measures those re-emitted excited and kilovolt electrons and created one that is for specific elements of interest for us," Jenkins says.

"In this case, we're looking for titanium. But again, in powder metal alloys, we can look for any chemical signature as long as we have modified both the software which we've developed here, and the detector to isolate that against the other part of the spectrum analysis," she adds.

As well as inspecting produced or used parts, the device is also intended to prevent flawed components entering production. "The idea is to be proactive as opposed to reactive," Jenkins says. "Now that we've developed this technology, we can put material back into the field that's been deemed non-serviceable. But I'm also working to put this technology well upstream. So how do we work with our suppliers and vendors to determine that we have quality assurance before we ever get to the finished product?"

The new X-ray process will now augment and supplement other imaging methods and techniques used by GE Aerospace, including ultrasound, computed tomography, flash thermography, eddy current testing, fluorescent penetrant inspection and dimensional metrology.

Around 50 manufacturing engineers will work on new inspection and repair techniques in the 65,000-ft.² STAC facility near Cincinnati.

AIRLINES

Vietnam Airlines Still Working To Reverse Losses Post-Pandemic

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Despite double-digit growth, Vietnam Airlines is clawing its way back to profitability as macroeconomy uncertainties dampen travel sentiments.

The flag-carrier is looking to further expand its network toward Europe and Southeast Asia and rethink its domestic strategy.

Vietnam Airlines will be converting the configuration of its Airbus A321ceos "to improve operational efficiency, meeting market demand, and aligning with the fleet restructuring plan," it said. The airline could see the changing of a two-class configuration to a single class for short-haul routes.

The Aviation Week Network Fleet Discovery database shows Vietnam Airlines has 42 A321ceos, aged between eight to 17 years old. Each aircraft is split into 16 business and 162 economy seats.

Vietnam Airlines' domestic network remains at pre-pandemic levels, and international service has returned to 90% of pre-pandemic levels, the airline said.

Domestically, the airline plans to adjust flight frequencies according to demand and increase capacity on tourism routes.

The carrier said Australia, India and Southeast Asia showed "positive signs," while key markets in Northeast Asia recovered slower than expected.

"Macro risks and airport infrastructure overloads remain," Vietnam Airlines said in a statement. "Pratt & Whitney's global engine recalls are causing aircraft shortages, therefore impacting operations."

The carrier did not address competition in Vietnam as CAPA/OAG data shows LCC rivals VietJet Air taking the majority 48.9% share in domestic ASK, with Vietnam Airlines four pts. behind.

Vietnam Airlines reported a 30% year-on-year improvement in 2023 revenue to VND93.3 trillion ($3.7 billion), although the airline posted a pre-tax loss of VND5.6 trillion, albeit halving 2022's full-year loss.

AIRLINES

European Regional Carriers Urge Boost For Essential Services

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Improving the terms of airline Public Service Obligation (PSO) contracts is essential to ensuring that vital air links to remote or fringe areas of Europe are maintained, according to a new report.

The study by the European Regions Airline Association (ERA) put forward a series of recommendations to the European Union (EU), which is currently considering revisions to the Air Services Regulation governing PSOs, the European equivalent of U.S. Essential Air Services.

ERA, the trade body for 55 European regional airlines, said that its members encounter considerable differences in the way in which PSOs are granted across the continent. These differences included contract length, the role of regional authorities, aircraft size requirements and discounts for regular travelers that reside in remote areas.

The study was conducted by ERA, with support from Cranfield University, the specialist UK aerospace establishment.

Based on its findings, ERA suggested several recommendations to improve the PSO framework, including additional funding and creation of new routes; allocation of more powers to EU regions involved in the PSO process and decision-making; allowing carriers to renegotiate PSO contracts in times of crisis; and extending the duration of PSO contracts, to facilitate airlines' investment in fleet renewal.

The study was launched in Brussels during ERA's Industry Affairs Meeting June 20-21 attended by ERA members and representatives from the European Commission (EC), including Flor Diaz Pulido, head of the aviation policy unit at the EC's transport directorate, DG MOVE.

PSOs in Europe play a vital role in maintaining the EU's connectivity, the study said, emphasizing the need for flexibility and sustainability in managing PSO routes. The study made recommendations for reforming PSOs to enhance economic growth and social cohesion in remote and sparsely populated regions.

"In an environment of heightened volatility and risk and with growing geopolitical tensions across Europe, it is imperative that PSO contracts are flexible, enabling regional airline partners to exercise the ability to be responsible to changing circumstances," Cranfield University's senior lecturer in air transport, Dr Romano Pagliai, said.

As the aviation industry committed to net-zero carbon emissions by 2050, the study found that the PSO framework must support the adoption of low-carbon technologies and sustainable aviation fuels (SAF).

"Extending contract lengths and providing adequate incentives for regional airlines are necessary to justify the high initial capital costs of new technologies," the study concluded. "The regional aviation industry is poised to pioneer new aircraft technologies, such as electric and hydrogen-powered aircraft, showing the necessity for substantial investment and support."

"Regional connectivity is crucial for holistic development and encompasses economic, social, political and environmental benefits that contribute to the overall wellbeing and progress of regions and their citizens," ERA Director-General Montserrat Barriga added. "PSOs are essential for maintaining connectivity in Europe, often in locations where traveling by air is the only transport option available. However, greater flexibility and support are needed to ensure that airlines can continue to offer these crucial and valuable air links."

MRO

China Eastern Building Asia's Largest MRO Hangar

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China Eastern Airlines is breaking ground in what will be Asia's largest aircraft hangar once it is completed in the first half of 2026.

Situated at Shanghai Pudong airport, the China Eastern Airlines International Aviation Maintenance Service site is part of a greater "five centers" initiative to promote the city as a hub for economic, financial, trading, shipping, and scientific and technological innovation.

The total area will span 110,000 m² (1.2 million ft.²) with three hangars and supporting buildings. The largest hangar, Hangar 1, measures 316 m (1,037 ft.) in length and 146 m in depth and can accommodate nine widebody aircraft. The MRO site is expected to inject 1.8 million manhours on MRO services annually.

Around CNY1.6 billion ($221 million) is invested in the program.

It remains unclear which other airlines will participate in China Eastern MRO services, but the carrier alone is one of China's largest airlines, with 535 Airbus, Boeing and Comac aircraft in service, according to the Aviation Week Network Fleet Discovery database.

In 2022, China Eastern and the Lingang Special Area free trade zone signed a strategic cooperation agreement to drive the aviation sector. In addition to MRO services, the agreement will cover the Asia Pacific Aviation Logistic Hub project; Aviation Financial Services Project; Asia-Pacific Aviation Material Trading and Distribution Project; Ground Equipment System Service Project; and the Aviation Engine Joint Venture Project.

Industry Data

Carbon Analysis: Strong Performance From AirBaltic

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This week, the Carbon Analysis looks at some Eastern European flag carriers, in line with Aviation Week's MRO BEER event happening in Vilnius, Lithuania.

They are Kazakhstan's Air Astana, Latvia's airBaltic, LOT Polish Airlines and Uzbekistan Airways. Emissions are shown for 2019, 2021 and 2023 in kgCO2/Available Seat Kilometer (ASK).

The chart tells several different stories, including a poor performance from LOT Polish Airlines, and the effect that streamlining of fleet has had for airBaltic.

AirBaltic has streamlined its fleet considerably, resulting in low emissions. Upon removing all but the Airbus A220-300 from fleet, airBaltic's emissions have fallen and subsequently remained at that level. As the launch customer of the A220-300, the carrier has been championing this modern, more efficient aircraft for years.

LOT Polish Airlines shows rising emissions year on year. Some fleet renewal of LOT's Boeing 737NGs to the MAX variant has occurred, but not enough to offset the impact of their Embraer E170/E190 family aircraft. Some of these aircraft emit approximately 0.015 kg/ASK of CO2, nearly double the industry average.

Uzbekistan Airways performs reasonably in this analysis. Emissions sit just below average and continue to fall over the period. Some widebodies in its fleet prevent these results from being remarkably low, but the carrier is removing older aircraft from the fleet and renewing with A320neo family aircraft.

Similarly, Air Astana has been investing in neo aircraft whilst removing some older aircraft from its fleet. However, with fewer widebodies, Air Astana's emissions per ASK were already substantially low, and so little improvement has been seen.