



SHOW BUSINESS



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Investment boost for Middle East maintenance market **EMIRATES MRO TALES**

Emirates Airline announced a near billion-dollar investment to grow its engineering activities with a new million square metre MRO complex here at Dubai World Central.

The facility is thought to be the largest and most advanced of its kind to be operated by any airline, adding a boost to Dubai's world-class aviation infrastructure.

With the Middle East MRO market projected to overtake China in the next decade according to Aviation Week's 2024 Commercial MRO Forecast, the region aims to capture some 11.5 per cent of global demand. Airlines and

independent engineering providers are expanding facilities and human resource to meet the demand – much of it fuelled by further aircraft orders from Gulf and Turkish carriers.

Emirates chairman and CEO, Sheikh Ahmed bin Saeed Al Maktoum said: "This significant investment signals our confidence in the future growth of Emirates and the aviation sector.

"The new facility will enable Emirates to be entirely self-sufficient when it comes to MRO and all engineering requirements for our fleet. It gives us operational stability and flexibility, and

quality assurance. "Emirates' new engineering facility will also play a key role as a centre of excellence, attracting the involvement of global players across the aviation supply chain. It'll create thousands of skilled technical jobs and add value to Dubai's economy," he said.

The complex will be equipped to handle specialist aircraft engineering services – from routine aircraft checks to bespoke paint jobs, light to heavy maintenance programmes, engine repair and testing, to full cabin interior fit-outs and aircraft conversions.

Designed to meet the airline's own

fleet growth through to 2040, it will offer spare capacity to other airline operators, it said.

Independent providers are also working alongside the Dubai carrier. Yesterday Jordan's Joramco – part of the Dubai Aerospace Enterprise (DAE) – signed a deal to extend its 777 support to Emirates.

Joramco is growing its facilities and plans include an Airbus A380 hangar to also meet Emirates and other operators demand for the superjumbo scheduled maintenance demand.

Work on the site will begin in 2024 and with the first phase completed in 2027. ▲



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Customer service key to Saudia-Riyadh Air team-up

A significant strategic co-operation deal signed by Saudi Arabia's legacy player Saudia and upstart Riyadh Air here at the show has been "driven by the needs of customers", Tony Douglas, chief executive of Riyadh Air said.

The MOU between the carriers includes a codeshare and interline agreement and co-operation between the loyalty programmes

of both carriers. It is the first major agreement between the two airlines and lays the foundation for further co-operation in the future.

It puts the two networks of the carriers together, enabling them to jointly offer customers more than 200 destinations from their hubs in Jeddah and Riyadh by 2030.

Describing the move as a

"historic moment", Saudia CEO Captain Ibrahim Koshy said the co-operation will "positively disrupt the industry as a whole and so we are proud to sign this MOU that signifies our partnership intent."

It was always part of the plan for the two airlines to partner in this way, explained Douglas. "It could not operate in any other way," he

noted. "It supports the ecosystem of the Kingdom when it comes to aviation as a whole."

The agreement is expected to be just the first of many codeshare deals signed by Riyadh Air over the coming months as it seeks to extend its reach.

The carrier intends to begin operating in the second quarter of 2025.

EgyptAir orders 10 Airbus A350-900s

EgyptAir unveiled the second stage of its major expansion programme on Tuesday as it announced an order for 10 Airbus A350-900s to bolster its long-haul

fleet. The signing came the day after the Egyptian flag-carrier announced plans to lease 18 Boeing 737-8s.

In both cases, the new orders

will increase the fleet rather than replace existing aircraft, as the company seeks to scale up from its current 91 aircraft to 125 by 2028.

Announcing the Airbus order, EgyptAir Holdings chairman and CEO Yehia Zakaria said that the A350-900s will be delivered between 2025-2027. They will be powered by Rolls-Royce Trent engines.

The internal configuration has not been detailed, but the new twinjets will carry 340 passengers; the A350 can carry between 300-410 passengers, depending on model and cabin layout. Zakaria said the new aircraft would be used on long-haul sectors, including Shanghai and Los Angeles.

The A350-900s will be funded from the company's internal resources. Among EgyptAir's other priorities will be increasing its dedicated freighter fleet, with at least two A330-200s scheduled to be converted to freighters by 2025.

◀ EgyptAir Holdings chairman and CEO Yehia Zakaria (left) and Airbus chief commercial officer Christian Scherer seal the latest deal aimed at expanding the airline's fleet

Meanwhile, Airbus has said that it has reached "an agreement in principle for a significant commercial aircraft order," with Turkish Airlines.

The airframer confirmed the deal on the sidelines of the Dubai Airshow, Aviation Week reported.

The proposed contract is for up to 355 aircraft, 240 of which will be firm, according to Turkish Airlines. In a filing to the Istanbul bourse the airline said that "discussions with Airbus ... are ongoing." If the deal is confirmed, the aircraft will be delivered over 10 years from 2026.

Confirmation of the deal is expected imminently. Turkish is believed to have opted for a combination of A321neos and A350s, with the single-aisle type making up most of the order.

Turkish is planning a major expansion of its fleet to 800 aircraft and is apparently planning to split its commitments between Airbus and Boeing, with the US airframer understood to be lined up to supply the 737 Max, 787 and possibly the 777X, although this deal is thought not to be so advanced as that with Airbus.



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Static Park Entrance / Stand 307
or email ella@aerocomm.aero

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Editorial Alan Dron, Chloe Greenbank,
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Contributors Chuck Grieve, Steve
Nichols, Kaleyesus Bekele
Imagery Ian Billinghamurst,
Jeff Holmes, Grant Pritchard
Design/production Amelia Clark
Sub Editor Steve Nichols

Publisher Mark Brown
mark.brown@timesaerospace.aero
Marketing & circulation
clare.brown@timesaerospace.aero
Display advertising
grant.lee@timesaerospace.aero
Distribution
ethan.cobbing@timesaerospace.aero
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Advertising TIMES
Aerospace Publishing Ltd
3-4 Rumsey House, Locks Hill,
Rochford, Essex SS4 1BB, UK
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▲ NEWS IN BRIEF

Rolls-Royce backs Trent XWB engine

Engine maker Rolls-Royce responded firmly to widely-reported comments by Emirates president Sir Tim Clark about the engines for the latest Airbus A350-1000 aircraft. "The Airbus A350 and Rolls-Royce Trent XWB have proven again and again to be a winning combination," said Ewen McDonald, Rolls-Royce chief customer officer, civil aerospace at the show.

"More than 56 customers have chosen to order and/or operate the aircraft which has set an industry benchmark for efficiency and reliability.

"We have a strong order book pipeline with airlines, such as EVA, Air France KLM and Air India, all selecting a mix of Trent XWB-84 and Trent XWB-97 – so we are confident this product has strong prospects for the future.

"The engine was also recently chosen to power Qantas' 'Project Sunrise' (Sydney to London/New York) – the world's next-longest scheduled flight.

"We also continue to improve and invest in our engines through their life and the XWB-97 on the A350-1000 is no exception. It's a good engine and we'll be continuing to ensure it improves as we look to potentially rolling in some of the new technologies from our UltraFan demonstrator programme," he said.



Ethiopian bags Boeing 737s and 787s

In the latest phase of its fleet renewal and expansion, Ethiopian Airlines placed orders for 20 Boeing 737 Max 8s and 11 787-9s, alongside an interior retrofit programme for its existing fleet of 787s.

Ethiopian Airlines group CEO Mesfin Tasew stressed that this order volume is "conservative", and more orders will be placed in the "coming years" with both Boeing and Airbus types in contention.

However, the airline will wait on a potential order for the Airbus A220 until issues with its Pratt & Whitney PW1500 engine are "corrected", he added.

The carrier's strategic roadmap sees a fleet of 270 aircraft by 2035, nearly double its current fleet size, he said.

The carrier is seeking several 787-9s from the operating lease market starting in summer 2024 to provide bridge lift. A scarcity of delivery slots is forcing Ethiopian

to turn to interim capacity, and it will "trade between leases and the Boeing options" in its fleet planning in the coming years, explained Tasew.

Yesterday's order includes 21 737 Max 8 and 15 787-9 options. The deliveries of the firm orders will begin in 2026 and continue until 2030.

In more Boeing news, Kazakhstan's SCAT Airlines placed a follow-on order for seven 737 Max 8s.

Top ten! Abelo CEO Stephen Gorman, (left) and ATR's Alexis Vidal celebrate the order for 10 ATR 72-600s



Abelo places order for ATR 72-600s

Specialist turboprop lessor Abelo placed an order for 10 ATR 72-600s, with options for a further 10, at the show yesterday.

The deal for the first 10 aircraft, scheduled to be firmed up by the Dublin-based lessor by the end of the year, is the second batch of the Franco-Italian turboprop that Abelo has bought. It placed the first order in its portfolio – for 10 ATR 42-600 STOL and 10 ATR 72-600s – on its creation in June 2022. Including yesterday's deal, it

now has 58 aircraft in its portfolio, around 60 per cent of them ATRs.

Abelo CEO Stephen Gorman said that the company has so far placed four of the first 20 aircraft with customers, including the first example of the short take-off and landing (STOL) version. He added that yesterday's order had been placed sooner than anticipated because of market demand. ATR senior vice-president commercial, Alexis Vidal, said the aircraft would be delivered from 2024-2028.



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THE EAGLE EXPANDED... *Boeing's F-15QA soars over competition*

Boeing has borrowed a Qatar Emiri Air Force F-15QA to serve as a demonstrator for its Advanced Eagle family at the Dubai Air Show.

The Advanced Eagle was evolved from the F-15K SLAM Eagle and the F-15SG for Singapore. The F-15SA was the first variant with the new fly-by-wire (FBW) flight control system and BAE Systems AN/ALQ-250 Eagle passive active warning survivability system (EPAWSS), and is in service in Saudi Arabia, while the F-15QA for Qatar introduced a large area display in the cockpit, and the AN/APG-82(V)1 active electronically scanned array (AESA) radar.

Boeing's current marketing

efforts are focused on the newer F-15EX Eagle II, derived from the F-15QA for the US Air Force, as both a new build aircraft and as an upgrade configuration, principally targeting existing Eagle customers.

Indonesia has signed a non-binding memorandum of understanding for 24 F-15EXs while Israel has formally requested 25 F-15EX fighters, although foreign military sales of the F-15EX are currently understood to be on hold due to the ongoing Gaza conflict.

Boeing has recently

▼
The F-15QA on loan from Qatar Emiri Air Force



delivered the third F-15EX to the US Air Force – the first pair having been delivered in 2021. Three further

test aircraft are expected to be delivered this year, with the first two for the Air National Guard following early next year.

Though it is now 51 years since McDonnell Douglas chief experimental test Pilot Irving L. Burrows made the maiden flight of the first prototype YF-15A Eagle on 27 July 1972, the Eagle remains competitive, with its very high performance now complemented by

improved high alpha handling and state-of-the-art sensors, avionics and defensive aids systems. And the F-15 remains capable of delivering a heavy payload over a long range.

Boeing believes that low observability or 'stealth' may no longer be required for a combat aircraft to be relevant.

"Electronic Warfare is going to change the discussion," said Rob Novotny, a former F-15 pilot and now Boeing's F-15 business development executive director. Novotny described the AN/ALQ-250 EPAWSS as a living adaptive electronic warfare system that provides significant electronic attack capabilities.

Thales ramps up for hub security

With ongoing passenger growth anticipated across the industry, Thales is ramping up efforts to ensure safe, secure, sustainable operations for air transport hubs. It has agreed a strategic framework with Sanad, a wholly-owned subsidiary of Abu Dhabi-based Mubadala Investment Company.

The agreement was signed during the show yesterday and will

leverage the expertise of both companies to deliver world-class services for airport security and safety systems as well as maintenance services across the Middle East and Africa region.

Speaking at the show, Yannick Assouad, executive VP Thales Avionics, said the agreement with Sanad will enable the two companies to explore how to ensure more

seamless operations in terms of passenger flow, as well as safer operations on the apron and runway.

Building on the foundation of a memorandum of understanding signed by the two companies in 2022, the latest agreement will see Thales lead on designing and building systems to enhance airport safety and security systems, as well as the passenger experience, by deploying solutions such as its "Fly to Gate" end-to-end airport self-service experience for passengers. Meanwhile, Sanad will spearhead critical tasks such as maintenance, installation and rigorous testing.

With airports in the Middle East projected to invest more than US\$150 billion in capacity expansion over the next 20 years, Thales is poised for further expansion in the region. "We have a strong presence in the UAE where we have our maintenance centre as well as in Saudi Arabia and Doha, but we are working across the region," noted Assouad.



▼
Yannick Assouad, executive VP Thales Avionics

Support for students

With industry workforce challenges an ongoing concern, stakeholders will welcome the agreement between Airbus and Mubadala to provide 12 internship opportunities for Emirati engineering students over the next three years. The students will be hosted and mentored at Airbus' headquarters in Toulouse. Fatima Al Marzooqui, director of portfolio Emiratisation at Mubadala said: "The agreement is a significant milestone as we continue to support the UAE's acceleration and transformation by fostering talent that can thrive in sectors vital for Abu Dhabi's future growth."

Air Arabia powers on

Loyal CFM customer Air Arabia has again selected the company's power plant for its latest single-aisle aircraft order signing for 240 CFM Leap-1A engines to power its 120 Airbus A320neos. The deal includes a multi-year services agreement and spare engines.

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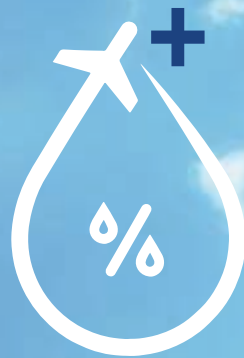
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MTU is seeking more widebody aircraft engine MRO work, said Sami Ben-Kraiem

Widebody shortage fuels MTU drive for engine MRO sales

MTU Maintenance believes engine MRO work on current generation widebodies will become an increasingly fertile market for independent shops.

According to Sami Ben-Kraiem, the MTU Maintenance vice-president, marketing and sales, Middle East and Southeast Asia, the “honeymoon” period for the engine OEMs with long-term airline MRO deals is coming to an end. He said carriers are seeking more “cost-efficient, flexible and tailored” maintenance deals for

their legacy widebody fleets.

The low availability of new widebodies is forcing carriers to retain their fleets for longer than expected, which is opening an MRO opportunity for players such as MTU which is “one of the few providers willing to invest” in supporting these products, said Ben-Kraiem.

The firm expects to sign new engine MRO deals in the coming year and is encouraging airlines to secure shop visit capacity in a constrained market.

▲ NEWS IN BRIEF

AMAC and Mukamalah ink agreement

The show was the venue for a historic agreement between AMAC Aerospace Switzerland and the Mukamalah Aviation Company (previously Saudi Aramco Aviation). Under the agreement the two companies will offer aircraft maintenance services across Saudi Arabia and the wider Gulf region for narrowbody and widebody aircraft. Mukamalah was the first aviation company in Saudi Arabia (and the second in the Middle East), having been established in 1934 as Saudi Aramco Aviation. The company has a fleet of 54 aircraft and helicopters and offers a wide spectrum of aviation services, including flight operations, fixed- and rotary-winged MRO capabilities, and airport and aircraft management services.

Due South...

OEMServices signed an agreement with Mohammed Bin Rashid Aerospace Hub (MBRAH) to establish its new regional support centre at the Dubai South hub. The centre will be completed by Q3 2024. OEMServices will support MBRAH's regional customers, offering key services from supply chain, logistics, and account management to 24/7 technical support.

Joramco signs major deals with Emirates and Gulf Air

It's proving to be a big week of deals for Amman-based MRO company Joramco.

Yesterday alone it had four signings, kicking-off with a new agreement with Emirates to provide additional nose-to-tail Boeing 777 maintenance services until the end of 2025.

Joramco's CEO, Fraser Currie, said: “As part of this new agreement, Joramco will be providing additional Boeing 777 maintenance services for Emirates.”

Another airline it has extended its partnership with this week is Gulf Air after signing an agreement to optimise its aircraft maintenance services.

Captain Waleed Abdul Hameed

Alalawi, Gulf Air CEO said: “This collaboration is a pivotal move in enhancing Gulf Air's maintenance needs to meet the demands of our expanding fleet and the longevity of our fleet at the highest standards.

“This partnership not only signifies an exciting chapter for both companies, but also signifies our joint efforts to shape the future of aircraft maintenance and raise the bar for the aviation industry.”

Currie added: “As part of this new agreement, Joramco will be providing heavy checks for different aircraft types from Gulf Air's fleet for the upcoming four years.”

Joramco also extended its relationship with Proponent by signing a new consignment

agreement. The agreement aims to enhance its operations including increasing spares availability, reducing inventory costs, improving overall turnaround time, and facilitating a stronger focus on core capabilities and streamlined procurement activities.

A new customer was also added to the MRO portfolio of Aero-spheres, a distributor of chemicals, paints, adhesives, sealants, and composites.

“Customers see the real benefits that our consignment programmes can deliver, and we have been able to make purchasing chemicals much more efficient for them,” said Aerospheres group president Paul Thompson.



Adel Al Redha (right) of Emirates and Joramco's Fraser Currie sign a deal for additional Boeing 777 maintenance services

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CAAF/3 IN DUBAI

Paving the Way for Sustainable Aviation Fuel

The upcoming Third International Civil Aviation Organization (ICAO) Conference on Aviation and Alternative Fuels (CAAF/3), slated for November 20-24, 2023, in Dubai, United Arab Emirates.



Marks a pivotal moment in the aviation industry's pursuit of a sustainable and environmentally responsible future.

In a world striving for net-zero carbon emissions, the aviation sector's contribution to approximately 2% of global carbon emissions has brought the urgency to reduce its environmental footprint into sharp focus. With ever-increasing demand for air travel, finding innovative ways to mitigate aviation's environmental impact is paramount.

The decision to host CAAF/3 in the United Arab Emirates underscores the nation's burgeoning influence on the global stage in aviation and sustainability. It underscores the UAE's pivotal role in the global fight against climate change within the aviation sector, extending its leadership beyond regional borders to make a global impact.

CAAF/3 will be the world's largest international gathering of aviation industry leaders. Delegates from 191 countries, comprising decision-makers and officials from the aviation, energy, and environmental sectors, will gather at CAAF/3 to explore solutions that will accelerate the production of clean aviation fuels,

ultimately driving a significant reduction in carbon emissions within the aviation sector.

The significance of this conference cannot be overstated. Its outcomes will serve as a catalyst for real change in the future of civil aviation. The decisions made at CAAF/3 will play a crucial role in advancing the global climate neutrality agenda and achieving sustainable development goals.

The United Arab Emirates took early and pioneering steps in recognizing the importance of sustainability in the aviation sector more than 14 years ago. In 2012, the country launched its Environmental Policy for the civil aviation sector, setting the stage for a robust commitment to reducing the sector's impact on climate change. This initiative involved enforcing environmental laws and regulations that support sustainability and fostering an ethos of environmental consciousness within the UAE's aviation sector.

As we look forward to the Third International Civil Aviation Organization Conference on Aviation and Alternative Fuels (CAAF/3) in Dubai, we see it as a momentous turning point for the global aviation sector.

The UAE's leadership in hosting this conference is a testament to its commitment to a sustainable future for the global aviation industry and its essential role in addressing climate change on a global scale. The momentum generated at CAAF/3 will pave the way for a more environmentally responsible and sustainable aviation industry, bringing us closer to a greener, cleaner future.

▲ NEWS IN BRIEF

Roketsan aims to land its products in the Gulf

Roketsan says it is looking to develop new collaborations with the Gulf nations. Murat Ikin, general manager of Roketsan, said: "We will show strong participation at the Dubai Airshow with a view to expanding our business, not only in the UAE, but also in the other Gulf countries, all of which are important for us."

Roketsan is seeking to expand its 35 years of success under the banner "We rise for tomorrow".

To this end, Roketsan is showcasing its cutting-edge products in a bid to develop new collaborations in the Gulf region.

Among the products being promoted are its mini smart munitions MAM-C, MAM-L and MAM-T, which have made a name for themselves around the world in integration with UCAVs; as well as its CIRIT laser guided missile, ÇAKIR UAV-launched cruise missile, SUGUR air defence missile system, SOM stand-off munition and micro-satellite launching system (MUFS).

Embraer Defence toasts KC-390 successes

Embraer Defence, fresh from seeing its C-390 airlifter selected by the Royal Netherlands (5), Austria (4) and Czech Republic (2), since the last Dubai Airshow, has brought a company demonstrator to this year's event. As Caetano Spuldaro, VP, sales and business development proclaimed: "It's been an amazing year – and are currently going through a strong sales momentum."

The first of 19 C-390s on order by the Brazilian Air Force entered service in September 2019, reaching full operational capability in March 2023. Six have so far been delivered.

The Portuguese Air Force received the first of five aircraft in October this year, which was used to transport equipment and personnel to exercise 'ocean sky' at Gando Air base, Gran Canaria.

The first for Hungary is expected to be delivered next year. Contract negotiations are ongoing with the Royal Netherlands Air Force, Czech Air Force and Austrian Air Force.

While the A-1 AMX and F-5



▲ The Embraer KC-390 has received a major sales boost in recent months

Tiger are certified to air-to-air refuel from the KC-390, the same cannot be said of the Saab Gripen yet, which the Brazilian, Czech Republic and Hungarian air forces operate. Sweden, another Gripen operator are also believed to be looking at the KC-390 solution, to replace its ageing C-130Hs, of which one is a tanker. Clearly, the need to qualify the Gripen to refuel with the KC-390 is a top priority

now, but Embraer were unwilling to confirm when that will happen.

On the Middle East, Spuldaro would only say the company has had a lot of interest, both from the Middle East and Asia, some of which are public, others are not.

"But the good moments that are being created by sales to Europe is now reaching the two regions. They hear that the aircraft is delivering on its promises," he said.



▲ The 2019 Mushak in the static display, is configured with the Garmin system currently being delivered to the Turkish Air Force

Super Mushshak sales bonanza

The Pakistan Aeronautical's Light Aircraft Division is still building and selling Super Mushshaks, as is evident from the example in the static display.

The primary basic trainer has been rejuvenated in recent years, with the integration of a new glass cockpit.

Dynon, Garmin and Genesys systems have all found their way into the 260hp two-seat propeller aircraft, during sales to Pakistan, Qatar, Nigeria and Azerbaijan, that either upgraded their

existing fleets or acquired new aircraft.

More recently, Iraq, Turkey and Saudi Arabia have either ordered new aircraft or upgraded existing examples.

The aircraft in the static display, built in 2019, is configured with the Garmin system that is currently being delivered to the Turkish Air Force.

Half of the 52 aircraft ordered in 2015 are now being used in the basic training role at Izmir-Kaklic to replace the SF 260s that have been operated since the mid-90s.

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▲ NEWS IN BRIEF

Honeywell to provide cockpit tech for AIBOT

Honeywell has been selected by AIBOT to provide its compact fly-by-wire (cFBW) system to support AIBOT's fully-electric vertical take-off and landing (eVTOL) aircraft. The company said the technology will empower the next generation of aircraft avionics and create a sustainable future transportation ecosystem.

Honeywell's lightweight compact cFBW, the size of a paperback book, provides aircraft manufacturers like AIBOT with greater flexibility in aircraft design without compromising power or safety.

The system enables the removal of conventional mechanical linkages controlling the effectors, streamlining maintenance procedures, and reducing costs throughout the entire lifecycle of an aircraft.

It also enables seamless remote operation of the aircraft, translating instructions from the aircraft's operator into flight control commands on the aircraft. The system's envelope-limiting feature guarantees safe operations, making it particularly well-suited for stabilising uniquely designed unmanned vehicles and delivering a stable flying experience.

The AIBOT aircraft is powered by eight electric motors and will accommodate up to six passengers and a pilot. With maximum take-off weight of 7,000 pounds (3,175kg), the aircraft has a target max range of 250 miles and a top cruise speed of 250 mph, making it suitable for short-haul use between cities and metropolitan areas worldwide.

ACI forecasts 86bn passengers in 2023

The year ahead is expected to mark a milestone for global passenger traffic recovery with global passenger volumes in 2023 forecast to reach 8.6bn passengers (94.2 per cent of 2019 levels), according to Airports Council International (ACI) world director general, Luis Felipe de Oliveira.

Speaking at this year's airshow, Oliveira said that airports across the Middle East are for the most part exceeding 2019 figures, but continue to face "headwinds" due to geopolitical tensions and structural market changes, including the growth of ultra low-cost carriers and a shift in passenger demographics.

While much of the boom in passenger traffic can be credited to increasing numbers of leisure and

visiting friends and family (VFR) traffic, "business travel is coming back," said Oliveira.

Significant investment in Saudi's airport and tourism sector will further boost travel across the region.

Oliveira also referenced the recent unveiling of Abu Dhabi's new terminal, as he welcomed the investment in airport infrastructure in the region. Domestic travel is also seeing an increase, with airlines, including Riyadh Air, expanding and diversifying their fleet to better serve the local market.

Across the region sustainability remains a key focus with stakeholders committed to achieving net zero emissions by 2050.

"The willingness to collaborate is there, but greater government

support, investment and financing frameworks are needed to scale SAF production and close the gap between supply and demand," said Oliveira. He also urged airports to shout louder about the efforts they are making to decarbonise operations and change how the industry is perceived.

While growth is forecast across the industry with passenger traffic expected to double over the next 20 years, innovations and investment in technology, including biometrics, will be key to processing passengers more efficiently in line with this growth.

The focus is also on non-aeronautical revenues, as Oliveira underlined that a one per cent increase in passenger traffic will bring a 1.6 per cent increase in non-aeronautical revenues.



▶ Luis Felipe de Oliveira, ACI world director general



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A handbag?

Emirates upcycles aircraft interiors for charity

Emirates is displaying a selection of its limited edition luggage and accessories made from upcycled aircraft interiors, branded as 'Aircrafted by Emirates.'

The range features a selection of suitcases, backpacks, handbags, cardholders, toiletry bags, belts and even shoes – all designed and handmade by Emirates tailors at a dedicated cabin workshop, at Emirates Engineering facility in Dubai.

The materials used to craft the collection have been gathered from the Emirates Airbus A380, as well as from Boeing 777 aircraft.

Materials have been repurposed for the luggage and bags, from aluminium headrests, to leather from couches in the A380 onboard lounge, to seatbelts and even fur from the captain's seat. From 16 retrofitted aircraft, more than 14,000kg of materials have already been recovered.

As the project continues, there is scope to recover up to 270kg of leather and 627kg of seat fabric, per retrofitted aircraft.

Scheduled for sale in 2024 in Emirates Official Stores, all proceeds will be donated to children in need, via the Emirates Airline Foundation.

HEIGHT OF FASHION

Procurement supervisor Irish Ricafort models Emirates sustainability products including a sheepskin bag made from a pilot seat, with a seatbelt as the handle



We care a lot: Alpha Star shows off HEMS capabilities

Riyadh-based private charter airline company Alpha Star Aviation Services is displaying its critical care equipment used to transport patients, including babies under 30 days old, for its air ambulance arm.

"We specialise in providing life sustaining critical care around the clock, mainly regionally within Saudi Arabia," said John Paladino, medevac consultant.

"For example, we fly to rural areas within the Kingdom to pick up babies that need critical care and need to urgently get to a hospital, as well as other patients that need urgent critical support."

Its medevac fleet consists of a Cessna Citation Latitude and Hawker 900 XP – both of which allow for two patients, and an



Airbus A320 which allows for four patients in the rear of the aircraft.

"Additionally, we have an ATR42 and ATR72 that can be converted to hold 10 patients each, specifically for mass-casualty mis-

sions or for larger patients up to 700 pounds. To date, thankfully we have not had to use this capability," said Paladino.

"Our medical staff are required to have a minimum of three years

Alpha Star's Naif Salahaldeen H Alkuraydili, with the company's critical care equipment

prior critical care transport or EMS experience, as well as either the flight paramedic certification from the International Board of Specialty Certification or certified flight registered nurse specialisation."

This year alone Alpha Star air ambulance has made 1,335 medevac flights.

"We are also working with our sister company, The Helicopter Company, where there is a fleet of 18 helicopters. We are the first and only Saudi-based commercial operator to fly helicopter emergency medical services (HEMS) inside Saudi Arabia."

Pavilion highlights Germany's expertise

The German pavilion has been making its impact at the Dubai Air Show for 30 years, and this year it has 26 companies representing Germany, as well as more dotted around the show.

New to its pavilion this year are a number of new companies looking to explore the market in the Gulf, including: BAC Digital Avionics, which designs BT-ANR-headsets with Bluetooth and activew noise reduction (ANR), along with USB-charging adaptor and engine monitoring systems for piston and turbine aircraft.

Funk Avionics is also making its debut, the Bavarian-based company manufacture handheld radios, aircraft radios and transponders, as well as special mission equipment.

Hoffmann Propeller is highlighting its propeller design, while overhaul ground equipment manufacturer Flyer-Truck is displaying one of its towbar-less aircraft tugs. Schulze Consulting Engineers for Airports is at the pavilion.

Back at show for fifth time is technology company Rohde & Schwarz, which is showcasing a range of its products including its CMA radio test set.

"The CMA is a radio communications tester for radio systems that operate in the 100kHz to 3GHz range," explained Usman Shehzad Sethi, regional sales head.

"Its technology is based fully on DSP (digital signal processing) and advanced computing. Intuitive operation and efficient measurement capabilities make the CMA an indispensable tool for performing radio measurements."

Customers for the one-box tester include ATC, the air force, the army and the navy.

"We have a strong customer base here in the Middle East, for example, in Kuwait, and we continue to expand with our products in the region, which is why we are here at the show," said Patrick Brodda, general manager.

SOUND DECISION

Rohde & Schwarz's Usman Shehzad Sethi and Patrick Brodda with the company's CMA radio test set



The 'Jekta' factor

New research revealed at this year's show by Jekta has identified the Middle East, as well as much of Africa, the Arabian Gulf, India and Asia, as having strong operating economics ready to deliver real potential for bringing affordable, accessible regional air mobility.

The Switzerland-based amphibious aircraft manufacturer released its study 'The Jekta Factor' to compare the cost of specific hourly electricity consumption for Jekta's PHA-ZE 100 amphibious

electric flying boat compared with specific hourly Jet A consumption for a turboprop of similar capacity.

"With its creation of artificial islands and tourism potential, the UAE is an exciting, emerging market for us," said CEO George Alafinov, pictured speaking on its stand at the show. "Amphibious aircraft offer the best possible solution to transfer tourists to and from these island locations as there's no need for new infrastructure.

The water is the runway!"



Velos Rotors is at the German pavilion displaying its V3 drone helicopter. It can fly 120km and take up to 10kg in payload. The system is good for ground surveillance and screening

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Steve Nichols writes



BlackSky is demonstrating how its satellite-based imagery and artificial intelligence (AI) is making a big difference to decision-makers around the world

BlackSky is disrupting Earth observation with AI

“We help nations quickly build sovereign space capabilities and gain immediate access to on-demand, real-time, high-frequency imagery and analytics services.”

So says BlackSky chief executive Brian O'Toole (pictured above), who explained: “BlackSky is a space-based, real-time intelligence company. We deliver imagery and AI-driven analytics over the world's most critical and strategic locations, economic assets, and events in under 90 minutes.”

BlackSky said it is disrupting the Earth observation industry by moving from traditional mapping to monitoring. Unlike traditional imaging companies, BlackSky can “stare” at a single location and gather up to 15 hourly images per day from dawn until dusk.

This helps its customers understand and anticipate change for a “decisive strategic advantage to the tactical edge, and act not just fast, but first”.

O'Toole said his company is

trusted by the most demanding U.S. and international government agencies, businesses and organisations all around the world.

“BlackSky owns and operates the industry's most advanced, purpose-built commercial, real-time intelligence system that combines the power of our BlackSky Spectra tasking and analytics software platform and our proprietary high-resolution, low-Earth orbit (LEO) satellite constellation,” he said.

“The constellation is the sensor and communications architecture that delivers space-based data to BlackSky Spectra. Our constellation is optimised for agility and capacity and delivers high revisit imaging and analytic services without a dependency on an individual satellite.

“Today we have 16 satellites in orbit and expect to expand that over the next few years based on customer demand,” he said. “Our satellites also fly in unconventional, inclined orbits and with automated systems built in, the constellation

can deliver time-diverse, rapid-revisit imagery, and analytics.

“BlackSky Spectra is a first-of-its-kind commercial platform that provides dynamic full-spectrum monitoring from space at industry-leading speeds, frequency, and economics. BlackSky Spectra fuses data from BlackSky's constellation and from other third-party sensors to develop the critical insights and analytics that customers require at scale.”

So how does BlackSky use AI for part of its analysis?

“We want our customers to be the first to know about anything that's going on around the world,” O'Toole said. “To do that, you need a fully-automated system that has that kind of cognition built to adapt to a dynamic world.

“So everywhere in the chain, from tasking to downlinking, processing and exploiting the imagery, we look for ways to make it as fast as possible. Because of that, we have a strong dedication to automated systems. Our entire architecture is AI-powered.

“We're a software-first company and we designed the entire system to monitor the most active parts of the globe and that generates a lot of data. Our sweet spot is identifying patterns of activity, anomalies, and critical change that feed strategic and local or tactical mission objectives in real-time.”

The company has plans to extend the range of services on offer.

“Going forward,” he said, “we're doubling down on the success we've had to date in processing our own electro-optical imagery with our own AI. Now, we're processing other forms of imagery, including synthetic aperture radar.

“We're moving toward with a multisensor, multi-data-source approach to keeping track of activities happening around the supply chain, national security and other things that have major impacts on the world.”

While it is not able to mention them by name, BlackSky said it has multiple strategic customers in the Middle East.

So what can visitors expect to see at the show? “Customers can come and participate in a live demonstration of the BlackSky Spectra platform at our stand,” he said. “We're also going to be releasing to the public imagery and analytics every day of the airshow, including short burst imagery video clips of the afternoon flight demonstrations.

“This is our second time at the Dubai airshow and we're very pleased at the interactions we've had.” ▲

◀ This BlackSky image taken in September went viral, garnering more than two million views on X (formerly Twitter) following Ukraine's cruise missile attack on the Sevastopol Shipyard dry docks in occupied Crimea that left a Russian landing ship and submarine in ruins



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AeroGuard selects Archer TX for training

Future pilots in Saudi Arabia will benefit after single- and twin-engine aircraft manufacturer Piper Aircraft confirmed at the U.S. pavilion during the show on Tuesday that AeroGuard Flight Training has placed an order for 90 new Archer TX aircraft.

AeroGuard Flight Training has four campus locations, three in the U.S. and one in Saudi Arabia. The locations train more than 2,000 student pilots, preparing them for their careers at world-leading airlines.

"The name of the game in flight training is capacity and with these additional aircraft, AeroGuard has the capacity to welcome hundreds of new airline cadets to our pilot training programmes, including in Jeddah, Saudi Arabia, where it offers three flight training programmes."



▼ Drew McEwen, VP international and direct sales for Piper, (right) and Joel Davidson, CEO of AeroGuard Flight Training centre

Flydubai signs deal for flight simulator facility



CAE

▲ Ghaith Al Ghaith of Flydubai (left) and CAE's Nick Leontidis celebrate their renewed partnership

Flydubai has signed a deal with CAE to open a US\$56m full-flight simulator and training facility. Construction work has already commenced and the advanced facility is scheduled to be fully operational by January 2025. Ghaith Al Ghaith, Flydubai CEO, said: "The investment in the new training facility reflects our unwavering commitment to operational efficiency and excellence."

"With more than 130 aircraft scheduled for delivery by 2035, the pressure of confirming available training slots with third-party simulator providers is alleviated by having our own simulator facility. The facility will enable us to reduce our training costs, have firm control over our pilot training and retraining schedules and further support our growth trajectory," he said.

The new 38,000 sq. ft facility, located on the grounds of the Flydubai campus, will be home to six simulator bays, offering capacity of more than 43,000 training hours a year.

Nick Leontidis, CAE's group president, civil aviation, said: "We are happy to be building on our longstanding relationship with Flydubai and supporting their growth with the four state-of-the-art Boeing 737 Max full-flight simulators and the flight-training device included in these agreements."

Saudia Academy buys simulators from L3Harris

Saudia Academy and L3Harris signed an agreement yesterday, which will see the academy acquire two AIRSIDESIM ground handling simulators for their training facility.

Airside incidents are expensive with the average cost of an incident involving ground handling equipment costing nearly \$586,000, let alone the delays and intangible costs.

"This agreement is in line with the transformation of the region and will help with the consistency of training air crew," said Ben Swann, general manager, training system of L3Harris at the signing.



▼ Captain Ismael Koshy, CEO of Saudia Academy (left) with Ben Swann, general manager, training system at L3Harris

Boeing is linking up with UAE organisations in efforts to cut the airline industry's emissions

EMISSION POSSIBLE?

SAF: can the world produce enough?

Boeing has believed from early in the sustainability debate that sustainable aviation fuels (SAFs) will make the greatest single contribution to decarbonising the aviation sector, accounting for somewhere between 50-70 per cent of total carbon savings.

Airlines around the world have made it clear that they will buy every drop of sustainable aviation fuel (SAF) that can be produced, even if it costs three to four times more than standard jet fuel. The problem is that they cannot find enough; only minimal amounts of SAF are currently available.

Although several large SAF production plants are due to come online in the next few years, they will still only produce a small percentage of the industry's requirements.

Bringing SAF production plants online will require significant financial investment from governments. "When people think of policy, they think of mandates or incentives, carrots or sticks," said Brian Moran, Boeing's vice president – global sustainability policy and partnerships. "Both can play a role."

Incentives such as tax credits are being used in the US to encourage SAF production, but they could also take other forms, such as loan guarantees to help get the nascent SAF industry off the ground. Alternatively, said Moran, governments could help by shrinking the typically years-long planning cycles surrounding the building of such



In January, Emirates Airline undertook a flight with one Boeing 777 engine operating on 100 per cent SAF

plants. "Making it more efficient is something a government can help with without reaching deep into its pockets," he said.

In recent years, Abu Dhabi-based Etihad Airways has taken part in Boeing's EcoDemonstrator programme, under which the manufacturer uses its aircraft as flying testbeds. In 2020, Etihad used a 787-10 to test methods of reducing emissions through more efficient flightpaths and using SAFs.

Moran applauded both Etihad and Emirates for their participation in experiments to make commercial flying more sustainable; in January this year, for example, Emirates operated a milestone demonstration flight on a Boeing 777-300ER, powering one of its engines with 100 per cent SAF.

Most recently, Boeing has used a 737 MAX in the US to study non-

CO₂ emissions, notably the formation of contrails.

Contrails can have both climate-cooling and climate-warming effects, although research suggests that warming effects predominate.

The 737 performed several test flights, followed by a sensor-equipped NASA Douglas DC-8 to measure the effects of the contrails produced. Data from these flights will take around a year to become public.

One major project with which Boeing has been involved in the UAE has been to investigate the use of oil from the seeds of the Salicornia plant – an indigenous shrub that tolerates salty water and thus does not require the diversion of valuable drinking water supplies – in the creation of SAF. This has been carried out with several local partners, including Khalifa

University and renewable energy company Masdar.

The demonstration phase of the Salicornia plant has been completed "and some of the partners are continuing to explore whether there is a commercial opportunity to scale this," said Moran. "SAF is no longer a technical challenge, it really becomes an economic and industrialisation challenge.

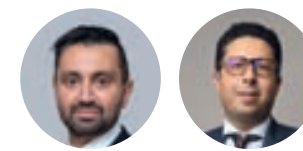
"Is there sufficient feedstock at a price that's reasonable and that's sustainable...and is there a production mechanism that can deliver it at a reasonable price?"

The significantly higher cost of SAF compared to conventional fuel is a hurdle for airlines.

However, in the US, government tax credits for SAF producers are starting to reduce this 'green premium'. This is important in a world where many airlines are still only making a couple of dollars profit per passenger, per trip. Boeing, meanwhile, has committed to all its aircraft being 100 per cent SAF compatible by the end of the decade.

Boeing is also exploring the emission reduction benefits of more efficient flight routings, a process that depends on air navigation service providers cooperating and finding the shortest paths for airliners. "Eurocontrol estimates that 8-10 per cent inefficiency is locked up in the sky through inefficient routes," Moran noted.

"Think how much the aviation industry spends in chasing one per cent in efficiency savings; think how much 10 per cent is worth." ▲



OPINION EDITORIAL: CYBERSECURITY IN SPACE

BY ELIAS MERRAWE, VICE PRESIDENT CIVIL BUSINESS, AND DR WAËL KANOUN, MANAGING DIRECTOR OF CYBER SOLUTIONS, THALES MIDDLE EAST

SPACE TECHNOLOGY

What does it really do for your daily life?

Communication, navigation, observation, government services, exploration and science, the space sector plays an increasing role in our daily lives. It is a key driver of innovation and growth.

Communication, navigation, observation, government services, exploration and science, the space sector plays an increasing role in our daily lives. It is a key driver of innovation and growth.

Space is already a critical node in telecommunications, data collection and processing infrastructures. This is expected to increase with the new connectivity that comes with the Internet of Things and the spread of broadband. Therefore, the role played by the GAFAM (Google, Apple, Facebook, Amazon and Microsoft) in the development of space applications, designed to provide connectivity with ground-based objects and systems.

Satellites and the space services they provide are essential to our functioning as a modern society. Airplanes carrying people and merchandise cannot fly without geopositioning information, nor can seacraft ranging from family sailboats to cargo ships. Traffic lights, banking transactions and more rely on synchronisation signals that come from space systems. Vital infrastructure services like energy production and transmission often need satellite-powered connectivity. This is also applicable to defense, where space assets are used for intelligence (eg imagery) and mission control satellite.

However, as the global economy becomes more dependent on services powered by space systems, this sector has become more tempting—and more lucrative—to cyber threats.

Cyber incidents are growing with alarming pace. Whether state-sponsored or organised cybercriminal gangs, the sheer quantity of malicious actors is on the rise, with growing capabilities and innovation. They are compromising software, jamming signals, and even taking control in-orbit satellites.

Within a decade, advancements in quantum computing will empower hackers since today's security protocols might be unable to resist the processing power of quantum-enabled cyber-attacks.

Testing is important to assess the potential impact of a real cyberattack and the consequences for civilian systems.

Earlier this year, the European Space Agency (ESA) challenged cybersecurity to disrupt the operation of the agency's OPS-SAT demonstration nanosatellite. Thales's offensive cybersecurity team (Thalium) worked with the Group's Information Technology Security Evaluation Facility (ITSEF¹) for this unique exercise. They managed to get access to the satellite's onboard system, and compromise the data sent back to Earth by modifying the images captured by the satellite's camera. Moreover, Thales team achieved other objectives such as masking selected geographic areas in the satellite imagery while concealing their activities to avoid detection by ESA.

SPACE MUST BE CYBERSECURE

It is imperative that existing space systems must be cybersecured against cyber-attacks. In particular, the cybersecurity of fully digital space systems must be taken into consideration from the early design phase and up to operation, for both ground and on-board components.

Companies, organisations and sovereign actors should strive to protect their space system assets so that they can ensure mission or project continuity, and work jointly with partners who understand both cybersecurity field but also Space domain. They should demand from themselves, their partners and their suppliers system resilience against any cyber vulnerability, and the ability to detect and respond to any threat anywhere from the ground to the deep space. And of course, this must all always be done in full compliance of space security requirements, regulations and certifications.

Capitalizing on a unique jointed expertise with Thales Alenia Space, Thales provides a complete offer from solutions to services covering all space missions: telecom, observation, exploration science and positioning, navigation and timing. These solutions are deployed in a "secure by design" approach covering all the cybersecurity from design to operation.

In today's borderless cyberthreat environment, nations around the world are constantly striving to retain the initiative over their cyber-enemies.

A nation's cyber sovereignty depends on multiple factors, such as country eyes only technologies or cyber resilience capabilities as a national cyber security centre monitoring all country critical infrastructures as space domain ones. Capitalizing on sovereign technologies, Thales helps secure sovereign space programs (such as Galileo), where the Group is designing and implementing encryption, protection and monitoring systems against potential cyber-attacks.

In short, space must be made cybersecure in ways that take into consideration the end-to-end entire system. ●

¹An Information Technology Security Evaluation Facility (ITSEF) is a trusted, independent third-party product security testing facility accredited by a national certification body (ANSSI in France)

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Kuwaiti Typhoon debut

Making its first airshow appearance at Dubai is a Eurofighter Typhoon of the Kuwait Air Force (KAF). Looking externally similar to the two RAF No.11 Squadron aircraft parked nearby, the Kuwaiti aircraft is a very different machine under the skin. Retaining the Typhoon's superb kinematic performance, the Kuwaiti aircraft incorporates a

revolutionary new active electronically scanned array (AESA) radar – the ECRS.Mk 0 Captor-E from Leonardo.

This shares a common user interface with the older Typhoon's mechanically-scanned radar, but brings all the advantages of a modern electronically-scanned array, with greater reliability, better tracking accuracy and the

ability to interleave air-to-air and air-to-ground functionality.

But while traditional AESA radars have a fixed antenna, with a relatively narrow field of regard, and with poor performance at azimuth limits, the ECRS.Mk 2 uses a mechanical repositioner (based on two swashplates) that can physically steer the antenna to give a dramatically expanded field of regard (out to beyond 180°), with much improved range performance at high angles 'off boresight'.

Kuwait received its first two Typhoons (of 28 on order, including six two-seat trainers) on December 14, 2021, and 13 are now in service.

The KAF entry into service (EIS) standard included the new E-scan radar, IRIS-T short range air-to-air missiles, AIM-120 advanced medium-range air-to-air missile (AMRAAM) (up to C7), and a Meteor initial training capability, with provision for ballistic bombs.



▲ The Kuwait Air Force Eurofighter Typhoon is making its first airshow appearance at Dubai

▲ NEWS IN BRIEF

A system with a sting in its tail

Italian outfit the ELT Group has enjoyed a strong, growing relationship with the United Arab Emirates since the 1990s, its UAE representative office being established in 2012, before becoming ELT Group Abu Dhabi last year.

This, it is hoped, will help the company to localise activities and development projects. ELT aims to provide leading-edge electromagnetic spectrum operation (EMSO) solutions to protect, surveil, and counter space-related threats, and to safeguard critical national infrastructure (CNI) against electronic and cyber attack.

The company acknowledges the central role of EMSO as a domain of warfare alongside the land, sea, air and space environments, and is presenting its Scorpio system, the group's first electronic intelligence sensor that was launched into low Earth orbit last April.

It's a sell-out for World Defense Show

With space across the expanded show site now completely sold out, the World Defense Show team is here to spread the word to potential trade visitors, that they need to register now to ensure their spot at the event.

The second edition takes place at the bespoke site outside Riyadh from February 4-8 next year, with an extended preview day and introducing the defense space arena. At the stand, Amanda Stainer, CCO, said: "We are excited that the show floor space is now filled to capacity. We will be welcoming exhibitors from 73

countries, along with high level delegations, Saudi government representatives, VIPs and, of course, our trade visitors.

"Our inaugural event took place in 2022, at the tail end of the COVID pandemic, when travel was still challenging for many people, and yet we still welcomed 65,000 visits from attendees from 85 countries and announced more than \$7.9bn of deals signed over the four days.

"With the show running over five days, travel to Saudi increasingly easy from all over the world, and growing international interest

in all the Saudi defense market can offer, we expect to significantly increase those figures in 2024.

"We have already started to see a boom in both trade visitor and media registration and encourage those wanting to be part of what will be an incredible event to register as soon as possible, through: registration.worlddefenseshow.com/tradereg."

In anticipation of increased demand, the show footprint at the exhibition site has been expanded by 25 per cent to include a third hall and increased networking and food and beverage areas.



▲ WDS show floorspace now at capacity, says Amanda Stainer

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Bell rings true with regional customers

Patrick Moulay, Bell's senior vice president for international business, said that he was "most proud" of the success of the company's Bell 505, which he described as "becoming the new benchmark for military helicopter pilot training."

Three Bell 505 helicopters were delivered to the Royal Bahrain Air Force in February 2023, while the type has also been delivered to Jordan (last week) and the first three of 44 for the Republic of Korea Air Force were also delivered recently.

Other regional customers are expected to take delivery of the type under the US Foreign Military Sales (FMS) process.

In Bahrain, the Bell 505s will provide training to the next generation of Bahraini helicopter pilots, including some of those destined to fly the 12 Bell AH-1Z Cobra Viper

attack helicopters operated by the Bahrain Defence Force.

Another type enjoying some success in the region is the Bell 429, which serves with the Horizon Helicopter Flight Training Academy, with the Abu Dhabi Police (who are to expand their fleet from two to four aircraft) and the Royal Air Force of Oman, who have five, and who are expected to order further examples.

Looking ahead, Moulay believes the 9.5 tonne, 18-seat Model 525 Relentless (expected to be certificated next year) will be a "game changer" for VIP and head of state transport, and for offshore oil and gas support, replacing aircraft like the Airbus H225 and Sikorsky S-92.

As public safety and defence requirements continue to grow Bell is providing dynamic and innovative solutions to maximise aircraft



Patrick Moulay with the Bell 429 of the Abu Dhabi Police

effectiveness, not least through its special missions aircraft (SMA), which are militarised commercial platforms. Bell's multi-year plan for investment in these SMA base-line capabilities will begin with the Bell 407M, a militarised derivative

of the latest Bell 407GX, which boasts the most modern cockpit, and drive system.

Beyond the 407M, Bell is looking to produce SMA variants of the Bell 429, 412, and 505 – sometimes referred to as the "M line."

NEWS IN BRIEF

Egis signs SANS agreement

NERA, a subsidiary of Saudi Air Navigation Services (SANS), has entered an agreement with engineering firm, Egis, that will see the latter provide expertise in ATM, airport development, design, operation and maintenance across the Middle East and further afield. Commenting on how a high-performing aviation sector will be key to achieving Saudi Arabia's Vision 2030, Thanos Deriziotis, aviation director, Middle East and South Asia at Egis, said: "This means collaborating and innovating to ensure we not only achieve safe growth, but also target long-term environmental sustainability."

Thales demonstrating FlytX for helicopters

Thales is displaying its FlytX retrofit for mission helicopters, which is a hybridisation of certified avionics and tactical mission capability.

The retrofit solution upgrades ageing helicopter cockpits and increases the efficiency of the crew with a single avionic equipment.

"The FlytX solution's smart display enables the co-pilot or tactical officer to easily switch from a half display portrait image to a full 15-inch landscape image during all flight phases," said Denis Forest, marketing manager.

"They can also select the func-

tions to be displayed at any stage of the flight to match mission needs. Switching from a function to another one is as simple and intuitive as selecting an application on a smartphone. With a tablet-like touchscreen, FlytX opens new ways of interfacing with the cockpit."

Forest said the solution also decreases pilot workload and increases safety as the interfaces are "easy to manage" in stressful conditions. "A short training session will be enough to manage all the available functions," he said.

FlytX can be installed on small, medium and heavy helicopters. "It is perfect, for example, on a Black Hawk or Super Puma," said Forest. "The solution will be installed for the first time on a Super Puma for a customer in Spain."

Denis Forest, marketing manager at Thales, and Geoffrey Beaumier, engineering manager, Thales



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When defending your borders is of the utmost importance, as it is with the UAEAF&AD (UAE Air Force and Air Defence), acquiring the best is the only option. When it comes to air surveillance, a fast aircraft monitoring the airspace, land and sea simultaneously is a primary objective

Fifth UAE GlobalEye set to fly soon

Back in the 2000s, the UAE had its own set of requirements and wasn't going to be pushed into buying something that didn't do that with all kinds of ITAR restrictions.

In 2015 the UAEAF&AD opted for the Saab GlobalEye swing-role surveillance system (SRSS), after beating off competition from the US-built Boeing E-7T and Northrop Grumman E-2D Hawkeye. Today the UAE air force has three GlobalEyes and is on the verge of receiving two more. The first, which flew in April, is now in the flight-test phase at Saab's Linköping facility, the fifth was due to fly in November, with both due for delivery in 2024.

Saab offers a baseline configuration for the GlobalEye, comprising the Erieye extended range (ER) radar with a detection range of 650kms; the Leonardo Seaspray 7500 maritime surveillance radar that can track up to 300 targets, including such

small objects as rib boats and jet skis. There is also the Star Safire 380HD electro-optical/infrared EO/IR turret. However, as Thomas Lundin, Saab's head of sales and marketing, said: "That's what we usually work with, but we are always prepared to work with a customer's requirements."

The GlobalEye offers the latest technologies in terms of sensor suite and software, which when combined gives the user a joint operational picture. The benefit with GlobalEye is that you can do that in all domains – not just air surveillance, but maritime and ground in the same platform, at the same time.

The kind of threats vary, and as Lundin explained: "They can be fast-maneuvring air targets/missiles, hypersonic missiles, tactical ballistic missile launch sites, as well as low and slow air flow targets. These are the kinds of threats our customer wants the GlobalEye to detect."

Intercepting small drones is now a

pre-occupation in the UAE with the Iranian-backed Houthis in Yemen engaged in this kind of warfare. Its widely known the Erieye radar can detect hovering helicopters, but now the processing system on board has been set up to detect drones too. Lundin added: "Now we have taken a big step into the UAE, we need to differentiate between birds and other things by their flight patterns despite them being so small."

The Erieye system is serving on 25 platforms on the Saab 340, 2000, Embraer Embraer EMB 145 and the Global 6000/6500. The most recent customer is Poland, which recently acquired two Saab 340 Erieyes, that look similar to the two UAEAF&AD examples that were returned to Linköping in December 2020.

The UAE acquired two Saab 340 Erieyes on lease as an interim AEW&C solution in 2009, because until then the UAEAF&AD had never operated such a sophisticated surveillance system and this was seen as a way to learn. Such was

the understanding between Saab and the UAE that an order came six years later for the first GlobalEyes.

In October, Saab attended the ADEX defence exhibition in South Korea, where they are bidding for the RoKAF's new airborne early-warning solution, with the GlobalEye. "We believe it meets their requirements and are focusing on providing a package of industrial co-operation to South Korea. That will increase their know-how," Lundin said.

Meanwhile, work will soon get under way to integrate the sensor suites on the two GlobalEyes ordered by the Swedish Air Force last year. They will be delivered in 2027 to replace the first generation FSR-890 Erieyes mounted on the Swedish Air Force Saab 340, operational since the mid-90s.

Lundin finished: "We believe the GlobalEye is the ideal solution. It is a long-range business jet suitable for special mission purposes, with a 12-hour duration and a small logistics footprint. ▲

▲ The fourth Saab GlobalEye for the UAEAF&AD lifts off from Linköping on its first flight in April



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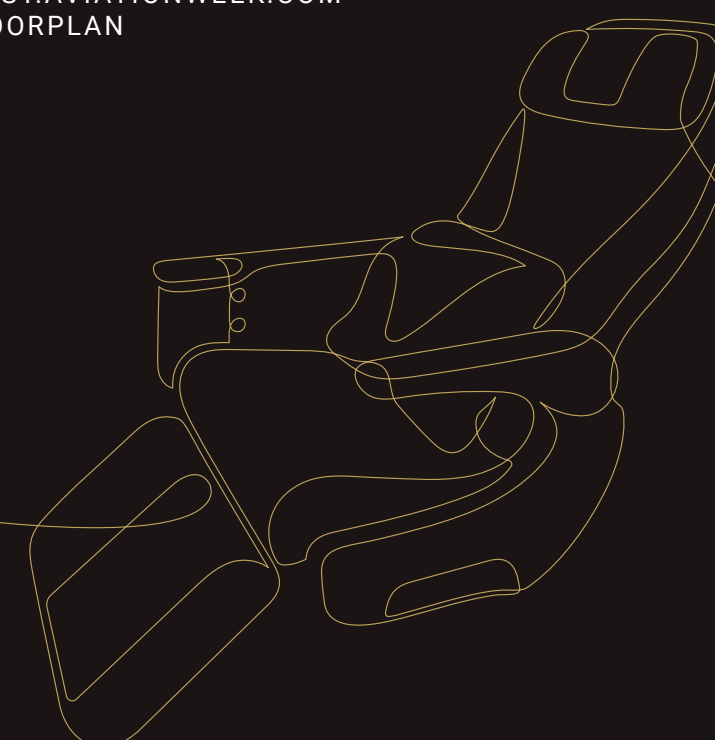
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ExecuJet expands at Dubai DWC Airport

Dassault's new, high-capacity ExecuJet MRO facility at Al Maktoum International (DWC), has been busy serving Falcon customers operating in the Middle East. And it's ready to support the Falcon 6X and 10X when they enter service. It's yet another reason to fly Falcon.



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