

ASIAN AVIATION

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ASIA'S ONLY COMPREHENSIVE INDEPENDENT INDUSTRY PUBLICATION



Helicopters Here to Stay

UAM GETS THE PRESS, BUT CHOPPERS
REMAIN THE WORKHORSE OF THE
ROTOR INDUSTRY

CONNECTIVITY

IFC suppliers are pushing the boundaries of the possible

IN TRANSTION

SE Asia sees big moves in business jet MRO

TWIN ENGINES

Alan Lim of Alton Aviation on India, China and growth in Asia

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16

28

35

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TWIN ENGINES
Asia's Last of Its Kind: Aviation in India, China and growth in Asia

On the cover: A Japanese Coast Guard helicopter. PHOTO: Airbus Helicopters

4 VIEWPOINT
Asia continues march to aviation top spot


 **NEWS**


- 6 BUSINESS AVIATION NEWS**
- 7 ROTOR/UAV NEWS**
- 8 MRO NEWS**
- 9 INTERIORS NEWS**
- 10 PEOPLE ON THE MOVE**
- 12 INDUSTRY NEWS**


 **FEATURES**


- 16 ACCELERATING CONNECTIVITY**
Asia-Pacific carriers are making their in-flight connectivity moves as service reliability improves and more options become available. Emma Kelly looks at some of the developments in the region.
- 22 CHANGI LOSES TOP SPOT TO DOHA'S HAMAD INTERNATIONAL AIRPORT**
Singapore's Changi Airport, long considered the best airport in the world, recently lost the top spot as Qatar ramps up the competition to draw passengers from Asia to transit through the Middle East. *Asian Aviation* recaps the awards.
- 23 HELICOPTERS ARE HERE TO STAY**
For some years the urban air mobility sector has targeted this year's Paris Summer Olympic Games as the time and place for their industry to move from concepts to operations by flying patrons from the banks of the Seine to the various games venues. But helicopters are not going away anytime soon. Michael Doran reports.

- 28 BUSINESS JET MRO IN TRANSITION**
Southeast Asian Business Jet MRO: Developing, elevating standards and building a robust domestic talent pipeline. Tom King reports.
- 33 PRATT & WHITNEY CONTINUES GTF WORK**
From dream debut to recurring nightmare, P&W's troublesome GTF engines have caused major disruption for Indian operators and others. But the engine maker says it's making progress as Shelley Vishwajeet and Matt Driskill report.
- 35 TWIN ENGINES OF GROWTH**
Asian Aviation Editor Matt Driskill talks to Alan Lim, a director at Alton Aviation Consultancy in Singapore, about the industry's growth in Asia and which countries are coming back to the 'new normal'.

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Sustainability — too little too late?

FORGIVE ME FOR SOUNDING CYNICAL, but all this to and fro in the aviation industry about “sustainability” is coming too late to have any real impact on the planet we call home by the deadlines the industry has set. Depending upon who you ask and in which sector, the industry wants to achieve net-zero by 2050 with others hoping for a 2030 goal.

The older I get and the more I look back on the Earth we all share, it’s not going to happen. And my child and your children will be the ones to pay the price.

I’ve written previously that I believe the aviation industry gets a bad rap when it comes to the environment. It is certainly not the most polluting industry out there by any measure but suffers from the problem of being one of the most visible. One only has to look up in the sky to see a plane with its contrails and out come the “tsks, tsks, tsks.” Business aviation gets an even worse rap.

It’s not that I don’t applaud the industry for talking a good game, but that’s about all it is at the moment. A lot of talk. Sure, there’s contracts being signed for sustainable aviation fuel (SAF) such as the one Air New Zealand recently signed with Neste, every aviation-related company either has brought on or is bringing on a so-called “chief sustainability officer”, and press release after press release touts the latest environmental move by every aviation company on the planet.

There are also what I call “moon-shot” ideas like using hydrogen. Airbus wants to have a hydrogen-powered plane in the skies by 2035. But this is not new. The former Soviet Union actually flew a hydrogen-powered plane. The Soviets used a modified Tupolev Tu-154 that first flew in 1988. It used first liquid hydrogen and later liquified natural gas, but only one engine on the plane used hydrogen. Kelly Johnson, the legendary leader at Lockheed’s Skunk Works, also worked on a hydrogen-powered plane but gave up because of the challenges involved. While all this happened decades ago, the challenges in using hydrogen remain. It’s not good for long-haul flights where most of the pollution occurs and storing it at airports is not a good idea because of its volatility. Anyone remember the Hindenburg? Hydrogen fuel cells may be another matter for things like Urban Air Mobility vehicles that are being

planned for short hops from city centres to airports or within a city (think Manhattan to the Hamptons in the US or Singapore to points in Malaysia).

In the short term, most in the industry agree that SAF will offer the most immediate benefits. Engine makers, airlines and other industry players hold conference after conference touting the benefits of SAF. But even SAF has its problems. For it to be truly successful, the feedstock to make SAF can’t compete with the world’s food supply, and it shouldn’t come from things like palm oil, which is one of the most destructive crops out there when it comes to clear-cutting virgin forests. One only has to drive from Kuala Lumpur to Singapore to see from horizon to horizon the amount of forest that has been cleared

for palm oil plantations. And there’s only so much leftover cooking oil from McDonald’s fries that we can use.

Again, forgive me for being cynical, but when it comes to saving the planet, the human race is doing a terrible job. Why you ask? Money. The jet fuel currently in use is simply too cheap compared to SAF and especially hydrogen. I don’t see the fossil fuel companies going away in my lifetime. They’ve known for decades about the effects of burning oil but hid that information because they are making too much money. When it comes to money, you can’t trust the human race. (Just look at Qantas. It sold tickets to people for flights it knew were not going to fly. Why? Money.)

I really hope I’m wrong about all of this. I hope SAF will become the reality everyone talks about, I hope new technologies will save aviation so it can keep growing and I hope the industry, regulators and everyone else will quit talking and start doing. I hope, but I don’t think it will happen.

But maybe at the end of the day, there’s a bright spot. Once all the ice is gone from Greenland, the Arctic, and Antarctica, we’ll finally be able to see those hidden UFO bases under the South Pole everyone talks about.

When it comes to money, you can’t trust the human race. (Just look at Qantas. It sold tickets to people for flights it knew were not going to fly. Why? Money.)

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NEXT ISSUE

REGIONAL AIRCRAFT

Embraer is proving popular with SE Asian regional carriers.

SAFETY IN FOCUS

Boeing’s woes are putting the spotlight on aviation safety.

FINANCE & LEASING

Lessors are having boom times as airlines scour the world for planes.



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BUSINESS JET MARKET WORTH US\$41.8 BILLION BY 2030

The market for business jets was evaluated to be worth US\$14.35 billion by Adroit Market Research, and it is predicted to rise to US\$41.8 billion by 2030, with a CAGR of 4.2 percent.



TAG Aviation adds 3 aircraft to global fleet

TAG Aviation announced the expansion of its fleet with the addition of three aircraft, enhancing their charter services across Europe and Asia. The company welcomed a Dassault Falcon 2000 LXS, Embraer Phenom 300E and Gulfstream G450. The Falcon 2000 is renowned for its advanced technology and spacious cabin, ensuring a luxurious and productive travel experience. The Phenom 300 impresses with its outstanding performance and elegant design, perfect for both business and leisure trips. The G450 stands out with its long-range capabilities and superior reliability, providing peace of mind for passengers. "Speaking on behalf of TAG globally, we are excited to be extending our fleet with three very different aircraft to what is already a distinguished fleet of over 70 aircraft. We were fortunate enough to add 12 aircraft to the fleet last year so these additional aircraft reinforce a very positive start to 2024," said Jo Goodall, CEO, TAG Aviation Europe

GULFSTREAM BEGINS G700 CUSTOMER DELIVERIES

Gulfstream Aerospace Corp. announced the commencement of customer deliveries for the all-new Gulfstream G700. The first two G700 aircraft have been delivered and are now in service with Gulfstream customers. "Beginning G700 customer deliveries less than one month after achieving Federal Aviation Administration type certification marks an incredible milestone in Gulfstream's history of raising the bar for the business aviation industry," said Mark Burns, president, Gulfstream. "We appreciate the confidence our customers have demonstrated in our aircraft and look forward to continuing these deliveries in the weeks ahead." The G700 features the most spacious cabin in the industry and the Gulfstream Cabin Experience with 100 percent fresh air, whisper-quiet noise levels, natural light from 20 Gulfstream Panoramic Oval Windows and the industry's lowest cabin altitude. The aircraft set more than 50 city-pair speed records prior to entering service and can fly 7,750 nautical miles/14,353 kilometers at Mach 0.85 or 6,650 nm/12,316 km at Mach 0.90. The maximum operating speed of the G700 is Mach 0.935, the fastest in the Gulfstream fleet. "We are excited for our customers to experience the unparalleled G700 as we continue to deliver this exceptional aircraft around the world," said Burns.

MEC SETS UP AOG STATION IN MANILA

Metrojet Engineering Clark (MEC), the Philippines-based maintenance, repair and overhaul (MRO) station of Hong Kong-based Metrojet, has recently set up an Aircraft-On-Ground (AOG) support station on-site at the Manila Ninoy Aquino Airport (MNL) to cater to the AOG requests. The new MEC AOG support operation is composed of a consignment of tools, GSE and other support equipment, facilitating MEC's quicker response time to AOG support offered in Manila. MEC signed an MoU with the local business jet service provider — Asian Aerospace Corporation— in March and will officially commence operations on 1 May 2024. Sarith Vaikuntan, general manager of Metrojet Engineering Clark, said, "We are seeing a growth in flying activities and AOG requests in Manila and would like to equip ourselves to provide swift and quality turnaround AOG services to our current customer base and those in need of support.

The station in Manila will ease the response time from Clark to Manila thus returning the aircraft to service in a much shorter time." Established in 1997, Metrojet, as part of the Kadoorie Group, pioneered business aviation services in Hong Kong and remains one of the foremost safety and customer-focused business jet operators and maintenance providers in the Asia Pacific region. The company provides all-inclusive aircraft management, maintenance, and aviation consultancy services to our growing business aviation customer base. Metrojet Engineering Clark currently operates a 7,100 m2 hangar providing both hangar and ramp parking and a fully authorised repair station with approvals from the Civil Aviation Authority of The Philippines (CAAP), The United States Federal Aviation Administration (The U.S. FAA), the Cayman Islands CAA, the Qatar QCAA, the Isle of Man CAA, the San Marino CAA and the Korea MOLIT.

AERODYNE GROUP AND DRONEDASH SIGN DEAL FOR CROSS-BORDER DELIVERY SERVICES

Aerodyne Group, headquartered in Malaysia, signed a deal with DroneDash Technologies in Singapore to introduce cross-border drone delivery services between Malaysia and Singapore, leveraging the specialised technologies of both entities to boost logistics efficiency across the two countries and advance the region's delivery and supply chain capabilities.

EHANG ANNOUNCES JAPAN'S FIRST UAM CENTRE

EHang announced that Japan's first urban air mobility centre has been established in Tsukuba City, Ibaraki Prefecture. This state-of-the-art facility serves as a demonstration flight site, ground infrastructure, and maintenance base for EHang's various pilotless electric vertical takeoff and landing aircraft in the region.



JAPAN COAST GUARD ADDS THREE H225S

The Japan Coast Guard (JCG) has placed an additional order for three H225 helicopters, taking its total H225 fleet up to 18. The largest Super Puma operator in Japan received three H225s in December 2023 and one in February 2024 for its growing fleet. The new helicopters will support territorial coastal activities, maritime law enforcement, as well as disaster relief missions in the country. "The Japan Coast Guard has been an active operator of the Super Puma family helicopters for three decades. This follow-on order demonstrates the customer's confidence in our products and the dedicated support to their fleet," said Jean-Luc Alfonsi, managing director of Airbus Helicopters in Japan. "We believe the H225 is the perfect choice for JCG's critical missions for law enforcement, as well as coastal and island protection, given its versatility in all weather conditions. We are committed to fully supporting its existing fleet, as well as its upcoming deliveries, ensuring high availability for its operations." Twenty-four H225s are currently flown in Japan by Japan's Ministry of Defence or parastate operators.

Eve Air Mobility joins Japan's AAM committee

Eve Air Mobility has been named a member of Japan's Advanced Air Mobility (AAM) Public-Private Committee. The committee is responsible to evaluate and make recommendations to the Japanese Ministry of Economy, Trade & Industry and the Ministry of Land, Infrastructure, Transport & Tourism on AAM regulations & policies for Japan. Established in 2018, the committee is made up of selected members discuss the development of various AAM services such as passenger transportation, scenic flights, and air ambulance services throughout Japan. "The Japanese government and the private sector have been proactive in working together to develop the Advanced Air Mobility market and clarify the regulatory framework needed to make it a reality. We are honoured to become a member of the Japan AAM Public-Private Committee and help advance this work," said Johann Bordais, CEO of Eve Air Mobility. "We look forward to helping understand and define a business model that not only enables eVTOL flights in Japan, but also advances the overall mobility ecosystem." Eve also announced it has signed a letter of intent with AirX Inc., Japan's largest public helicopter air charter service, for up to 10 firm and up to 40 optional electric vertical takeoff and landing (eVTOL) aircraft. The order will support the continued development and scaling of innovative transportation operations in Japan. AirX is a pioneer of advanced air mobility in Japan and a digital platform company offering a total solution of charter services to the Japanese public via AIROS Skyview. AirX announced the launch of the Greater Tokyo Area's first eVTOL test field, the UAM Centre. This innovative initiative builds on AirX's rich history of offering unique aerial experiences through AIROS Skyview since 2015, marking a significant milestone in the company's journey towards sustainable and accessible urban air mobility (UAM). The UAM Centre is set to revolutionize air travel in the Tokyo metropolitan area, showcasing the company's commitment to innovation and the future of transportation.



PRATT & WHITNEY CANADA AND TAAG AIRLINES SIGN FLEET MANAGEMENT DEAL

Pratt & Whitney Canada and TAAG Angola Airlines E.P., Angola's state-owned airline, have signed a six-year Fleet Management Programme (FMP) agreement. The engine maintenance services cover the airline's PW150A engines which power their fleet of Dash 8-400 regional turboprops. The agreement allows Pratt & Whitney to tailor coverage to meet the airline's operating environment. Pratt & Whitney is an RTX business. TAAG's De Havilland Canada Dash 8-400 aircraft powered by the PW150A engine. The agreement also includes Pratt & Whitney's proprietary oil-analysis technology and its FAST diagnostic and prognostic solution which captures, analyses and wirelessly sends full-flight data intelligence to the customer within minutes of engine shutdown. "With a roughly 75-passenger capacity, optimal fuel efficiency, and overall reliability, the PW150A-powered Dash 8-400 fits our needs," said Nelson de Oliveira, CEO, TAAG Airlines. "P&WC's FMP program is ideal for us as we can rely on the proven expertise of the engine original equipment manufacturer to ensure we gain maximum productivity and efficiency from our PW150A engines."

Lufthansa Technik achieves positive results despite strong headwinds

Despite considerable challenges, Lufthansa Technik said it once again realised a triple-digit million result in the first quarter of 2024. After last full year's record result, however, the global market leader in aircraft maintenance, repair and overhaul (MRO) started the year weaker than expected with an Adjusted EBIT of 116 million euros (previous year 135 million euros). This is mainly due to the effects of the strikes in Germany in recent months. The continuing difficulties in the supply of materials across the industry and disproportionately high cost increases are also having a negative impact. Revenue in the first quarter of 2024 was 1.8 billion euros, 15 percent higher than in the same prior-year period. The Adjusted EBIT margin, i.e. the ratio of earnings to revenue, was 6.6 percent (previous year 8.8 percent) and is currently well below the prospective figure of 10 percent targeted by Lufthansa Technik. The company signed more than 1,000 new contracts last year, acquiring new business worth 8 billion euros and a further 174 contracts were signed in the first quarter of this year including contracts for engine maintenance services for the Philippine airline Cebu Pacific or the expansion of the successful cooperation with the German leisure airline Condor in the area of component support.

SIA ENGINEERING EXITS PW1500G RISK-REVENUE SHARING PROGRAMME

SIA Engineering Company (SIAEC) announced that it has entered into an agreement with Pratt and Whitney to exit from the PW1500G engine Risk-Revenue Sharing Programme (RRSP) that was held through its wholly-owned subsidiary, Nex-Gen Network (2) Holding Pte. Ltd. (NGN2). This programme was previously known as the CSeries aircraft engine programme. NGN2 invested in the RRSP in 2010 and had a 1 percent share of the programme prior to the exit. Participants of the RRSP are required to share the costs, risks and

revenues of the PW1500G geared-turbofan engine, from its design and development to its production (including engine spare parts), post-certification engineering support, marketing and sales, as well as the provision of aftermarket services including maintenance, repair and overhaul services. The investment came with derived benefits for Eagle Services Asia Private Limited (ESA), a joint venture between Pratt & Whitney (51 percent) and SIAEC (49 percent) in Singapore, which included new engine capability and MRO work for ESA,

and relevant investment support grants related to the development of new engine capability. As the RRSP requires further capital injection, after careful deliberation and with PW's agreement, a decision was taken to exit from the RRSP. This will allow the SIAEC Group to deploy capital, which would otherwise have been used to support the funding of the RRSP, to other areas that are better aligned with its growth strategy. Upon exiting the deal, SIAEC will write off S\$25.1 million of net assets associated with the programme.



LUFTHANSA ALLEGRIS HITS THE SKIES

Lufthansa said its new Allegris interior has already hit the skies with the first Airbus A350 equipped with Allegris flying from Munich to Vancouver. The second destination is Toronto, which will be served alternately with Vancouver on selected flights in the first few months. With further A350s delivered, the Allegris cabin will also be used on flights to Chicago and Montreal in the summer. For the first time, travellers can now also view a seat map for all Allegris flights in the familiar booking channels with all special Allegris seats, such as the five options in Business Class. Guests who are already booked on these flights will be notified of their “upgrade” to the new cabin. Seat reservations in Business Class are free of charge in the first few months and can be made and changed via the familiar booking channels. Passengers can see whether a flight is equipped with the Allegris product three weeks before departure.



Crystal Cabin Awards finalists named

The Crystal Cabin Award's expert jury has now selected the finalists for 2024, putting forward 25 entries that offer a fascinating glimpse into the future of flying, from environmentally sustainable cabin walls to accessible onboard entertainment and revolutionary seating concepts. Finalists in the Cabin Concepts category include the JAL A350-1000 Cabin Interior by Tangerine, the BermudAir Aisle Class Suite by Factorydesign and BermudAir, and the Airspace Cabin Vision 2035+ by Airbus Operations GmbH. In the Cabin System category, finalists include the GeniusPOWER Core by KID-Systeme, theCUBE by Safran Cabin and Burrana with its RISE Power, an in-seat power supply system. In the Health & Safety category, finalists include Safran Passenger Innovations (SPI), in collaboration with Air New Zealand and Virgin Atlantic with their Accessible IFE, the AirPRO by Schroth Safety Products and the Accenture PED safety bag by Accenture. In the Passenger Comfort category, finalist include the Wellbeing Zone by Diehl Aviation, the Signature Seat by Safran Seats and the ARISE intelligent comfort system by Collins Aerospace. In the IFEC & Digital Services category, finalists include Intelsat with its Intelsat Multi-Orbit Connectivity improved internet service, the ADAPT system by Collins Aerospace and FlytEdge developed by Thales Avionics. In the Material & Components category, finalists include STARLight by Collins Aerospace, Unum Aircraft Seating, in collaboration with MGR Foamtex, for their Door 2.0 - The Zen Privacy Door, and the ECO Bracket developed by Diehl Aviation and 9T Labs. In the Sustainable Cabin category, finalist include the R Sphere by RECARO Aircraft Seating, the ECO Sidewall by Diehl Aviation and the Onboard Water Dispenser by Safran Cabin. In the University category, finalists include Flexifold by Tongji University, in collaboration with Dupont, Silentium in excelsis by the University of São Paulo in cooperation with Embraer, and Silvacomfort also by the University of São Paulo in cooperation with Embraer. Another finalist is the Wheelchair Space and Securement System from Virginia Tech in cooperation with Boeing, All Wheels Up, and Collins Aerospace.

RECARO TAPPED BY MALAYSIA AIRLINES FOR ECONOMY CLASS SEAT

RECARO Aircraft Seating was chosen by Malaysia Airlines to furnish its new Airbus A330neo aircraft with the CL3810 Economy Class seat. Malaysia Airlines will be the first carrier in Southeast Asia to feature the CL3810. The CL3810 is the latest addition to the RECARO seating portfolio and has garnered recognition as the winner of both the iF Design Award and the Focus Open

Gold Award. The lightweight seat was designed to enhance the passenger experience and operational efficiency. More than 5,000 CL3810 pax are set to be delivered for a linefit on Malaysia Airlines' A330neo aircraft, starting in Q3 2024 through to 2028. Passengers can expect seat pitch ranging from 31 to 36 inches, 6-inch recline, a 13.3-inch in-flight entertainment system, and

individual power access at each seat with type USB-C and USB-A ports. Seat cushions with layered foam and ergonomic technology, a six-way adjustable headrest, and a Comfort+ seat bottom with articulation will further enhance the passenger experience on long-haul flights. In addition, the unique slim backrest design will provide an extra inch of knee space.



People on the Move



AAR announced that Jeffrey N. Edwards has been elected to AAR's board of directors. This appointment increases AAR's Board from 11 to 12 Director positions.



Aircraft charter specialist, **AIR CHARTER SERVICE**, has announced Arthur Guibert as the new CEO for its Swiss office in Geneva. Guibert joined the company in 2017 rising to the position of head of business development at the company three years ago.



ASQS announced the promotion of Jonathan Frey to chief commercial officer as the company plans pursuing strategic growth within the global aviation marketplace.



BURRANA announced the appointment of Andy Fellows as vice president, customer programmes and services. Fellows will oversee customer fulfilment across the organisation.



MARK THIBAULT

CHAPMAN FREEBORN, the global air charter specialist and part of Avia Solutions Group, has appointed Mark Thibault as president, Asia Pacific and Alain Champonnois as president, India, Middle East & Africa (IMEA) as it looks to expand its presence in both regions.



ALAIN CHAMPONNOIS



EXECUJET MRO SERVICES Europe has appointed Matthijs Hutsebaut as regional vice president for Europe. He succeeds

Christophe de Coppel who is now Dassault Aviation's MRO sales director for Europe, Middle East and Africa (EMEA) as well as Asia Pacific (APAC).



FLORIAN HEINDL

Florian Heindl has been appointed by the supervisory board of **FACC AG** as a new member of the management board and has been named chief financial officer. The company also named Tongyu Xu as its new chief sustainability officer.



TONGYU XU



JETTAINER, the global leader in unit load device (ULD) management, has appointed Thorsten Riekert as chief commercial officer. He will be responsible for Jettainer's commercial strategy aiming at advancing the company's global growth trajectory.



RUBIN SIDDIQUE



HOLGER BECK



ELMER LUTTER

LUFTHANSA TECHNIK is filling two key positions at subsidiaries in Alzey, Germany, and in the Philippines. Rubin Siddique is CEO of Lufthansa Technik AERO Alzey. He succeeds Matthias Gruber, who has moved to Eurowings Technik as head of Technical Fleet Management Eurowings and managing director. Holger Beck has been named as president and CEO of LTP. He will replace Elmar Lutter, who is retiring.



MTU MAINTENANCE has appointed Mohammad Alamouh as director of leasing and asset

management at the company's representative office in Dubai.



NOMAD TECHNICS has appointed Thomas Gierlich as the company's new chief executive officer and accountable manager. He joined Nomad Technics in 2021 as director maintenance sales.



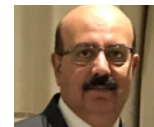
ONTIC, a leading licensor and manufacturer of complex engineered parts for the global aerospace and defence industries, has announced Jack Karapetyan in the newly created role of vice president and general manager of global MRO operations.



PLAZA PREMIUM GROUP has appointed John Girard, a veteran global hotel executive with deep experience in Hong Kong, as general manager operations for Hong Kong.



ROTATE, a leading software and strategy consulting company in the air cargo industry, has named Ryan Keyrouse as its new chief executive officer.

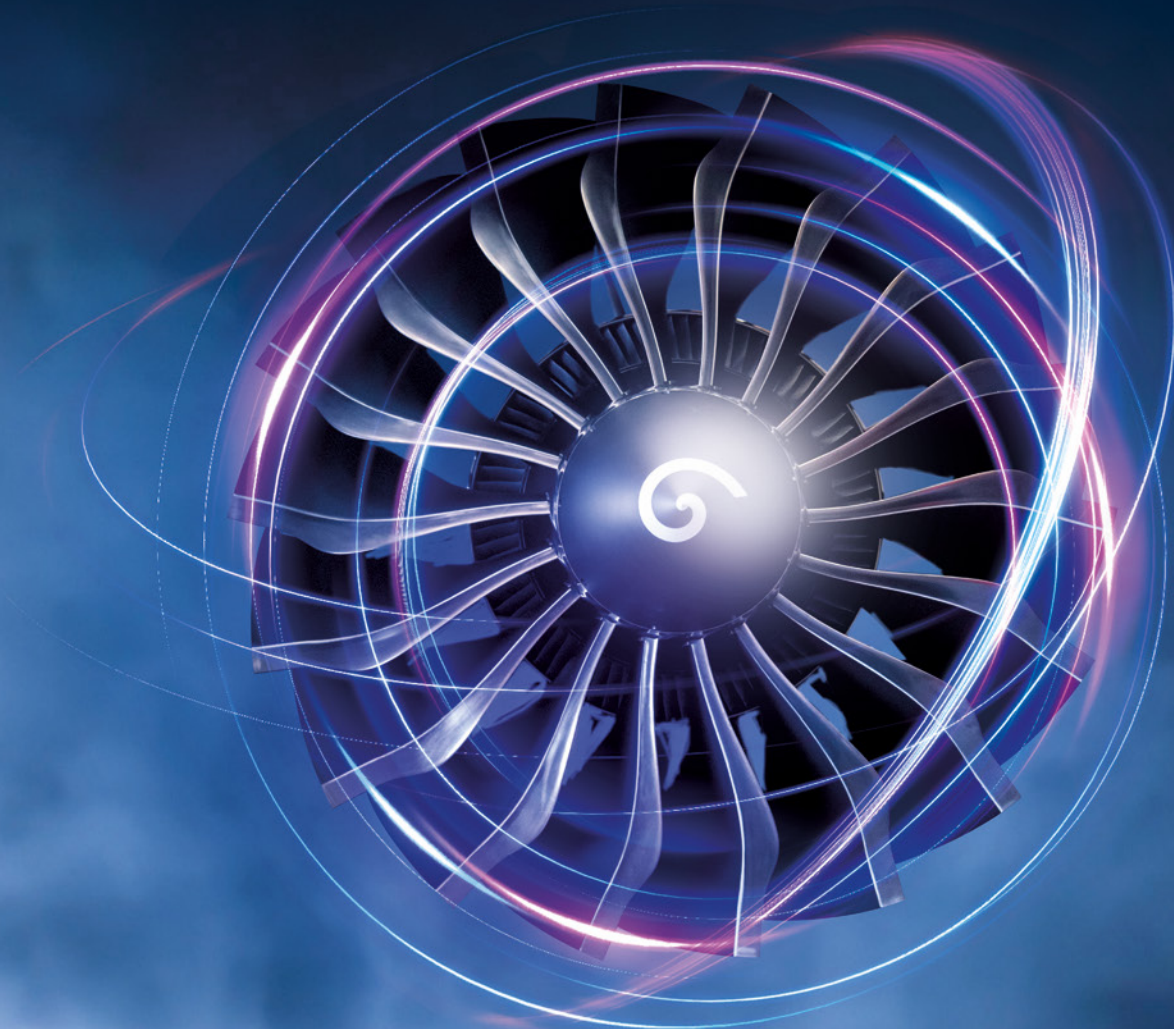


SABRE CORPORATION announced that experienced industry leader Rajiv Bhatia has joined Sabre to help advance its growth strategy in Asia Pacific.



SMARTLYNX AIRLINES has appointed Jan Belina as deputy chief executive officer to work alongside the company's CEO, Edvinas Demenius.

2024, LEAP YEAR BEST4LEAP!



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Qantas to pay A\$120 million penalty for misleading customers

Qantas has admitted that it misled consumers by advertising tickets for tens of thousands of flights it had already decided to cancel, and by cancelling thousands more flights without promptly telling ticketholders of its decision, after court action by the ACCC. As part of an agreement, the ACCC and Qantas will ask the Federal Court to impose a penalty of \$100 million on Qantas for breaching the Australian Consumer Law. Qantas has also agreed in a court-enforceable undertaking to pay about \$20 million to more than 86,000 customers who were sold tickets on flights that Qantas had already decided to cancel, or in some cases who were reaccommodated on these flights after their original flights were cancelled. "We are pleased to have secured these admissions by Qantas that it misled its customers, and its agreement that a very significant penalty is required as a result of this conduct. The size of this proposed penalty is an important milestone in enforcing the Australian Consumer Law," said ACCC Chair Gina Cass-Gottlieb. "Qantas' conduct was egregious and unacceptable. Many consumers will have made holiday, business and travel plans after booking on a phantom flight that had been cancelled." The ACCC launched Federal Court action against Qantas in August 2023 alleging that, between 21 May 2021 and 7 July 2022, Qantas advertised tickets for more than 8,000 cancelled flights. It was also alleged that, for more than 10,000 flights scheduled to depart in May to July 2022, Qantas did not promptly notify existing ticketholders that their flights had been cancelled. Qantas has now admitted that its misconduct continued from 21 May 2021 until 26 August 2023, affecting tens of thousands of flights scheduled to depart between 1 May 2022 and 10 May 2024.

AIRPORTS IN AUSTRALIA GET BOOST IN FINANCIALS FROM TRAVEL REBOUND

The aeronautical operations of Brisbane, Melbourne, Perth and Sydney airports returned to profit in 2022-23, the first full financial year since the end of COVID-19 travel restrictions, the ACCC's latest Airport Monitoring Report shows. In contrast, all four monitored airports reported losses on their aeronautical operations in 2021-22. The four airports reported a total of 100.7 million passengers passing through in 2022-23, up 127.4 percent from the previous year. However, the number of domestic passengers was still 10.4 percent below 2018-19 (pre-pandemic) levels, and international passengers 31 percent below. "Australia's four largest airports reported a significant increase in aeronautical revenues and a return to aeronautical operating profits in 2022-23, as interstate and international travel restrictions ended and people returned to the sky," ACCC Commissioner Anna Brakey said. "The airports stayed open during the pandemic and continued to incur some aeronautical expenses, without their usual level of accompanying revenues. As passengers returned in 2022-23, aeronautical revenues increased more than expenses, which lifted profit margins closer to pre-pandemic levels." Perth Airport recorded an aeronautical operating profit margin of 34.6 percent in 2022-23, followed by Sydney Airport with 29.1 percent, Brisbane Airport 28.8 percent, and Melbourne Airport 22.9 percent. Perth Airport's aeronautical operating profit margin was slightly higher than the 34.2 percent it recorded in 2018-19, but Sydney, Brisbane and Melbourne's were lower than 2018-19. The four airports combined invested \$559 million in aeronautical operations in 2022-23, which is a relatively modest amount compared to years prior to the pandemic. Much of this investment was by Melbourne Airport in a range of facilities such as roads, taxiways and terminals. The airports reported a significant increase in both revenues and operating profits for their car parking operations in 2022-23.

AIR NEW ZEALAND ANNOUNCES AIRPORT SELECTION FOR MISSION NEXT GEN AIRCRAFT

Air New Zealand announced that it has selected Wellington and Marlborough Airports as the ports for its first all-electric aircraft. Air New Zealand announced the purchase of its first next-generation aircraft, the all-electric ALIA CTOL from Beta Technologies, late last year. The airline will initially operate a cargo-only service in partnership with NZ Post. Wellington Airport will be the home base of Air New Zealand's first next-generation aircraft, while Marlborough Airport will also establish charging infrastructure to power the aircraft for the return journey. Air New Zealand also announced that it and Neste have signed an agreement for 9 million litres of neat Neste MY Sustainable Aviation Fuel. The deal represents the largest purchase of

sustainable aviation fuel (SAF) from Neste by any airline outside North America and Europe for delivery before the end of 2024. Produced at Neste's Singapore refinery, which expanded its SAF production capability last year, the nine million litres of SAF will be blended with conventional jet fuel to meet the required specifications and supplied to Los Angeles International Airport between 1 April and 30 November 2024. The SAF is expected to deliver a reduction of carbon emissions by up to 80 percent over the life cycle of the fuel compared to using fossil jet fuel, which includes its production as well as transport emissions. The airline also announced it has named new members to its Sustainability Advisory Panel.



The new additions include former Green Party Co-Leader and Minister for Climate Change James Shaw and Matteo Mirolo, the head of Policy and Strategy in the Aviation Contrails team at Bill Gates' Climate Foundation's energy start-up, Breakthrough Energy.

CHANGI AIRPORT GROUP AWARDS DEAL FOR NEW T2 HOTEL

Changi Airport Group (CAG) and Singapore's OUE announced that OUE has been awarded the tender by CAG for the lease and development of a new hotel to be located at Changi Airport Terminal 2 (T2). The new hotel, Hotel Indigo Changi Airport, is expected to be completed and fully operational by 2028. Lee Seow Hiang, CEO of CAG said, "The hotel concept proposed by OUE was the most compelling and promises to be the first zero-energy hotel in Singapore, and possibly the first for an airport hotel in the world. With travel demand continuing to soar and passenger traffic growing beyond pre-Covid levels, the new hotel will elevate the hospitality offerings at Changi Airport. It will serve our visitors well with its differentiated facilities and convenient access to T2. We congratulate OUE on being awarded the tender and look forward to a close partnership in the coming years to bring the idea for Hotel Indigo Changi Airport to life." The 255-room, 163-metre-long hotel will feature innovative design elements and modern facilities, including a rooftop day club, bar and infinity pool offering panoramic views of



the runway, airport boulevard and skyline. With layers of lush rainforest and hanging epiphytes stretching over seven storeys, its design will be centred around the concept of a "Floating Forest". The new hotel will complement the existing hotels on Changi Airport's landside including YOTELAIR at Jewel Changi Airport and the award-winning Crowne Plaza Changi Airport located at Terminal 3, which is also owned and leased by OUE Group. With sustainability as a core component, Hotel Indigo Changi Airport aims to achieve operational energy neutrality by incorporating sustainability

features such as solar photovoltaic panels, hybrid cooling systems, naturally ventilated corridors and rainwater-harvesting technology aimed at reducing environmental impact while enhancing overall guest comfort and well-being. The tourism sector in Singapore has seen a rebound from pandemic levels and is expected to continue to attract visitors as the country remains a key destination for leisure and MICE. In 2023, Singapore visitor arrivals surged 115% to 13.6 million from 6.3 million the year before with tourism receipts estimated to be between S\$24.5 billion and S\$26.0 billion.



Lessor Avolon signs sale-leaseback deal with Cebu Pacific

Avolon, a leading global aviation finance company, has agreed the sale and leaseback of four new Airbus A330neo aircraft with Cebu Pacific, the Philippines low-cost carrier. The first aircraft is scheduled for delivery in late 2024 with the final delivery planned in 2026. The new aircraft will support Cebu's expansion of its route network in Asia and the Middle East and its goal to transition to a fuel-efficient, new technology fleet with lower carbon emissions. Compared to the previous generation A330ceo, the A330neo has an increased range of range of over 13,300km (7,200 nautical miles) and 25 percent lower fuel consumption and CO2 emissions. Cebu has been an Avolon customer since 2012 and Avolon already has 11 aircraft on lease to the airline: five A320ceos, three A320neos, and three A330neos. Avolon continues to experience strong customer demand for its aircraft and orderbook given the undersupply of new aircraft. The widebody production recovery is lagging behind narrowbodies resulting in a tighter market and longer wait times for twin-aisle aircraft. Avolon's 2024 Outlook: New Horizons paper forecasted that the remaining delivery slots from manufacturers for widebody aircraft will be sold out to 2030 by the end of this year. Paul Geaney, president and chief commercial officer at Avolon, said: "The Cebu team is doing a fantastic job expanding the airline's operations and we are delighted to use our balance sheet to support the addition of four new A330neos to their fleet. With the continuing recovery of air travel in Asia we look forward to further opportunities to support customers on sale and leaseback transactions, or through our orderbook, as the availability of widebodies out to 2030 continues to tighten." Alex Reyes, chief strategy officer at Cebu Pacific, said: "These new A330neos support our goal of transitioning to a more fuel-efficient fleet and will support our continued expansion of routes both in and to the Middle East. We appreciate Avolon's continued support of our growth strategy as we further strengthen our position as one of Asia Pacific's leading low-cost carriers."

HANWHA LAUNCHES ENGINE LEASING PLATFORM

South Korean conglomerate Hanwha has launched Hanwha Aviation, an engine leasing and trading platform with a long-term vertically integrated strategy for newer generation assets. Hanwha will apply extensive experience and expertise in aero engines, finance, and asset management to deliver optimised solutions to customers. Hanwha

Aviation aims to build and manage a portfolio of over 1,000 assets over the next decade, underwritten by the aero-engine strategy. "Hanwha Aviation will provide customers and industry partners with a compelling transaction platform for trading, leasing, and asset management of aero-engines and aircraft", said Jeff Lewis, CEO of Hanwha Avia-

KOREAN AIR TAPS RAMCO AVIATION FOR ENGINE MRO SOFTWARE

Global aviation software specialist, Ramco Systems has announced a strategic engagement with Korean Air to implement its flagship aviation software, Ramco Aviation Suite, at Korean Air's Engine Maintenance Centre. This engagement comes close on the heels of the airline announcing the construction of its new engine MRO facility in Unbuk, near Incheon International Airport. The implementation of Ramco's Aviation Software will replace multiple legacy systems to streamline operations across current engine shops and planned expansion sites. With comprehensive MRO-specific functionalities, and integrated e-publications all on a unified platform, offered as an out of the box solution, Ramco Aviation will be the technological foundation for Korean Air. In addition, the airline's engine maintenance centre will also benefit from digital enablers such as Mobility via Anywhere Apps, HUBs, Dashboards and other integrations to the ecosystem offerings, powered by Ramco. Ramco Aviation Suite is employed by 24,000+ users to manage 4,000+ aircraft globally.



tion in Singapore. "Leveraging our vertically integrated approach, we will maintain a full range of engine leasing solutions tailored to our customers' requirements designed to reduce the financial impact on their operation." Hanwha Aviation will initially be focused on acquiring portfolios of narrowbody engines and aircraft.

AIPA CAUTIONS ON SINGLE-PILOT OPERATIONS

The Australian and International Pilots Association (AIPA) has called on airlines and regulators to keep at least two pilots on commercial flight decks at all times.

AIPA President Captain Tony Lucas has warned that reduced-crew and single-pilot operations being considered by some airlines and manufacturers would reduce safety. "The only safe way to fly is with at least two well-trained and well-rested pilots at the controls at all times," said Lucas. "We remind everyone of the flight emergencies where the professionalism, skill and cooperation of multiple pilots working together avoided catastrophe and saved lives."

Examples include:

- QF781 (Perth), 25 March 2024 : Pilots managed to safely land an Airbus A330-200 after hearing a loud bang and experiencing an engine failure just before descent to Perth from Melbourne.
- QF144 (Auckland), 18 January 2023: Pilots expertly handled an issue with one of the engines on a Boeing 737-800. About 20 minutes after take-off from Auckland, the aircraft experienced a problem with the right engine. The pilots shut down the engine and returned safely to Auckland.
- QF32 (Singapore), 4 November 2010: An Airbus A380 suffered an uncontained engine failure shortly after taking off from Singapore. Despite severe damage to the aircraft, the pilots managed to return and land safely in Singapore.

- QF72 (Learmonth), 7 October 2008: An Airbus A330-300 experienced uncommanded pitch oscillations while flying from Singapore to Perth, causing serious injuries to some passengers and crew. The pilots made a safe emergency landing at Learmonth Airport, near Exmouth, Western Australia.

- QF30 (Manila), 25 July 2008: During a flight from Hong Kong to Melbourne, a Boeing 747-400 experienced a sudden loss of cabin pressure due to a ruptured fuselage. The pilots made a safe emergency landing in Manila, Philippines.

Commercial airline flights are currently required to have at least two pilots, but some airlines, manufacturers, and regulators are exploring reduced-crew and single-pilot operations in order to cut costs. A Redbridge Group poll of 1,022 Australian adults found last year a total of 89 percent of Australians would feel less safe boarding a flight with one pilot at the controls instead of two or more. Eighty-eight percent believe airlines should rule out single pilot operations for commercial flights.

"In all these incidents, multiple pilots worked together to enact their world-class training and safely land the aeroplane," said Lucas. "Those promoting single-pilot operations do not spend their lives flying aeroplanes. When things go wrong at 35,000 ft and 950 km/h, they go wrong very quickly. Autopilot technology is there to assist pilots, but we should never entrust our lives to a computer in the sky. Airlines and manufacturers should put passenger safety



first and abandon the push for reduced crew and single pilot operations."

IIAC, JAA TO AND SAA SIGN STRATEGIC TRAINING PARTNERSHIP

Incheon International Airport Corporation (IIAC), JAA Training Organisation (JAA TO) and the Singapore Aviation Academy (SAA), the training arm of the Civil Aviation Authority of Singapore (CAAS), have signed a Memorandum of Understanding (MoU) to establish a strategic training partnership in aviation training. Under the MoU, the three ICAO Training Centres of Excellence (TCE) will jointly offer aviation training programmes with global coverage and to foster industry advancement through shared expertise.



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Accelerating connectivity

Asia-Pacific carriers are making their in-flight connectivity moves as service reliability improves and more options become available. **Emma Kelly** looks at some of the developments in the region.

RECENT MONTHS HAVE SEEN A NUMBER OF DEVELOPMENTS in in-flight connectivity (IFC) for Asia-Pacific airlines as satellite coverage expands, service reliability increases and data hungry passengers become used to and expect to stay connected in-flight.

Developments in the region are expected to accelerate as more IFC options become available with the arrival of low-Earth orbit (LEO) solutions and more capable satellites come online serving the region.

Korean Air, for example, recently committed to Viasat IFC for an additional 40 aircraft. The airline had already announced plans to equip 30 Airbus A321neos, but now 40 Boeing 787s have been added to the programme. All of the aircraft are scheduled to be in service and providing IFC by the end of 2027.

Viasat says its 2023 Passenger Experience Survey highlighted the growing demand for IFC from South Korean passengers. Some 81 percent of passengers in South Korea questioned said that quality

◀ *Korean Air recently committed to Viasat IFC for an additional 40 aircraft. The airline had already announced plans to equip 30 Airbus A321neos, but now 40 Boeing 787s have been added to the programme.*

in-flight Wi-Fi would make them more likely to rebook with an airline, while 80 percent said being connected to Wi-Fi during a flight is important.

Korean Air's announcement followed Qantas finally making a move on IFC for its international fleet, with Viasat connectivity to be switched on from the end of this year. The airline's Airbus A330, A380 and Boeing 787 fleets will be progressively retrofitted, with work on the A330-200LRs already under way as part of heavy maintenance. Installations on the 787s, A380s and A330-300s will follow in 2025, while the airline's new Airbus A350s and 787s will be delivered Wi-Fi ready. Meanwhile, Qantas low-cost airline Jetstar will introduce Wi-Fi on its international widebody fleet from 2026 as part of its 787 cabin refresh.

Qantas selected Viasat as its connectivity partner in 2016, but to date IFC has only been available on its domestic fleet via the NBN Sky Muster satellites. Last year, the airline added IFC on some international services, but only when the aircraft is in Australian airspace and within range of the Sky Muster. Qantas's plans to expand IFC

to its international fleet were put on hold until the satellite network could provide the same quality service internationally as available on its domestic services. With Qantas domestic passengers being voracious data consumers — 75 percent average take-up on domestic services and more than 90 percent on its latest Airbus A220s — it did not want to disappoint.

"A significantly higher percentage of Qantas customers connect to in-flight Wi-Fi than the industry average, so we recognise what an important step it is to partner with Qantas to bring the same exceptional connectivity experience to its international fleet," says Don Buchman, vice president and general manager, commercial aviation, Viasat.

Qantas says passenger usage of Wi-Fi has changed over the years, with the service no longer just for those on business. "When we first put it on, it was just a means of keeping connected, mostly for business travellers who might be going from Sydney to Melbourne for the day, and they might be completing presentations or other work," says Phil Capps, Qantas executive manager for product and service. "Web browsing is now around 40 percent of the activity, and we're seeing at least a quarter of customers using domestic Wi-Fi to stream video. We're also seeing between 15 and 20 percent of our domestic customers use Wi-Fi for audio streaming as well, driven by the popularity of Spotify and podcasts," he adds.



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Qantas's commitment to IFC on its international fleet comes as Viasat's next-generation satellite coverage in the Asia-Pacific region is set to increase with the launch in the fourth quarter of this year of Viasat-3 F3. Following its integration with Inmarsat, Viasat has 18 satellites in operation, serving 60-plus commercial airlines and 3,500 in-service aircraft worldwide. A further seven Ka-band satellites and three L-band satellites are under construction, with a "significant pipeline of capacity" expected in the next couple of years.



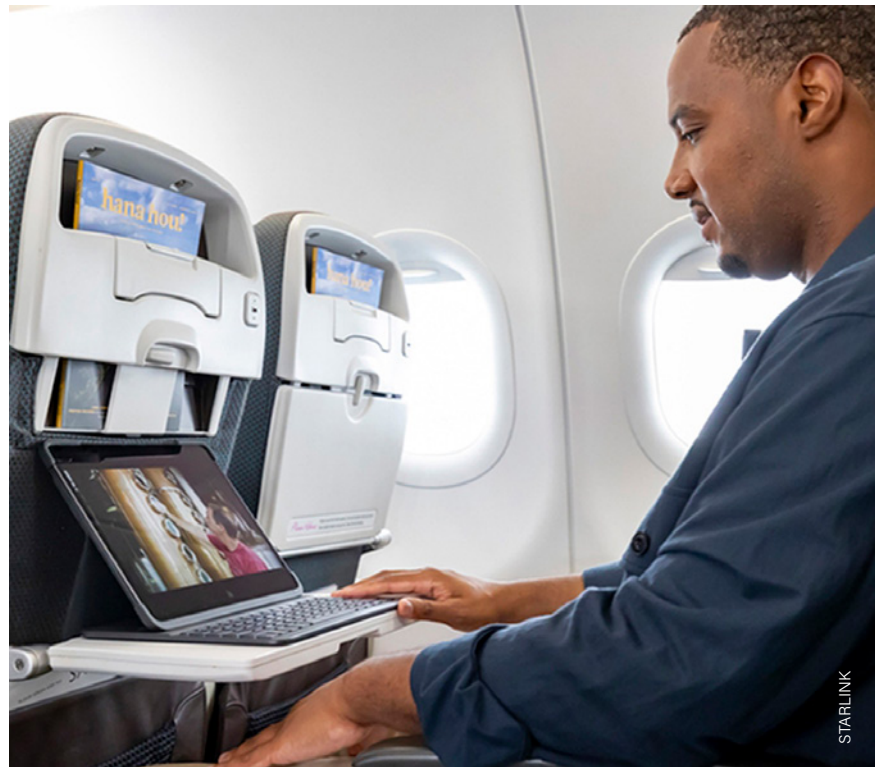
PANASONIC

▲ Panasonic Avionics expanded its global satellite capacity by 50 percent at the end of last year.

Additional customers in the Asia-Pacific region are expected to be announced by Viasat in the near future.

Viasat is not the only player on the growth path. Panasonic Avionics expanded its global satellite capacity by 50 percent at the end of last year with the addition of new and expanded geostationary Ku-band satellite capacity. New High Throughput Satellites (HTS) and Extreme Throughput Satellites (XTS) were added to its connectivity network, enhancing global coverage, including over the Middle East, Arabian Sea, and the Indian Ocean, while additional HTS capacity was added over China and Japan.

"For the past few years, we have seen exponential growth in the adoption of IFC. Passengers want faster internet speeds for traditional services like email, web browsing, social media and messaging, and they are increasingly looking to stream content, play games in-



STARLINK

As we've started to return to normal post-COVID, the passenger use of IFC has been beyond anything that we expected.

JOHN WADE, PANASONIC



ATR

▲ Air New Zealand, meanwhile, plans to install Starlink on one domestic jet and an ATR turboprop towards the end of this year, and may roll it out to other aircraft.

◀ Zipair announced in early 2023 that it would install a Starlink service on its 787s to "push the boundaries of what's possible."

flight, and use collaborative cloud-based applications. This major expansion of our global connectivity network will ensure that Panasonic Avionics consistently exceeds the growing demand for these kinds of enhanced in-flight experiences," says John Wade, vice president, IFC business unit at Panasonic.

"With our multi-layered, multi-orbit connectivity network, Panasonic Avionics has the unique ability to leverage a wide range of different, industry leading satellites, rather than the high-risk approach of relying solely on proprietary satellite technology. This enables Panasonic Avionics to add new capacity quickly and easily when and where it's needed," he adds.

Panasonic has 70 IFC customers around the world. Most recently, Panasonic IFC entered service in late January on Japan Airlines' new A350-1000 fleet, with the first of 10 of the type flying between Tokyo Haneda Airport and New York's John F Kennedy Airport.

Panasonic says since the global pandemic, passengers have been more engaged with IFC than ever before. "As we've started to return to normal post-COVID, the passenger use of IFC has been beyond anything that we expected," says Wade. "People got used to being at home, and perpetually connected on multiple devices, watching multiple screens. That's what they expect today when they get onboard an aircraft. They want to be engaged and entertained, they want to be productive, and they want to be

connected to live TV," he adds.

New IFC providers are set to enter the Asia-Pacific airline market, with Air New Zealand and Japan's Zipair among those selecting to trial or install SpaceX's Starlink LEO service. Zipair announced in early 2023 that it would install a Starlink service on its 787s. "We are committed to pushing the boundaries of what's possible in air travel and are excited to be a part of that future. We believe that our work with SpaceX is very important to increase the speed of in-flight internet communications and achieve a new standard in the industry," said Zipair president Shingo Nishida.

Air New Zealand, meanwhile, plans to install Starlink on one domestic jet and an ATR turboprop towards the end of this year. Pending a successful four- to six-month trial, the airline would then look to roll out Starlink service on other aircraft in its domestic fleet in 2025.

"We are on track to install Starlink on our first domestic jet and turboprops by late 2024. The specific date will be determined based on our engineering schedule and we'll be sharing details on when customers can expect to see the trial onboard in the coming months," says Air New Zealand Chief Digital Officer Nikhil Ravishankar.

"Air New Zealand is committed to creating exceptional customer experiences and is always looking for new and innovative technol-



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◀ A Starlink terminal after installation on a Hawaiian Airlines jets.

This robust technology proved to be an ideal solution for us to ensure reliable, high-speed, low-latency connectivity during our trans-Pacific flights over remote sections of the Pacific Ocean and areas far from ground-based connectivity towers.

HAWAIIAN AIRLINES

ogies that allow customers to have the best experience onboard. Starlink will allow us to demonstrate a new high speed and high throughput internet offering onboard that could change the way customers travel around New Zealand. Working with Starlink made sense as they have the right combination of customer experience focus and technical innovation through their LEO satellite network to deliver the ‘at home’ connected experience we want our customers to have in the air,” explains Ravishankar.

Air New Zealand uses the Inmarsat, now Viasat, service on its international fleet, but is not discounting possible service changes in the future. “We have a reliable supplier in Viasat [formerly Inmarsat] on our international services and will continue working with them. That said, we are always looking to make sure our customers have access to innovative services, particularly with in-flight Wi-Fi, where there is a significant step change in performance and will keep reviewing our decision in that context,” says Ravishankar.

In February, Hawaiian Airlines became the first major carrier to deploy Starlink service, when it launched it onboard an A321neo. Starlink is initially being installed on the airline’s A321neo fleet, followed by A330s by year-end and then new 787-9s, meaning

passengers on its trans-Pacific services to the Asia-Pacific region, including east coast Australia, will get to experience Starlink connectivity in the near future.

The free service is available as soon as passengers board the aircraft, with no registration pages or payment portals. Roll-out has been smooth, with the service performing as expected and akin to home internet, according to the airline. “Our guests can now stream live sports, watch their favourite movies, play interactive games and enjoy other connected experiences that they often enjoy at home,” it says. Passenger reaction has been positive concerning the ease of use, reliability and speed of service, it adds.

“Starlink was the most favourable for us because of its LEO constellation of advanced satellites, which continues to grow in both numbers and efficiency,” says the airline. “This robust technology proved to be an ideal solution for us to ensure reliable, high-speed, low-latency connectivity during our trans-Pacific flights over remote sections of the Pacific Ocean and areas far from ground-based connectivity towers,” it adds.

Another frequent visitor throughout the region, Qatar has also committed to Starlink for an unspecified number of aircraft and routes.

Starlink will shortly be joined by Eutelsat OneWeb in the LEO market, with the latter working towards the launch of aviation services in September. Earlier this year, in conjunction with Intelsat, Eutelsat OneWeb conducted successful flight tests demonstrating low-latency, high-throughput IFC service at extreme northerly latitudes, used by many polar routes connecting Asia, North America and Europe. Eutelsat OneWeb and its partners have kept airline customers close to their chest.

Telesat Lightspeed, meanwhile, plans to join the LEO club with global services by 2027.

With passengers increasingly expecting connectivity wherever they go, developments are only set to continue. Market intelligence and consultancy services provider Valour Consultancy expects more than 22,000 aircraft to be equipped with IFC globally by 2032. But with increased equipage also comes increased passenger expectations in terms of a consistent and quality connectivity product, it notes, with service quality set to sort out the winners and losers.

Viasat has no doubts about future demand. “Our research shows more passengers than ever want to benefit from high-speed Wi-Fi at 30,000ft — and it’s great to see so many airlines delivering on this,” says Viasat’s Buchman. He adds: “The experience is also richer than ever before, with the arrival of connectivity offerings like Live TV and live sport. Our survey found that four in five — 81 percent — of passengers would even be willing to pay to watch live sports in the air, so as more airlines bring this onboard, even more passengers can benefit from a richer experience. After all, we know that 83 percent of passengers worldwide are more likely to rebook with an airline offering a quality Wi-Fi experience.” →

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Changi loses top spot to Doha's Hamad International Airport

Singapore's Changi Airport, long considered the best airport in the world, recently lost the top spot as Qatar ramps up the competition to draw passengers from Asia to transit through the Middle East. **Asian Aviation** recaps the awards.

DOHA'S HAMAD INTERNATIONAL AIRPORT was recently named the World's Best Airport 2024 at the World Airport Awards. Hamad International Airport also won awards for the World's Best Airport Shopping and the Best Airport in the Middle East.

Qatar Airways Group Chief Executive Officer, Eng. Badr Al Meer said: "This year HIA celebrates its milestone 10th year of operations, and we are truly honoured that passengers have voted us Best Airport in the World for a third time. We are also delighted to bring home the top awards for Best Airport Shopping and the Best Airport in the Middle East for the second consecutive and tenth time respectively. Skytrax prestigious awards reflect the dedication of our employees who every day help to innovate and maintain our leading position."

The 2023 Airport of the Year and 12-times previous winner, Singapore Changi Airport, achieved second place in the global ranking, winning awards for the Best Airport in Asia and the World's Best Airport Immigration Service. Seoul Incheon Airport, who moved up to third place in the global survey rankings, was named the World's Most Family Friendly Airport for 2024.

Tokyo Haneda Airport was No. 4 in the global ranking and maintained further outstanding results, being declared the World's Cleanest Airport, the World's Best Domestic Airport and as delivering the World's Best Airport PRM & Accessible Facilities.

Other highlights from the 2024 ceremony included Tokyo Narita Airport being recognised for customer service, as they were named the World's Best Airport Staff and Best Airport Staff in Asia. Elsewhere in Japan, New Chitose Airport was voted the World's Most Improved Airport, after a much-improved performance in the global survey, and across many of the category sections. Chubu Centrair International Airport, Nagoya, won the World's Best Regional Airport award, and Kansai International Airport was recognised for the World's Best Airport Baggage Delivery.

Istanbul Airport was voted World's Best Airport Dining Experience and Best Airport in Southern Europe. Around Europe, Helsinki Vantaa Airport was the Best Airport in Northern Europe, and Budapest Airport was once again named Best Airport in Eastern Europe by the passenger vote.

In China, Guangzhou Baiyun International Airport won the award for Best Airport in China. Haikou Meilan International Airport was voted Best Regional Airport in China and Best Airport Staff in China. The Hyatt Regency Shenzhen was named the Best Airport Hotel in China.



▲ Changi Airport in Singapore has long held the top spot, but is facing stiff competition.

Delhi International Airport was again triumphant as the Best Airport in India & South Asia, and its GMR parent, Hyderabad International Airport, was named Best Airport Staff Service in India & South Asia. Bangalore International Airport won the award for Best Regional Airport in India & South Asia. JW Marriott New Delhi Aerocity was the Best Airport Hotel in India & South Asia.

Crowne Plaza Changi Airport was named World's Best Airport Hotel, for the ninth time in the awards history; they also took home the award for Best Airport Hotel in Asia.

Baku Heydar Aliyev Airport repeated previous successes, winning awards for Best Airport in Central Asia & CIS and Best Airport Staff Service in Central Asia & CIS. Nursultan Nazarbayev International Airport was, for the third time, declared Best Regional Airport in Central Asia & CIS.

Dallas Fort-Worth Airport was a first-time winner in the World Airport Awards, after it was recognised as providing the Best Airport Staff Service in North America.

Melbourne Airport was named Best Airport in Australia & Pacific for the second successive year; they were joined at the ceremony by Adelaide Airport, which received the award for Best Regional Airport in Australia & Pacific. Perth Airport accepted the Best Airport Staff Service in Australia & Pacific award. ➔



Helicopters are here to stay

AIRBUS HELICOPTERS

For some years the urban air mobility sector has targeted this year's Paris Summer Olympic Games as the time and place for their industry to move from concepts to operations by flying patrons from the banks of the Seine to the various games venues. **Michael Doran** reports.

THAT IDEA SPRUNG TO LIFE AT THE 2019 PARIS AIRSHOW but five years later there is only one OEM, China's EHang, that has managed to produce an aircraft that has gained a type certificate despite the millions of dollars raised and spent in the quest for unmanned aerial vehicles or air taxis.

While the attention and publicity are focused elsewhere the rotary wing helicopter sector keeps working away across multiple sectors and environments, operating missions as diverse as executive transport, firefighting, law enforcement, emergency medical (EMS), offshore energy support and search and rescue.

The reality is that helicopters and urban air mobility (UAM) platforms are not in competition but are complementary aircraft that perform vastly different functions, although there is overlap at the margins for both to coexist in a fleet. It was not by chance that the helicopter sector pretty much sailed through the pandemic and there is no reason to think they will not continue to be around for decades to come.

As the leading original equipment manufacturer (OEM) Airbus is an excellent barometer of the health of the rotary industry, particularly as it straddles both conventional rotary wing aircraft and

► *The Hong Kong Government Flying Service relies on helicopters like the Airbus H175.*

UAM platforms with its CityAirbus NextGen eVTOL (electric vertical take-off and landing) vehicle.

In 2023 Airbus booked orders for 410 helicopters from 179 customers in 47 countries coming from a steady market recovery with strong performance in the light twin and medium twin engine aircraft. It delivered 346 helicopters which gave it a 54 percent share of the global civil and parapublic market.

Airbus Helicopters CEO Bruno Even said the 2023 orders was an increase bordering 10 percent compared to 2022, and it highlights stable growth despite the ongoing global context of inflation and geopolitical instability. "It's also a testament to the versatility of our products on both the civil and military market and I'd like to thank our customers for continuing to entrust their critical missions to Airbus Helicopters."

In 2023 Airbus earned consolidated revenue of €65.4 billion (\$70 billion) and adjusted earnings before interest and tax (EBIT) of €5.8 billion (\$6.2 billion) while Airbus Helicopters posted revenue of €7.4 billion (\$7.9 billion) and adjusted EBIT of €735 million (\$786 million). At the end of 2023 it had an order backlog of 804 helicopters, compared to 757 at the end of 2022.

At this year's Heli-Expo in the US, Airbus received commitments for 155 aircraft from customers worldwide for a variety of its multi-mission aircraft. The Airbus success highlights how diverse the helicopter sector is and why it has stayed healthy for so long with orders received from across the spectrum of customers and operators. Airbus signed a framework agreement with Saudi Arabia's The Helicopter Company (THC) for up to 120 helicopters of various types, with firm orders for eight H125s for aerial work and tourism and for ten H145s for emergency medical services and corporate transport.

THC has a fleet of close to 50 aircraft, including 25 from Airbus, and last year took delivery of its first ACH160 for Red Sea Global tourism operations, while also using the H125 and H145 to support the Dakar Rally with emergency medical services and other missions.

In March Airbus announced a contract for six H175 aircraft with SKYCO International Financial Leasing, a state-owned enterprise belonging to China's Guangdong Province. The H175s will be deployed by the government for search and rescue, emergency medical services, disaster relief and other public service missions in China.

Australia's largest civil operator of Airbus helicopters is Microflite, which has 20 models of varying types, including the single-engine H120, H125 and H130 and the twin-engine H135 and H145. In February Microflite ordered a second five-bladed H145 to support its growing training, commercial, utility, fire observation and rescue operations.

Microflite is an Airbus-appointed maintenance and pilot training centre and offers type-rating training for the full suite of Airbus single engine and light twin aircraft. It is working with Airbus to advance pilot training in the region through the introduction of a Full Flight Simulator in the next two years.



AIRBUS HELICOPTERS

From its headquarters in Hong Kong the Asian Sky Group (ASG) is a leading Asia-Pacific business and general aviation transaction and consultancy firm. It produces a range of market intelligence reports for fixed and rotary wing aircraft, including the Annual Civil Helicopter Fleet Report.

The latest version of that report shows that at the end of 2023 there were 4,130 civil turbine helicopters operating in the Asia-Pacific region, compared to 4,126 at the end of 2022. The year-on-year (YoY) growth of just four aircraft is the lowest in the last ten years as the region has enjoyed 2.6 percent YoY compound growth since 2014, adding a total of 843 new helicopters.

The report also reinforces the limited impact of the pandemic on the sector as during 2023 there was a decrease in the number of both new deliveries and pre-owned additions compared to 2022. However, there was an increase in the number of deductions by 29 units, of which 53 out of the 178 removed aircraft were either retired or stored.

During 2023 the Asia-Pacific fleet received 62 new and 120 pre-owned helicopters and deducted 178 for a total of 360 changes, compared to 364 in 2022. Airbus holds 41 percent of the market with 1,708 aircraft, followed by Bell at 29 percent and 1,187 aircraft



DAN DYER



BELL

◀ *The Leonardo AW169 is vital transport for China's activities in Antarctica.*

◀ *Australia's NSW Police Force uses the Bell 412 for law enforcement and other emergency missions.*

and Leonardo at 11 percent and 462 helicopters. Sikorsky and MD Helicopter make up the top five with low single-digit shares and of the five only Bell and Sikorsky increased their fleets in 2023.

More than half the fleet (2,221) were single-engine helicopters with 80 percent of those manufactured by Airbus and Bell and mainly used in multi-mission roles, including for VIP, charter and pilot training operations. Medium Twin and Light Twins account for 21 and 18 percent respectively, with the balance made up of Heavy and Super Mediums.

Looking at the individual regions Oceania maintained its position as leader in fleet growth adding 31 helicopters in 2023, while Greater China (-21), Southeast Asia (-11) and South Asia (-5) declined. Australia has the largest fleet with 984 aircraft, followed by Mainland China (707), Japan (679), New Zealand (577), India (263) and South Korea (200).

ASG points out that the dramatic change in Greater China is attributable more to administrative changes than aircraft leaving service. The report said around 10 police helicopters transitioned from civilian to military registrations and fell out of the scope of its report.

The largest operator in China was CITIC Offshore and Marine Helicopters (COHC) with 75 and six Chinese operators accounted for 35 percent of the top 20 operators in Asia-Pacific by fleet size. Multi-mission aircraft made up around 69 percent of the Greater China fleet, with another 20 percent used for emergency medical and search and rescue (SAR) missions.

Airbus holds 36 percent of the market in Greater China, followed closely by Bell and the most popular aircraft were the Airbus H125 and Bell 407 models. China is keen to develop its own aerospace industry and 28 helicopters in the fleet came from Aviation Industry Corporation of China (AVIC), with the AC311 proving the most popular.

Australia's largest operator is McDermott Aviation with a fleet of 39, making it the fifth largest of the major Asia-Pacific operators. Specialising in offshore operations, SAR and EMS missions CHC Helicopters Australia is second largest with 32 aircraft and Babcock



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Bell is the market leader with a 45 percent market share, with the Bell 206 its most favoured choice, while multi-mission aircraft account for more than half the total fleet. Other significant uses include corporate and private transport, offshore operations, emergency and SAR missions.

Japan has the third-largest helicopter fleet in Asia-Pacific with 679, and operates the largest number of EMS, SAR and law enforcement aircraft in the region. Nakanihon Air had the most helicopters operating emergency medical missions while the Japan Coast Guard had the largest SAR fleet in Asia-Pacific.



In commercial aviation Indian airlines are ordering hundreds of new aircraft but given the size of the country its helicopter fleet is relatively small at just 263, adding only one new and four pre-owned aircraft in 2023.

The nation's two largest operators are Pawan Hans and Global Vectra who between them operate 42 of India's 59 helicopters engaged in offshore operations. Airbus and Bell were the two most popular brands with the AS365 and Bell 412 proving the best suited to the needs of the Indian market.

At the end of last year South Korea's operators were using 200 helicopters and had added one new and 14 pre-owned aircraft during the year. The nation's largest operator was HeliKorea which had 19 aircraft with five configured for emergency medical services and 14 used in multi-mission operations.



▲ The Sikorsky S76 is a popular transport helicopter in South Korea.

◀ CHC Helicopters is Australia's second-largest helicopter operator.

Perhaps reflecting those missions, Sikorsky was the most favoured OEM with 57 helicopters operating in South Korea, driven by the S-76. The second largest OEM was Russian Helicopters with 49 aircraft and the medium twin engine KA-32 was the most utilized model in South Korea.

Papua New Guinea is certainly not the largest market with just 86 rotary wing aircraft but it was the fastest growing in 2023 (by percentage), adding two new and nine pre-owned models to its fleet. Bell dominates the national market with more than half of the fleet, and its Bell 212 and Bell 407 are the most popular types in its range.

At the end of 2023 the top 20 commercial helicopter operators in the region had a total of 600 aircraft or 16 percent of the total fleet. China's COHC had the most with 75, followed by Japan's Nakanihon Air (65) and Aero Asahi (63), India's Pawan Hans (44), Australia's McDermott Aviation (39) and China's State Grid GA (33).

With a total of 231 helicopters there were seven Chinese operators in the top 20 accounting for 35 percent of Asia-Pacific's fleet. Japan ranked second with four operators in the top 20 and a fleet of 176 and third placed was Australia with 95 helicopters and three operators in the top echelon.

The ASG report also showed there were 403 government operated non-commercial helicopters in Asia-Pacific, led by Japan with 222 aircraft. The largest fleet was with the Japan National Police (95), followed by Japan Coast Guard (58), Korea Forestry Service (46), Japan Prefectural Air Rescue (42) and Korea National 119 Rescue (29).

The rest of the top 10 included Japan Fire Department (27), China's Ministry of Transport (20), the Government of India (19), Royal Malaysian Police Air Wing (11) and the Hong Kong Government Flying Service (9). ➔

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EXECUJET MRO SERVICES

Business jet MRO in transition

Southeast Asian Business Jet MRO: Developing, elevating standards and building a robust domestic talent pipeline. **Tom King** reports.

AS A REGION, the economies of Southeast Asia are proving to be a robust hedge against the febrile geopolitical crises and global economic worries.

With a young and aspirational population, the Asian region as a whole is home to a burgeoning middle class and is in the midst of a significant once in a generation transfer of wealth, which will see the region's richest families hand over about US\$2.5 trillion in wealth by 2030.

And yet despite the region's robust wealth trajectory, sticky high inflation is seeing individuals and institutions continuing to tighten their financial belts.

At the top end of the wealth pyramid however demand for business jets across Asia shows no sign of slowing down. But even in that elevated sector, luxury in the air has to be cost effective.

Fundamental to supporting the performance and longevity of any business jet is the maintenance, repair, and overhaul (MRO) opera-

◀ *ExecuJet Services MRO in Malaysia recently opened its new and improved facility.*

▶ *Ivan Lim, vice president for Asia at ExecuJet MRO Services*

tions, and as is the case with most industries today, across Asia the business jet MRO offering is also going through its own transition.

An MRO facility's purpose is quite straightforward. It should provide a safe, quality and on time maintenance service at an acceptable and profitable price to its clients.

Driven by a number of factors including rising costs, improved infrastructure, growing domestic demand and rising local talent pools, the traditional MRO hubs of Singapore and Hong Kong are now being challenged by newcomers in Malaysia the Philippines and Perth in Western Australia, who can all match the purpose of their established peers.

MALAYSIAN MRO GETS HEFT

One of the most significant moves in the Southeast Asian business jet MRO space this year is likely to be the unveiling of the new expansive and purpose-built ExecuJet facility at Subang Airport on the fringes of the Malaysian capital Kuala Lumpur.

A wholly owned subsidiary of Dassault Aviation, ExecuJet opened the sprawling 149,500 square foot facility on April 1, 2024.

In an interview with *Asian Aviation* prior to the facility launch, Ivan Lim, regional vice president for Asia at ExecuJet MRO Services, said in committing to the world-class, internationally certified MRO facility, the clean slate presented the company with the opportunity to comprehensively incorporate bespoke features to support MRO activity such as a built-in overhead-crane for aircraft engine changes.

The new 105,000 square foot hangar can accommodate up to 15 medium and large business jets at the same time and the complex includes workshops, storage space, offices for staff and customers, training rooms and rest areas and also includes a number of key environmental and sustainable features.

Lim highlighted that to align with long-term broader sustainability objectives, the incorporation of natural sunlight to reduce electricity dependency, alongside features like rainwater harvesting tanks and space allocated for solar panels, underscores their commitment to environmental responsibility.

Additionally, he said a strategic shift towards the use of battery-powered machinery signalled a proactive approach to reducing the facilities carbon footprint and operational impact.

Lim also delved into the company's engagement with talent acquisition and development, emphasising the importance of training facilities within the new and more spacious environment.

"By investing in training rooms and fostering partnerships with Malaysian educational institutions, ExecuJet MRO is aiming to nurture a skilled and gender diverse workforce in technical roles. This active approach not only reinforces our operational capabilities but also enhances our attractiveness to potential



EXECUJET MRO SERVICES

2024

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METROJET

▲ Gary Dolski, CEO of Metrojet, runs one of the first business aviation companies in Hong Kong.

employees, especially within a younger demographic increasingly concerned about career sustainability and social impact."

Lim said the company not only wants to demonstrate a comprehensive approach to business growth that encompasses operational efficiency but also environmental stewardship and talent cultivation.

The choice of Malaysia for the new MRO hub was an easy one says Lim: "Malaysia has highly skilled and qualified maintenance engineers and technicians because Malaysia as a country has always put a lot of emphasis on making its aviation sector strong."

With the Malaysian ringgit recently falling against the US dollar and its regional Asian peers the cost of doing business in Malaysia might also help ExecuJet carve out more business opportunities. But Lim says, "From an executive perspective, the ringgit value is not an issue as far as we're concerned, as a matter of fact we have been able to get Malaysians working in Singapore and in other countries, to come back to Malaysia and join us."



METROJET



◀ *Metrojet's CEO Gary Dolski and COO Dave Yip say Metrojet has expanded its MRO capabilities in both Clark in the Philippines as well as Hong Kong.*

▼ *A Metrojet technician checking engines.*

Remuneration of staff and benefits is something that they benchmark and regularly calibrate compared against regional peers adds Lim.

The aircraft covered at the ExecuJet Subang MRO facility include those from Dassault Aviation, Bombardier, and Gulfstream.

HONG KONG AND SINGAPORE ARE SOLID, PHILIPPINES IS RISING

According to Metrojet's CEO Gary Dolski and Dave Yip the company's chief operating officer, Metrojet has expanded its MRO capa-

bilities in both Clark in the Philippines as well as Hong Kong and Haite, their joint venture partner in China has expanded its MRO capacity in Dashing Airport in Beijing.

They point out that all these expansions take considerable investment and are supported by a long-term view based on experience and a strong belief that the demand for MRO in the Asian region will continue to grow.

"There is definitely also room in Asia for the OEM's, their authorised service/warranty facility partners as well as non-authorised independent facilities. I have had the pleasure of working for both the OEM's and the independent service provider and have always said that both can work in harmony and that competition benefits everyone," said Dolski.

He adds that he sees "complementary growth" happening in the MRO space. Seletar Airport in Singapore is a GA centric airport which in his opinion is one of the best in the world with solid OEM support and presence.

"Subang in Kuala Lumpur is a close by cost effective alternative with some recent MRO expansion that should benefit from the increasing business jet fleet size based in Singapore and the Southeast Asia region, he says. "I see the Philippines as complementary to Hong Kong (and Singapore) in the same way, which is why we have expanded our MRO and aircraft parking capabilities in our new 7,200sm hangar facility in Clark."

Yip and Dolski agree that The Philippines is very well positioned to serve all of Asia, with the Clark Airport's freeport zone being particularly attractive focusing on the growing GA aircraft market.

"There will remain a need for MRO support in Singapore and Hong Kong as they remain major financial hubs not only in the region but the world, and will continue to attract the UHNWI's, Fortune 500 companies and their aircraft. With the introduction of larger and longer-range aircraft replacing and adding to the existing fleet numbers, capability will need to increase and in a cost-effective manner," says Yip. "We are fortunate in that we are seeing significant MRO manhour growth in both Clark and Hong Kong post covid with many clients electing to stay in region for maintenance rather than flying to facilities in North America or Europe."

Yip says his team has responded by increasing capabilities in both locations. "Savings can be in the six digits when taking into consideration fuel, cycle, crew, and program flight hours," he adds.

Keen to establish a sustainable pipeline of talent for their business, both Dolski and Yip are advisory board members at the Hong Kong Polytechnic University where they support the development of engineering students with the aim of guiding them into business aviation careers.

PERTH AN AMBITIOUS OUTLIER

Sitting in the same timezone as much of Asia and a short flight away from Indonesia, Perth in Western Australia is also emerging as another potential MRO destination disruptor for Asian but predominantly Indonesian business jet operators.



Grant Ingall, regional vice president for Australasia at ExecuJet MRO services, says the Perth operation is continuing to see strong demand from Asian based customers including Indonesia for base maintenance on the Embraer 135/ Legacy 600 series of aircraft.

“Perth’s location is much closer to Asia than our Sydney or Melbourne bases so it reduces ferry times by three to four hours each way. Our Sydney and Melbourne facility can also do base maintenance on Embraer aircraft but having Perth as an option increases slot availability for our customers.”

Ingall says that on Embraer work from Indonesia over the past few years they have been averaging close to one heavy inspection per quarter and they have also supported a number of Hawker and Gulfstream aircraft from Indonesia. “We have been expanding our workforce in Perth and investing in training, including training to have engineers type certified on Embraer aircraft. We also have the advantage of being a MRO network, which means we have the option to supplement staffing from the rest of the network to get us through peak periods or for specialised coverage. We continue to train personnel and invest in tooling to support any new models for the OEMs we represent as a service centre, being Dassault, Embraer and Gulfstream, and we are continuously looking for opportunities to expand.”

DOWNSIZING, YES AND NO

With expenditure being one of the driving forces behind business jet MRO changes, for both the providers and the users of the services, is this translating into a trend of business jet owners or operators “downsizing” their aircraft, perhaps shifting away from larger-cabin jets to smaller alternatives?

According to Carlos Brana executive vice president of civil aviation at Dassault Aviation, he is seeing more existing Falcon operators trade up to larger, longer-range aircraft after gaining experience with smaller aircraft.

“Customers typically trade up in a desire for more range. Larger jets such as the new Falcon 6X with 5,500 nm range can carry more passengers in more comfort, allowing them to be more productive en-route and more rested at the destination. They also gain the latest technology in terms of advanced flight decks, improved pressurization, and more efficient engines,” says Brana.

“Although we barely see downsizing in our segment of the market, when it happens, it is linked to the need to adapt the aircraft to the usage of the passenger rather than due to an economic move,” he adds.

In addressing the concerns of next generation business jet users driven to downsize by sustainability concerns, Brana says they are more likely to buy a more modern aircraft, as the latest generation of engines provide better fuel efficiency. On the Falcon 10X, now in development, he points out they will be able to use 100 percent sustainable aviation fuel.

MetroJet’s Dolski and Yip said they did not see a firm trend towards a move to smaller aircraft, however they pointed out that there is some “rightsizing” going on.



▲ Grant Ingall, regional vice president for Australasia at ExecuJet MRO services.

“With the next generation aircraft, we see the OEM’s pushing range to 8,000 nm which is really what is needed in today’s global world, especially based out of Asia. This requirement is also amplified by the numerous world conflicts which result in the need to circumnavigate around “no fly zones” adding to the distance and flight time,” says Dolski.

“The aircraft cabin configuration is also changing with many of the OEM’s placing in a standard crew rest area in the build versus as an option to accommodate the longer distance requirements,” he adds.

Yip points out that they are still seeing an exodus of aircraft from the region in mainland China and Hong Kong, a trend that is reversing in other parts of Southeast Asia. He believes that they will see a plateau in aircraft departures by the end of this year with a slow net positive trend commencing in 2025.

He also sees an increase in the medium and smaller class of aircraft as the next generation and mature market owners will be more focused on their specific flight profiles, whereas before there was a leaning towards having a ramp presence.

“There will be more of a move towards “this is what I really need,” be it less space or more local short distance flying. If I only need to cross the pond once or twice a year, I can always charter a larger aircraft and fly a more purpose-built aircraft for US\$30 million less.”

“With the next generation of UHNW’s as well as those that have sold their aircraft for whatever reason, we are seeing an increase in charter and this will in time translate to preowned aircraft transactions, followed by new aircraft acquisition,” said Yip. ➔



PRATT & WHITNEY

Pratt & Whitney continues GTF work

From dream debut to recurring nightmare, P&W's troublesome GTF engines have caused major disruption for Indian operators and others. But the engine maker says it's making progress as **Shelley Vishwajeet** and **Matt Driskill** report.

ON 11 MARCH, 2016, IndiGo, India's largest airline, became the world's second and Asia's first recipient of A320neo aircraft fitted with Pratt & Whitney's ground breaking GTF (Geared Turbofan) engine, officially called PW1000G series. By order book, IndiGo was then the biggest customer of A320neos to be fitted with these GTF engines. With GTF powered planes, IndiGo aspired to further cement its position as India's top operator.

At the time and as is the case now, Airbus was offering two engine options for Airbus320neo. One, of course, was Pratt & Whitney's GTF and the other was the CFM LEAP engine, developed by CFM International, a 50:50 joint venture between GE Aerospace

▲ Pratt & Whitney technicians in Singapore inspect a GTF engine.

and Safran Aircraft Engines. On almost all counts what matter the most to an operator is fuel efficiency, carbon emissions and others. The choice of the GTF over LEAP was a no-brainer as the GTF claimed far superior fuel efficiency compared to LEAP thanks to its higher bypass ratio and much publicised geared turbofan incorporation.

As for Indian operators, the biggest commercial and viability factor still remains the cost of the GTF as it constitutes anywhere between 35-40 percent of operating costs.

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The now grounded Go First (earlier GoAir) had followed IndiGo in ordering the GTF. In 2011, its order of 144 Airbus A320neo planes selected Pratt & Whitney engines for the first 72 planes.

But both operators had not foreseen that a time-tested engine maker like Pratt & Whitney would provide them with an engine that will lead to recurring teething problems and would eventually play havoc with their flight plans and commercial projections.

At present, Pratt & Whitney engines power over 600 of India's aircraft in commercial, military and regional aviation. Apart from the Airbus 320neo, the company's engines power C-17s, C-295s, ATR-42s and 72s, IAF's 75 Pilatus PC-7 MK II trainers, and NAL-SARAS MKI, the first Indian multi-purpose civilian aircraft in the light transport aircraft category designed by National Aerospace Laboratories.



▲ Pratt & Whitney says it's making good progress on getting planes back in the air following GTF inspections.

Not long after the Airbus A320neo fitted with GTF engines took to the Indian skies, rumours of frequent engine snags started to circulate. Things became really scary around 2019 when many of IndiGo and Go First's GTF-powered aircraft suffered serious mid-air problems including engine shutdowns. Initially, both operators, the Indian regulator DGCA and even Pratt & Whitney played down the incidents. Pratt & Whitney said part of the problem was India's hot and polluted air. Eventually, Indian regulators ordered mandatory checks of all aircraft fitted with GTF engines and also instructed airlines to replace the entire engine if it had done 3,000 flight hours or more.

IndiGo realised that fixing the GTF engines was a long-term problem that could disrupt its future plans. So at the 2019 Paris Air Show, IndiGo dropped Pratt & Whitney and opted for CFM, announcing an order worth US\$20 billion for engines for 280 Airbus A320neos and A321neos. Go First, however, chose to stay put with Pratt & Whitney as it gave a nod for its remaining order of 72 Airbus planes to be fitted with GTF engines. This is a decision it would later regret.

Go First has blamed the failures of GTF engines as the primary reason for its shutdown, a claim strongly refuted by Pratt & Whitney. The question remains as to how IndiGo, which has around 135 aircraft fitted with GTF engines, will be able to work its way through the GTF problem.

In July 2023, RTX Corp, which owns Pratt & Whitney, announced a "rare condition" of powdered metal contamination used in the manufacturing process that could potentially lead to micro-cracks in engine blades. This admission implied that about 600 or more of over 3,000 engines built between 2015 and 2021 for use on the A320neo/A321neo must be brought back to the shop and inspected.

Even before the news broke, IndiGo had already grounded nearly 40 of its planes. In a press statement later, the airline stated that, "it expected that between 34 to 38 of its planes would have to be grounded for engine inspections in the January to March 2024 quarter. These groundings will be over and above the current aircraft which are grounded. Current estimates put the number at around 90 planes that would remain grounded through 2024 as Pratt & Whitney takes around 250-300 days to complete the engine inspection.

Chris Calio, president and CEO of RTX, said in a recent earnings call, that "Our top priority continues to be executing on our fleet management plans, and both the financial and operational outlook remain consistent with our call last October...Pratt has issued the necessary service bulletins and service instructions to operators, which are entirely consistent with our underlying financial and operational assumptions that we previously communicated. The FAA is in the process of drafting the corresponding airworthiness directives, which we expect to be issued within the next month or so. And just as a reminder, it is common practice for a fleet management plan to be communicated through multiple service bulletins and airworthiness directives to address different engine models, compliance times, or components and sections of the engine...", he said.

"You'll recall our focus is on ramping up production of HPT and HPC disks to support both OE and MRO deliveries. We've made solid progress here as well...Today, all OE GTF engines being delivered to our customers final assembly lines contain disks produced from powdered metal manufactured after Q3 2021 and have full certified lives," Calio said. "On the GTF MRO front, we have begun installing full life disks during certain shop visits. And the number of engines receiving full-life disks in MRO will increase throughout the year as we continue to ramp up production of these parts. Our estimated wing-to-wing turnaround time remains consistent with our prior guidance. Pratt grew GTF MRO output by almost 30 percent year over year in 2023, while also making investments in additional shops, test cell capacity, and repair capability to support even more growth in 2024. With respect to the number of AOGs, we continue to expect the roughly 350 on average that we previously guided. However, we will likely see a lower peak level than previously anticipated due to the timing of the AD issuance and proactive fleet management by our customers. Additionally, our conversations with customers continue to progress." →



Twin engines of growth

Asian Aviation Editor **Matt Driskill** talks to Alan Lim, a director at Alton Aviation Consultancy in Singapore, about the industry's growth in Asia and which countries are coming back to the 'new normal'.

AAV: *Your company recently issued a new white paper on the growth of aviation in Asia. You and your co-authors talked about China and India being the twin engines of growth. And also, where does South-east Asia fit into that equation? I think you mentioned in the report that Indonesia was sort of slowing things down. And China actually hasn't really come back full. Is that right?*

AL: That's correct. When we look at starting with the twin engines of

growth that you mentioned, we definitely cannot ignore China and India. Together, they contribute to more than a third of the world's population, something like 2.8 billion this year. If we look at air traffic demand, China in particular contributes about a quarter of the total international traffic and about a 10th of total global domestic traffic. So, when we think about these two countries, China is the big market in the world today. But it's facing issues of a declining population,

slowing economy, while India, on the other hand is going the other way. While the fact remains that China's a market that we can't ignore, India is fast-growing, but still much smaller compared to China. So it is definitely one to watch in the future. There's something like 2,000 aircraft that have been placed on order by different airlines in India over the coming years to cater to this demand. China, given the current size, even though the trajectory is sort of flattening a little bit, will still remain important when we talk about their contributions to air traffic demand.

You talked about Southeast Asia. It is a very dynamic region that holds a lot of promise in terms of a growth story. But when we compare it against India, when we compare it against China, the contribution to global air traffic demand is not as large as those two. It still remains an important part of the conversation, but the contribution will be much less when compared to the two twin engines of growth. Southeast Asia in 2023 only recovered to about 80 percent of its pre-pandemic seat capacity, but is projected to return to that 2019 level this year. And if we look further ahead, once it reaches this pre-pandemic level, the growth story is promising.

If we look at the region, positives to take away is that there's a very strong macroeconomic growth that's been projected for many of the developing markets in this region. You have a growing middle class, you have rapid urbanisation, you have a lot of these countries putting a lot of emphasis on developing the tourism sectors, and that really helps to drive and contribute to air traffic demand. Primarily we also see improving intra-regional connectivity that is occurring between these different countries to cater to this growth in air traffic demand. Also we see a very significant increase and significant growth in e-commerce demand, which then contributes to, a lot of freight demand that we'll see in the region.

AAV: *Sticking with Southeast Asia, Thailand has been talking about visa-free travel within ASEAN. Do you think something like that, an ASEAN-wide visa, would ever come into play?*

AL: What they're looking at is trying to develop this joint visa programme and trying to create a similar Schengen-type visa to that we see in the EU with something like six different other countries. It's an interesting proposal. What we see in the past, I would say 12 to 18 months. A lot of countries in Southeast Asia have recognised that there's been a bit of inertia in bringing back tourists to the respective countries and each of them have launched a whole slew of bilateral visa-free initiatives with India and China trying to jumpstart the tourism sector after the pandemic. It's definitely trying to create a multilateral six-way agreement. Obviously, it's a lot more challenging than having multiple bilateral agreements. There are a lot more considerations, there are a lot more interests to be aligned, so it's definitely going to be much more challenging than trying to forge multiple bilateral deals. What we probably will see, at least in the near term, is bilateral agreements being quite common. Region-wide multilateral agreements, it'll probably take a lot longer to be negotiated.



▲ *Some countries in ASEAN want to implement a region-wide visa for travellers.*

► *COMAC is making progress with its C919, but it's still not a competitor with Boeing or Airbus.*

AAV: *In the white paper you also talked about geopolitics. Russian airspace is closed to a lot of countries, not just the US, but others. You've got China in the US at odds over different things. So, we've got those challenges. Let's talk about the challenges of the region.*

AL: Sure. I think you're right, the closure of Russian airspace has affected a lot of airlines, particularly those that supply the trans-Pacific, as well as the Asia-Europe type of operations. Airlines who can't really use Russian airspace anymore have been forced to reroute just to avoid Russian airspace entirely. It was Finnair that estimated that leads to a 10-40 percent increase in length of flying through this route. What it means is that you're going to have additional costs, additional costs mean higher prices, higher prices mean less demand. As a result, we see some of these airlines having to reduce their flight schedules because of these geopolitical events.

China and US, are the big topics...despite some of the tensions that have been going on, recently both US and China have agreed to make it a priority to restore flights between the two countries back to pre-pandemic levels. I think we're not there yet in terms of

Airlines who can't really use Russian airspace anymore have been forced to reroute just to avoid Russian airspace entirely. It was Finnair that estimated that leads to a 10-40 percent increase in length of flying through this route.

the capacity, but that's primarily a function of a lack of demand to support this increase in capacity.

Your second question was about challenges in the region. Obviously, the usual things of higher fuel costs, higher financing costs, strength of the US dollar. Those are macroeconomic challenges that obviously a lot of airlines in Asia are facing. But one of the more critical issues as well as resource shortages, not only in manpower, which we've heard quite frequently over the past 24 months, but also in aircraft. Manpower shortages are common not only in airlines, but also in airports. We see a struggle by operators to get enough people to run their operations and what that means is that it takes a longer time to get things done. Aircraft turnarounds might take a little bit longer, or it might be the case where airlines are constrained in launching new flights from a particular airport just because the airport is unable to handle the additional flight demand or additional flight capacity that's being added. On the other hand, the big question today is also about the shortage of aircraft. Through the

pandemic, a lot of airlines have retired aircraft and reduced their fleet size to tide them over. But now, demand has come back in force. We are almost at pre-pandemic levels in terms of both capacity and demand. But the thing is aircraft that have been retired are not coming back.

AAV: *Let's talk about Boeing a little bit because Boeing has been slowed down because of safety reasons, production issues and things like that. Let's pick back up on the shortage of aircraft that you were talking about.*

AL: The shortage of aircraft is the primary problem in the industry at the moment. We talked about how aircraft are being retired, so need new aircraft coming in. And as you correctly mentioned, Boeing's... Well, Boeing has a different set of issues, but if we first talk about the OEMs in particular. Many of them are struggling to ramp up production back to pre-pandemic levels and really get back on track. You can see backlogs for narrowbody aircraft. If you place an order now, the earliest you can get either an A320 or a MAX is probably the early to mid-part of the next decade. And if you're talking about widebodies, it's probably the later part of this decade. So it's a fairly long wait for new aircraft. The issues that Boeing is facing are a bit more intense, a bit more serious. I read a report a couple of days ago that while the FAA has told Boeing to cap their MAX production at about 38 a month, I think with some of the additional checks that they're placing on the production line at the moment, that number, the actual monthly production number has probably gone down quite significantly. So what does this mean for airlines? The key point is airlines are then a bit constrained. They have their growth plans, they see demand coming back and they want to launch additional flights, but without the additional aircraft, their hands are a bit tied in that regard. What we've seen is that airlines have started to do a few things. One is they'll still try and hang onto some of the older aircraft that they may own or lease a little bit longer. But they've also taken to going to the secondary market to look for other aircraft that may be available for lease to support the growth plans in order to be able to at least execute on all the strategies that they've put in place right after COVID. But of course, this is not a full solution. We have seen airlines that are been forced to rationalise their networks by cutting the economically non-viable routes or even some economically viable routes.

AAV: *While we're talking about manufacturers and OEMs, do you think that COMAC is ever going to be a real competitor with Boeing or Airbus?*

AL: That was the question on everyone's minds during the Singapore Air Show. There is a camp that thinks that given the challenges that Airbus and Boeing are facing now in actually delivering aircraft, there is a certain conversation to be had on whether COMAC can actually plug this gap. Are they a viable competitor? Executives of both Airbus and Boeing have kind of weighed in on this issue. But from our perspective, you're right in that they have quite some orders in their



► *UAM vehicles could soon take to the skies in Asia, but some hurdles remain with regulators and infrastructure.*

order book at the moment but these are predominantly with Chinese airlines. To be able to start competing with Airbus and Boeing, one of the key things that they need to do is to get certified with the FAA and EASA in order to get a bit more broader acceptance outside of Chinese operators.

AAV: *We talked about airports, which are not my favourite part of the aviation experience. I've had problems with automation recently. People are building new airports. Give us an idea of how the building is going and what's going on with that.*

AL: The one country we can't ignore is India, right? If you look at the penetration of airports compared to its population, it's far below some of the developed markets and obviously the US and even China. Through the efforts of the Indian government and various private companies, India has built something like 75 airports in the past decade and the total count of airports in India is currently about 150. They're looking to expand this number to about 220 in the next five to seven years to support that growth story, which I spoke about earlier. Within Asia-Pacific itself there are a lot of countries that are really scaling up on developing their airport infrastructure to really cope with this projected growth in demand of air traffic. Asia-Pacific in our forecast is slated to grow the fastest among all the other regions in the world in terms of air traffic demand and or the reasons I mentioned earlier. You've got a growing population, rising economic growth, growing middle class. These are all very strong contributory factors to this market. There are industry estimates saying that there's about 400 plus new airport projects around the world, and more than a third of them are actually located in Asia-Pacific.

If we look around Southeast Asia, you've got greenfield airports such as Bangkok's U-Tapao Airport, Manila's new Bulacan Airport on top of the NAIA modernisation that went out recently. Jakarta has a new capital airport coming up. In Ho Chi Minh City we have the new Long Thanh airport as well. So all the neighbours in Southeast Asia are very, very busy building new airports. On the other hand, brownfield airport and airport expansion projects are still going on. Bangkok's Suvarnabhumi is looking to expand the capacity of the airport. Changi Singapore has its T5. We talked about Manila previously. It's a very dynamic environment in Southeast Asia, and we're going to see a lot more of these projects coming in, I would say over the next five, 10, even 15 years, to really support this growth in Asia-Pacific.

AAV: *Let's move on to another subject. Advanced air mobility, urban air mobility, flying taxis, whatever. You've got Volocopter, EHang, Wisk Air. A all these different companies. To me, it seems like a solution in search of a problem. Helicopters seem to do a fine job and they're not going to be going away anytime soon. Do you think advanced air mobility is going to be a reality as soon as people think?*



AL: With AAM, there are few angles to consider. You're right in that helicopters work just fine and are not going to be fully replaced with AAM. But there are three angles that are coming in. One is sustainability. How do you meet net-zero ambitions? AAM aims to create this new class of aircraft powered by new propulsion technologies. Electric, hybrid electric, hydrogen electric even. And the aim is being able to replace fossil fuel powered aircraft starting with smaller aircraft like helicopters and business aviation aircraft before moving on larger aircraft. We talk about also unlocking new-use cases. With AAM, the idea is that yes, you can replace some of the current helicopters or aircraft performing tourism, oil and gas shuttles. But also they can potentially open up new markets where you can start operating a bit more closely within the urban environment such as airport shuttles across some of the congested transportation networks that are commonplace in cities around Southeast Asia.

To answer your question on whether it'll become a reality. Our belief is that it will become a reality. The only question is at what scale. There are some reports out there which paint a very rosy and optimistic picture that we will end up having a Jetsons-type air taxi environment in the future. But if we look at the developments today from a technology perspective, from what the different OEMs are doing, we will probably see some limited operations in the next two years on a very limited set of use cases and we'll see that gradually expand across the next five to 10 years. The reason for this assessment really comes from the fact that there are a lot of hurdles that still have to be overcome from a production, regulatory and infrastructure perspective. More importantly, it's about how do you overcome the social acceptance hurdle? How does the man in the street get used to seeing these new class of vehicles just flying overhead or flying very close to residential areas which is not something that we've traditionally seen to date? Again, a lot of hurdles to overcome, but I there is that push to make it a reality. ➔

AAV Events Calendar

Send event submissions to: info@asianaviation.com

22-26 JULY 2024

Farnborough Airshow UK
+44 7400 123 456

29-30 AUGUST 2024

APATS Singapore
events@halldale.com

24-26 SEPTEMBER 2024

MRO Asia-Pacific Singapore
events@aviationweek.com

22-24 OCTOBER 2024

MRO Europe Barcelona
events@aviationweek.com

13-14 NOVEMBER 2024

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