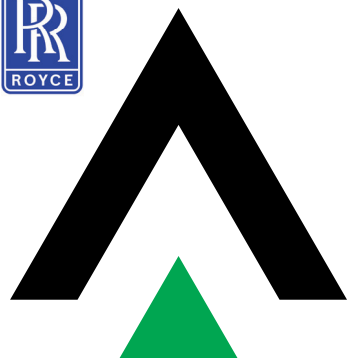




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# SHOW BUSINESS



AN ARABIAN AEROSPACE PUBLICATION

NOV 14 2024

## Royal approval as B-52 display gives show of unity PRIME MOVER

**B**ahrain's Crown Prince and Prime Minister, HRH Prince Salman bin Hamad al Khalifa, formally opened the Bahrain Airshow yesterday morning - and spent several hours visiting exhibitors and getting close to the heavy metal on show.

Driving a golf buggy along the static park and waving to visitors, he made an extended stop to visit the show's star performer – the Boeing B-52H – and carried out a close inspection ahead of a spectacular display by TWO of the behemoth eight-engined bombers which performed three flypasts for the onlooking dignitaries, before heading back to their base.

There could be no better way for the USAF to show off its global precision strike capabilities and its solidarity with the Kingdom of Bahrain than to fly the aircraft to a

Middle East airshow for the first time.

Capt. Andy Ladd, of AFCENT, accompanied the VVIP visitor on a walkaround the B-52.

"We are here to illustrate our support for Bahrain," he said. "This sends out a clear message and shows we are ready and prepared to support Bahrain and the GCC if the need arises."

The Crown Prince, who is also deputy supreme commander of the Bahrain defence force, took an opportunity to look at the cockpit as well as take a peek inside the massive bomb-bay.

The B-52H in the static display is from the 5th Bombardment Wing, based at Minot AFB, North Dakota but up to six of them are currently deployed at an undisclosed forward operating base in the region, should the need arise for the USAF to flex its muscles. ▲

A highlight of yesterday's air display was the sight of two USAF B-52s overflying the showground



Alan Warnes



▲ Capt. Andy Ladd, of the USAF's AFCENT command shows Prince Salman bin Hamad al Khalifa, inside USAF B-52H bomb bay





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▲ Khalid Alnatour and his "favourite" special mission Air Tractor

## Charting new skies

Having first attended BIAS in 2022 as a subsidiary of Saudi Aramco, Dammam-headquartered Aloula Aviation has returned to the show this year, still as a subsidiary of Aramco but operating independently to serve governments, institutions and high-net-worth individuals.

"Our expertise lies in charter operations, including private jets, special missions and helicopter services for both onshore and offshore activity," said Khalid Alnatour, CEO of Aloula Aviation.

Operating a fleet of approaching 65 aircraft, flying 50,000 hours annually and transporting around 1.2 million passengers, Alnatour added that Aloula also manages 11 airstrips in Saudi Arabia and handles its own aircraft maintenance in-house with a Part 145 repair station, certified by GACA, FAA and the Cayman Islands.

"Our presence at BIAS enables us to expand our presence in the region and provides a fantastic opportunity for us to showcase our capabilities, in particular our specialised aircraft for search and rescue missions," he added.

# Go big and go home... Texel spreads its wings

Bahrain-based Texel Air has spread its wings as far as Australasia since the last Bahrain International Air Show. The cargo specialist now flies throughout the region, with four Boeing 737-800 Boeing Converted Freighters (BCF) based in Adelaide, Brisbane, Darwin and Perth, plus another in Auckland, New Zealand. There are five more 737s – two -700 FlexCombs and three -800BCFs – based in Bahrain. It's a major expansion since the last show, when the airline had only four 737s.

The idea for expansion in Australasia came about during the pandemic, when New Zealander John Chisholm, father of Texel Air's CEO, George Chisholm, was 'locked down' in New Zealand and saw a gap in the market.

An initial 737-800BCF was

dispatched from Bahrain to fly for New Zealand Post Office and Freightways – rivals in surface transport but which run a joint venture airline, Parcel Air Express – in 2023. The Australian aircraft, meanwhile, operate in the colours of Team Global Express, another major package carrier.

"We just saw that we could add value," George Chisholm said at the show yesterday, "bringing our learning from the Middle East back to Australasia." Texel's -800BCFs were a generation younger than the 737 'Classics' operating for local carrier Airwork, with better range and payload capabilities.

Texel applied for, and was granted, Extended Diversion Time Operations (EDTO), the local equivalent of the US ETOPS regulations, which allow an aircraft to

be a certain amount of time away from a diversion airport – 120 minutes in the case of EDTO. This allows Texel's aircraft to undertake longer overwater sectors to destinations such as the Cocos Island group between Australia and Sri Lanka, and to Chatham Island off New Zealand.

However, management of most aspects of the Australasian operation is still based in Bahrain. Texel's Bahrain-based operations, meanwhile, are heavily used by package operator DHL, which use two Texel aircraft in DHL's distinctive bright yellow and red livery, with a third aircraft used for surge operations in periods such as the busy winter season. More expansion is on the cards: Chisholm aims to have a further three 737s in action by end of 2025.



▼ "We just saw that we could add value" – Texel Air's CEO, George Chisholm



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# STRENGTH THROUGH PERFORMANCE



## Otokar

## Embraer on the comeback trail

Embraer is confident that orders from Middle East-based airlines for its E-Jets E2 family are on the way as its 70–150-seater aircraft range taps into a market sector that carriers are increasingly interested in capturing, predicted Stephan Hanneman, Vice-President Sales & Marketing and Head of Middle East & Africa at the Brazilian aerospace firm.

“Today we’re talking to a number of network and low-cost airlines within the region, and we are confident that over the course of the next 12 months we’ll be bringing additional operators from the region to the platform,” said Hanneman.

“These aircraft would most likely be delivered from around 2027 which coincides with a significant hardware upgrade on the Pratt and Whitney GTF family, which is going to drastically increase time on wing for operators therefore making it a very compelling airframe and engine selection,” he added.

The introduction of the E2 into service with Royal Jordanian is a good example of the “comeback” the aircraft is making in the region.

“This is a region where we see great potential for the E2 to complement a larger narrowbody aircraft. We believe the aircraft will have a fantastic role to play to right size markets where the narrowbody aircraft are not the right fit in terms of the capacity or are unprofitable,” said Hanneman.



▲ Ambassadorial visit: The ambassador of Brazil to Bahrain and the ambassador of Brazil to Jordan visited the RJ Embraer E2-195 at the show yesterday. Inset: Embraer’s Stephan Hanneman is confident of adding more Middle East customer for its E2 family in the coming year



Royal Jordanian, an Embraer customer since 2006 originally flying its E175 and E195 models, boosted the manufacturer’s Middle East E2 orderbook in 2023 with its order for eight E2s and a further six purchase rights.

The Amman-based carrier has taken delivery of three E190-E2s and two E195-E2s to date, with the remaining three arriving from the end of 2025 onwards.

An order for six E195-E2s from Omani low-cost player SalamAir is

another example of the type of carrier from this region that Embraer believes will opt for its aircraft, with this carrier’s first E2 being delivered in 2027.

Hanneman added that Embraer sees significant connectivity benefits the E2 will bring to Middle East carriers. “Many of the bigger airlines, because of their fleets being mainly widebody aircraft, don’t have the ability to go into smaller and thinner markets,” he said.

“That is where we believe that the economics of the E2, which burns 25% less fuel compared to the previous generation E1 aircraft,

combined with the performance of the aircraft, which can fly up to seven hours, and the passenger experience, makes it a perfect fit for the region.”

Embraer and Royal Jordanian have teamed up with a joint chalet here at the show to showcase both the E2 family and RJ’s two-class 122-seat E195-E2.

“We see Bahrain as a trademark event for the region and sharing this chalet is a great way of demonstrating the close partnership and ties that we have with Royal Jordanian as our leading customer in the region,” said Hanneman.

## Valo Aviation gears up for business



▲ “Bahrain felt like the ideal place to establish Valo Aviation” – Hanna Hakamo, CEO Valo Aviation

Valo Aviation, a start-up specialising in business jet management, charter operations, and flight maintenance services celebrated being the first Bahrain-based business jet operator to be awarded an AOC on Wednesday. The milestone achievement has been two years in the making.

At the announcement, held beside its inaugural aircraft - a Gulfstream 550 owned by a client based in Kuwait, Valo Aviation CEO, Hanna Hakamo, outlined plans to expand Valo’s managed fleet to 10 to 15 jets within the next two years. “The Gulfstream is our first aircraft, but we are also interested in operating Dassault Falcon aircraft, which are well-suited for this region,” Hakamo shared.

Originally from Sweden and with a background in aircraft maintenance in Europe, Hakamo described Bahrain’s business jet market as “having huge potential.” She noted that as a woman “Bahrain felt like the ideal place” to establish Valo Aviation, “especially with strong support from the local authorities and government.”

With the AOC now in place and charter services operational, Valo is also scaling its maintenance services. Plans are underway to design and build a new hangar in Manama to provide expanded storage and maintenance services. Valo is currently working towards achieving Part 145 approval for these services.



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Mark Pilling reports

Bahrain Airport Company has a new terminal and big plans to attract more carriers and develop a logistics hub in support of the kingdom's business aspirations

## Bahrain's new terminal shines

Being described as the "smallest big airport in the region" is an accolade Bahrain Airport Company's CEO Mohamed Yousif Al Binfalah is happy to hear.

Nearly all the visitors to the 2024 Bahrain International Airshow will have experienced the sleek new terminal at Bahrain International Airport, managed by Binfala's team, on their arrival to the kingdom.

Completed in 2021 at a cost of \$1.1 billion, the new airport is not meant to compete with the mega hubs nearby but is intended to offer something different, explained Binfalah.

"It was meant to be different from a customer experience perspective, because I think at the end of the day, that will be the ultimate differentiator," he said.

He wonders how the mega hubs will be able to deliver a good experience when handling tens of millions of passengers a year. "If you examine growth versus value, you question how this equation is going to be balanced in a way that will maintain the quality of service for the passengers?" said Binfala.

BIA is a different quantity, with the airport forecast to handle 9.6 million passengers this year, almost at parity with 2019 pre-pandemic levels. Over 10 million are expected next year.

In early September, Bahrain hosted the 29th edition of the famous Routes airline-airport networking conference, with the kingdom keen to showcase its new terminal and attract more airlines to serve the island state.

"Bahrain International Airport is capable of accommodating over 14 million passengers annually and connects us to more than 60 destinations worldwide as we strive towards our goals," Binfala told delegates at Routes. "Our target of connecting the kingdom to 100 destinations reflects our ambitions to increase our reach and solidify our position as a key travel hub."

It has not been an easy journey for Bahrain to almost return to 2019 traffic levels. Home carrier Gulf Air has struggled to develop a sustainable business model and network carriers such as KLM and Lufthansa have dropped Bahrain for the time being.

"I think we've been victimised by something out of our control, which is the impact of the supply chain on some of these airlines," said Binfala. The scarcity of aircraft because of delivery delays and the ensuing impact on route development is a story familiar to many.

"We remain optimistic that their situation with aircraft deliveries will improve, and the time will come for them to revisit this decision," said Binfala. In the meantime, "we've managed to add a few other destinations to our portfolio and

quite a lot of new airlines, albeit obviously small ones," said Binfala. Examples are low-cost carriers such as Pakistan's Fly Jinnah and Saudi Arabia's Flynas.

"But as long as we are improving the air connectivity and providing the customer with more options, I think that's a very positive development for an airport," he added.

### Diversifying revenue streams

Alongside the new terminal, Bahrain is diversifying its revenue streams with logistics, MRO and private aviation projects.

The development of the Express Air Cargo Village, on a site of 250,000 sq m, will offer dedicated buildings for each express cargo operator. By the end of 2024 all these plots will be signed up, said Binfala. FedEx is the first tenant.

"This strategic project is aimed to position Bahrain as a pivotal logistics hub, providing access to key regional and global markets," he noted.

Bahrain is also looking further ahead to a day when Bahrain International Airport, which has a capacity of 14 million passengers and room to accommodate more, is full and a new greenfield airport may be required.

At Routes, HE Mohammed bin Thamer Al Kaabi, Minister of Transportation and Infrastructure, Kingdom of Bahrain, spoke of a study into a possible new airport on reclaimed land that could eventually succeed the current airport. The project envisages an airport with an annual passenger capacity of 40 million possibly coming into operation in the mid-2030s. ▲



Bahrain Airport Company's CEO Mohamed Yousif Al Binfalah

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Michael Hewitt,  
who sits on  
C5 Capital's  
investment board  
with Asterion's UAV

## Drones signal a capital investment

C5 Capital, the specialist venture capital firm investing in defence technologies, is showcasing the latest advancements in drone technology, with its partners Asterion and Rapidflight taking centre stage at its chalet (A11).

Michael Hewitt, CEO and co-founder of IP3 who sits on the investment board at C5 Capital, explained that C5 is building a new investment fund that will focus on defence within the industrial base and aims to harvest the most innovative technology, including that being developed by Asterion and Rapidflight.

"It's about prioritising technologies that are proving effective in modern warfare as we believe they will also be leaders in investment," he said.

The defence sector, Hewitt noted, remains undervalued despite growth potential as uncrewed aerial vehicles (UAVs) evolve.

C5's involvement at BIAS also underscores Bahrain's growing

role as a hub for aerospace innovation, reflecting a broader trend toward the integration of UAVs into various sectors from defence to disaster response. Hewitt is particularly interested in understanding emerging threats in the GCC region, drawing on lessons from the Ukraine conflict, which has demonstrated the strategic impact of drones.

Emphasising the need to incorporate Ukraine's use of drones into C5's investment strategy, Hewitt said the focus is on developing autonomous systems capable of operating with larger payloads and enhanced persistence. Asterion's latest drone, which is performing test flights at the show, represents a significant leap in UAV capabilities, "integrating cyber, AI, and UAV technologies for both defence and humanitarian purposes," added Hewitt.

Meanwhile, Rapidflight is harnessing the rapid development of technology to transform the aviation manufacturing process. "They are leveraging additive

manufacturing and real-time technology adjustments, reducing production timelines by over 80% to meet evolving defence needs, especially in UAVs and AI-driven solutions."

Hewitt also highlighted the integration of drones with counter-drone systems to address emerging threats effectively. "C5's strategy involves developing adaptable technologies that can be rapidly modified and deployed, leveraging the flexibility of uncrewed systems across both military and commercial applications," he said.

"With a focus on developing technologies that can be quickly modified and deployed, taking advantage of the flexibility of uncrewed systems, our presence here highlights the potential for UAV technology to revolutionise various domains from warfighting to humanitarian applications," Hewitt concluded.

C5 is also showcasing its partners California-based Otto Aviation and Axiom Space at its chalet.

### ▲ NEWS IN BRIEF

#### Air cargo set to continue growth

As Bahrain increases its activities as a freight hub for the region, data released by manufacturer Boeing yesterday supported the move confirming the air cargo market is now exceeding pre-pandemic levels. Boeing is forecasting continued long-term growth, saying air cargo traffic will increase by an average of 4% per year through 2043.

These projections appear in Boeing's 2024 World Air Cargo Forecast (WACF), the biennial overview and long-term outlook for the air cargo industry.

Boeing said the global air cargo fleet is forecast to rise to 3,900 airplanes by 2043, a two-thirds increase from 2,340 freighters in 2023. Driven by demand in high-growth Asian markets, the large widebody freighter fleet will nearly double. Nearly half of production and conversion deliveries will replace retiring freighters with more capable and fuel-efficient models – due to recent market needs, many older jets remain in service. The manufacturer forecasts that India's domestic air cargo market will nearly quadruple as express and e-commerce networks expand.

#### Higher thrust ambitions

Royal Jordanian Airlines (RJ) will take GE Aerospace's GENx-1B engines to power its growing fleet of Boeing 787-9s. The Jordanian flag-carrier announced at the Arab Air Carriers Organization annual meeting that it will buy 18 engines plus spare units, along with a TrueChoice services agreement that will provide MRO services for the engines.

"We have been pleased by the performance of the GENx engines in our existing fleet," RJ's vice-chairman and CEO, Samer Majali said. "Expanding our partnership and introducing higher-thrust technology into our operations will support our long-haul route expansion goals and fleet modernisation programme."





# Fly Dubai's first touchdown at BIAS

Marking its debut at the show, hybrid carrier flydubai is showcasing one of its retrofitted Boeing 737-800 cabin interiors featuring 10 business class Thomson lie-flat seats and 156 economy class Recaro seats.

The new configuration is being rolled out across much of the Dubai-based carrier's 88-strong fleet of Boeing 737 aircraft, as part of its multimillion dollar retrofit programme launched earlier this year.

Operating 31 weekly flights between Dubai and Bahrain, the airline operated more than 2,800 flights between January and October this year. Flydubai's CEO, Ghaith Al Ghaith, CEO, said the airline's presence at this year's show celebrates the region's thriving aviation industry. "It underscores our commitment to the Bahraini market which we have been serving since 2009," he said.

## GACA's dual focus for aviation future

Saudi Arabia's aviation regulator, the General Authority of Civil Aviation (GACA), is highlighting its role in the country's huge drive to create an aerospace eco-system while also promoting sustainability.

The organisation is focusing on two main aspects of its work at the show: the Saudi National Air Navigation Plan (SNAP) and creating a roadmap for the emerging world of advanced air mobility.

SNAP is designed to make Saudi Arabia the benchmark for efficiency in the Middle East through the modernisation, innovation and digitisation of its air navigation systems. It has the ambition to contribute to the reduction of aviation's environmental footprint and promote air navigation services' interoperability in the national, regional and international arenas.

Optimising air navigation services through guiding airliners on the most efficient route can help reduce CO<sub>2</sub> emissions by allowing the aircraft to burn less fuel..

Meanwhile, promoting advanced air mobility – the next generation of small air vehicles that will typically take off and land vertically using electric power rather than conventional aircraft – is also high on the agenda.

Not only will the new electrically powered aircraft not produce any emissions themselves, but they offer the possibility that they will eventually replace conventionally powered aircraft, taking more polluting aircraft out of the environmental equation.



Miles of smiles: Captain David Smith showcasing the G700 on the static display

# Putting the Gulf into Gulfstream

With over 120 aircraft based in the region and 40% growth over the last decade, private jet manufacturer, Gulfstream, is reaping the rewards of its long-standing presence in the Middle East, which dates back to the 1960s.

Showcasing its G700, which Gulfstream announced on Tuesday has exceeded 65 city-pair records – the latest record-breaking flights include a trip from Savannah to Honolulu on a sustainable aviation fuel (SAF) blend travelling 4,090nm in 8 hours and 52 minutes - the OEM is also displaying its G500 aircraft at this year's show.

Scott Neal, senior vice-president of worldwide sales, said "the high speeds and long ranges Gulfstream aircraft provide are ideal for local

operators, easily connecting them with other global hubs such as London or Singapore.

"Along with our industry-leading interiors and cabin technology and comfort, our aircraft give customers based in the Middle East the ability to easily traverse long distances nonstop."

The ultra large-cabin G700 entered service in April this year with Qatar Executive being the Savannah-based OEMs first international customer for the business jet.

Equipped with Rolls-Royce Pearl 700 engines it has a range of 7,750nm the G700 can be configured with up to five living areas for up to 19 passengers. Meanwhile, the 5,300nm-range G500, which entered service in

2018 features Gulfstream's award-winning Symmetry Flight deck and can accommodate up to 15 passengers.

Gulfstream's 8,000nm-range G800 is awaiting entry into service, although according to Gulfstream it is on track for certification by early next year (six to nine months after the G700's certification) and is already seeing demand in the region for this model.

Having a presence at BIAS is in line with Gulfstream's strategy to strengthen its presence in emerging and economically vibrant regions.

"It's a great opportunity for our customers and guests across the region to experience the Gulfstream Difference in person," said Neal.

# Struck by thunder

JF-17C 22-306 serves the second operational Block III squadron – 8 Squadron 'Haiders' which stood up earlier this year



The Pakistan Air Force is showing off a new Block III Chengdu JF-17C Thunder at BIAS 24 for the third time, after being unveiled at Dubai Airshow last November, then the World Defense Show in Saudi last February.

All the new systems and weapons on the Block III, have elevated Pak-Sino designed jet into a new sphere, and could lead to some of the earlier Block IIs being upgraded.

The biggest enhancement is the Nanjing KLJ-7A AESA (airborne electronically scanned array) radar, that comes with a new avionics suite that includes a wide angle HUD in the cockpit and integration of a new Chinese helmet mounted display sight.

For self-protection there is also an embedded Chinese electronic countermeasures (ECM) system.

A new integrated Klimov

RD-93MA powerplant provides an extra 5,000lbs of thrust, not just giving more thrust but the opportunity to eliminate the black smoke often appearing when the jet accelerates in the air.

The new engine will allow an additional half an hour on station.

Another area where the JF-17C has seen considerable enhancement is the weapons load, with the increase to four weapons stations under each wing with one of them courtesy of a twin-rack, allowing two missiles to be carried.

There is an additional station under the central fuselage, and a chin-mounted hard point that can house the Turkish Aselsan Aselpod targeting pod at the show.

Then there are the new weapons, with the PL-10 high-bore off-sight missile integrated into the new Chinese HMD that can augment

the existing PL-5EII.

There are also suggestions the highly capable PL-15E BVRAAM integrated with the PAF's J-10Cs will go on the Block III. With a range of up to 95 miles (150kms) it works within the range of the new KLJ-7A radar.

These missiles will bring a huge leap in the JF-17C's prowess, effectively side-lining the current SD-10A as the PAF's primary BVR missile. Included in its armoury is the new indigenous Al Battar laser guided bomb kit that can convert 500lb/1000lb/2000lb bombs into smart weapons.

With all 30 new JF-17C Block 3s set to be finished being built soon, attention will focus on the upgrade of the 50 Block 2s with new avionics, but the 50 Block 1s will remain as they are.

## T3 increasing trainee intake to meet airline demands

Sharjah-based T3 Aviation Academy plans to at least double its annual throughput of trainee pilots from 2025, to cope with high demand from parent company Air Arabia.

Until now, T3 has limited its annual intake to six courses with a maximum of 16 trainees each. From 2025 however, this will rise to between 12 and 14 courses per year.

T3 takes trainees direct from high school. Assuming they pass T3's tests and gain the approval of Air Arabia,

they begin a two-year training phase, incorporating a core flying course of 40 to 50 hours in the Czech Republic, Saudi Arabia or Fujairah.

Thereafter, they start two years of line training in the co-pilot's seat of an Air Arabia Airbus A320, at the end of which they will have achieved 1,500 flying hours and gained their ATPL. At that point, they are guaranteed a job with Air Arabia if they wish, or can leave and join another carrier.

### ▲ NEWS IN BRIEF

## Cadets are back with Etihad

Etihad Airways is restarting its cadet programme, as it seeks to create a pipeline of future pilots to feed the airline's expansion.

The UAE flag-carrier suspended the programme during the pandemic but is now restoring it, to ensure it has enough trained personnel on its future flight decks.

Unlike the previous courses, which saw youngsters undertaking university before starting the course, the revived project will open up the chance to become a pilot to high school graduates.

"We wanted to make the programme as available as possible, and make it experience-based, so we ensure that we attract young talent," said Dr Nadia Bastaki, Etihad's chief people and corporate affairs officer yesterday.

The new course attracted 3,000 applications and a selection process is under way, with around 60 people starting the cadet course in January.

Ground school, followed by flight training in Spain, will take 18 months to two years. After simulator training, the young pilots will become second officers on Etihad's short-haul Airbus A320 fleet. The relatively short sectors mean that the young pilots will get more practice in take-offs and landings.

Etihad's rapid expansion means that career progression can be rapid, with young pilots potentially reaching captain status in eight to 10 years, said Bastaki.

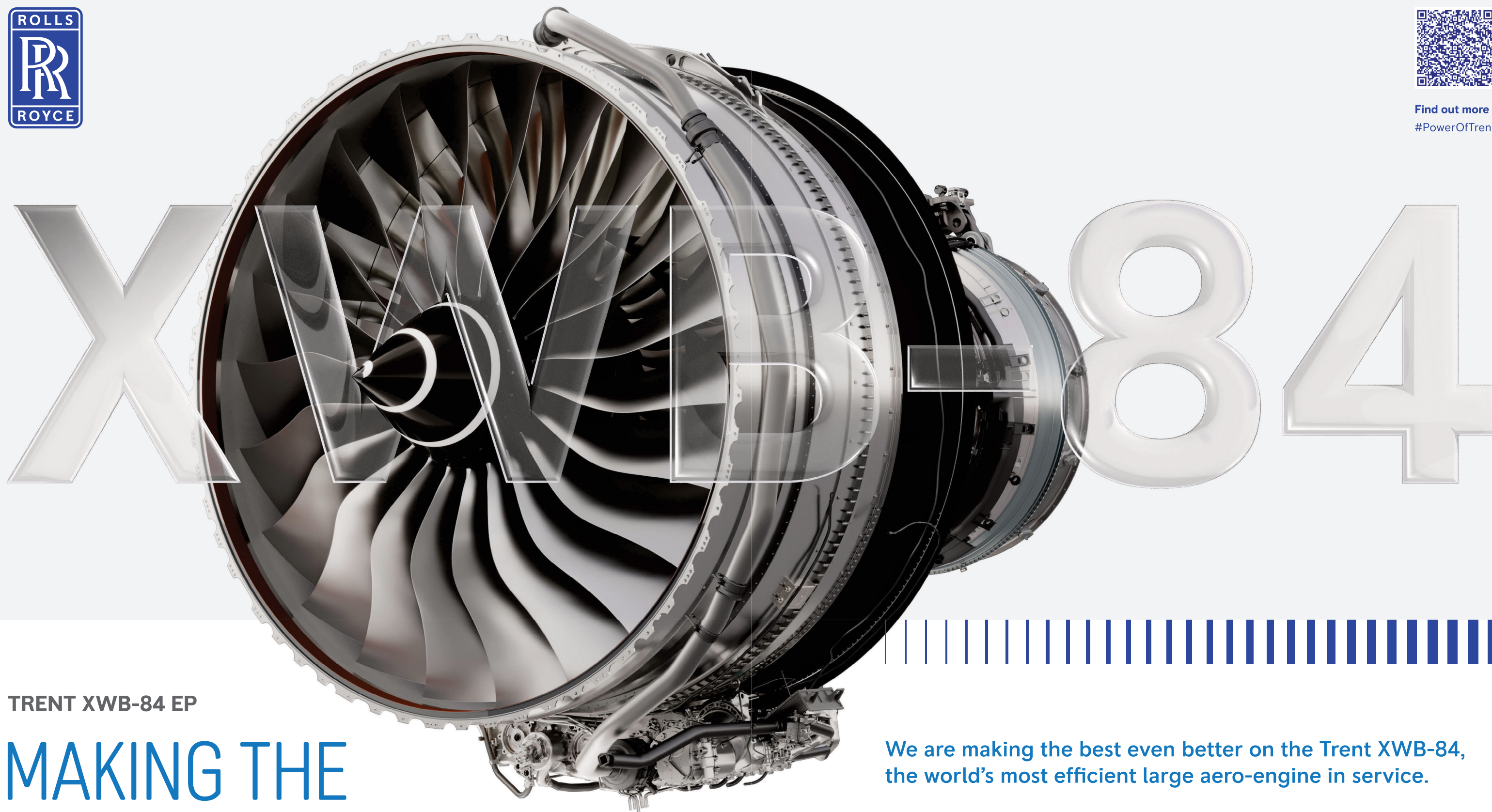


▲ Dr Nadia Bastaki, Etihad chief people and corporate affairs officer





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# Excitement builds for Mallaghan's eGSE

With a focus on decarbonising ground handling operations, Northern Ireland-headquartered ground support equipment (GSE) company, Mallaghan, is hoping to increase awareness of its electric GSE across the region.

A debut exhibitor at BIAS, Mallaghan, which has a base at Jeddah in Saudi Arabia, is already working with various partners in Bahrain including Bahrain Airport Services (BAS), Bahrain

Airport Company (BAC) and DHL. "We see huge demand for eGSE and want to leverage those opportunities," said Ahmad Memesh, Mallaghan's commercial manager Middle East and North Africa.

Mallaghan's latest eGSE include its electric sky belt, which is already in use at airports across the US and Europe and its Toilet Service Tanker, which was launched in Lisbon in September.



▲ Ahmad Memesh, Commercial manager Middle East and North Africa, Mallaghan

# Next generation: Future looks bright for Little Engineers

A group of future-generation potential aircraft engineers are here at the show working on a programme set up by the Airbus Foundation and The Little Engineer organisation.

Yesterday, a group of schoolgirls from local Bahrain schools were tasked to spend three hours to try and put together models of nine Airbus 350 aircraft and navigate them on a board using robotics to the correct airport gate. Today it will be the turn of the local boys to try their hand at the exercise.

Little Engineer organisation founder and CEO, Rana El Chemaitelly, has a background in mechanical engineering and management, and created The Little Engineer, an "edutainment" centre for engaging young minds in science, technology, engineering and mathematics (STEM) through hands-on learning activities to unleash their full potential in pre-engineering skills while highlighting robotics, renewable energies, aviation and space, working in parallel on youth leadership and presentation skills.

"The Little Engineer works with ministries of education in the Middle East and North Africa region to integrate the programme in school curricula," explained El Chemaitelly. "However, we have

seen over 25,000 students take part in the programme, which has been operated in more than 12 countries around the world."

Due to the Covid pandemic, the workshop was halted and the Bahrain International Airshow marks its

first event since then.

"During the last air show here, Bahrain was keen for us to demonstrate The Little Engineer programme," said El Chemaitelly. "The girls here are the first to have a sample, and, so far, are really enjoy-

ing it. It's a great taster for girls and boys of a young age to experience the joy of engineering, especially in the aviation industry. If they really enjoy what they learn here, they can look at the Airbus 'The Little Engineer' platform and learn more."



▲ Little Engineer organisation founder and CEO, Rana El Chemaitelly (second left) with the Bahrain students

# Scout out this veteran on display

Visitors can see an old Westland Scout helicopter being displayed at the Bahrain Ministry of Interior stand. Officer Abdulrahman Hasan Aldalhan, ministry of interiors aircraft from the Police Aviation sector, said the helicopter is here to highlight its historical significance.

"We wanted to bring the Westland Scout here as a sort of museum piece for visitors to view this first one Bahrain had," he said. "It was used here in Bahrain for surveillance and search and rescue missions from 1965 and it retired in 1981."

The Royal Bahraini Police now operates eight Bell 412EP helicopters from Manama-Diwan Fort, one of which is being displayed on the static. "The Bell helicopters are used for various tasks, including firefighting and medevac missions – we use doctors at local hospitals that jump in with us, or we have our own trained medics" said Aldalhan who flies a Bell 412.

"We are here to educate the public about our diverse operations and capabilities."



▲ Officer Abdulrahman Hasan Aldalhan, ministry of interiors aircraft from the Police Aviation sector with the historic Westland Scout helicopter

# Critical care in the air

Aseel Ahmad Alsahli, flight paramedic at Alpha Star Aviation Services with the company's critical care equipment

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

"We specialise in providing life sustaining critical care around the clock, domestically within Saudi Arabia, as well as internationally," said flight paramedic Aseel Ahmad

Alsahli, "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."

"We recently had a mission of transferring a 30-day-old baby with congenital heart disease from a remote area in the north of Saudi Arabia to a hospital in Riyadh. The aircraft provides a proper ICU facility."

Besides its critical and neonatal care, it also provides support transport from hospital to home, as well as VIP transport for accompanying relatives, organ transplant recovery, and repatriation services for patients and the deceased. Medical escorts for commercial airline patients and immigration and security assistance are also provided.

Its medevac fleet includes Cessna Citation Latitude, and Hawker 900 XP – which allow for two patients, an Airbus A320 which allows for four patients in the rear of the aircraft, and King Air 360C.

# Try sim out for real

Delegates and visitors to the show can try out a ground services equipment (GSE) simulator at the Simmac stand in the exhibition hall. The Kuala Lumpur based company develops simulation systems for ground support equipment, including push-back tractors and cargo loaders.

"What is special about our simulator is that it is a single platform offering a total solution for GSE training, that also makes it cost effective," said Muhammad Safiuddin bin Abdul Latif, technical sales manager. "The advanced simulators are equipped with a 360° graphic display, have a complete replication of the control panel, and are customisable to local environment." Within the Middle East the company has its products based at airports across Saudi Arabia – where it also has an office in Jeddah – Iran, and Iraq.





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## The future is manned-unmanned... but proceed with caution



Lt General  
Derek France  
Commander,  
USAF Central  
Command  
spoke of the  
benefits of  
manned-  
unmanned ops

The concept of performing manned-unmanned operations isn't something new, but its closer than ever to becoming a reality. The time for pilots to engage ground based air defences, advanced fighters and long range missiles, while trying to conduct their missions, is incredibly condensed.

As the USAF AFCEC Commander, Lt Gen Derek France said at the Manama Air Power Symposium on Monday: "One way to mitigate the threats to manned aircraft and expand the decision space for pilots is to use unmanned systems. Their robust operational reach and the ability to loiter in high threat areas means they can identify targets and sense the operational

environment with little need to communicate.

"With automated and artificial intelligence enhancements they should be able to enable rapid and prioritise decision making. They must be able to identify friendly, neutral, hostile actors and pass information in real time for rapid prosecution."

These benefits can of course be multiplied when employed in large numbers, and the lower costs of unmanned systems, compared to advanced manned platforms should in theory allow industry to produce to the scale and tempo necessary to meet the threats. Increased production rates should allow the development of a mesh of network systems sending multiple unmanned systems equipped with varying sensors to cover large areas and pass data to increase situational awareness for other assets.

"However, it only works though if they are affordable and produced rapidly, so those industry partners who produce small numbers of gold plated systems will be of limited use in the air war," stressed Lt Gen France.

Another benefit is they have fewer life support requirements that the pilot inside the cockpit requires. Instead of environmental control systems the space can be dedicated to sensors and computing power to process information and make lower level decisions in combat.

"Unmanned systems are not one size fits all, with the commander a prerequisite for target identification and evaluation because misidentification can lead to catastrophic results," concluded France.

The collaborative combat aircraft (CCA) concept envisions manned fighter aircraft working with one or multiple unmanned systems enabling the pilot to be more efficient and effective in combat. Beyond CCA there is the potential to bring much needed defensive jammers, countermeasures to increase survivability. Unmanned-manned is certainly the future and will be standard fits on future fifth and sixth-gen combat aircraft.

### Technology focus is key to Bahrain's protection



▼  
The RBAF Block 40s could occupy a new role once the new F-16 Block 70s arrive

While the RBAF's main role is to defend the country, the Commander Major General Sheikh Hamad bin Abdullah al Khalifa is working hard to be a good partner within the GCC, their biggest threat is drones and missiles. "Right now there is no imminent threat, but there have been to our neighbours, and that could return," he said on the sidelines of the MAPS which was held in Bahrain on the eve of the show.

"What is threatening us is the advancement of the technologies and the equipment that the militias are

using. We are trying hard to get the hard kill (shoot them down), but we need the soft kill too (by such means as electronic warfare).

"The new F-16C/D Block 70s are currently being used to train pilots and groundcrews, and in the near future we expect them to be operational. The project is not completed yet, as we are still expecting more equipment. Our older but capable Block 40s have been fitted with very advanced equipment and we can get a lot out of them.

"Once we have finished with the

introduction of the Block 70s, we might alter the role of the Block 40s. We are keeping the F-5s, to prepare pilots for the F-16s. The BAE Systems Hawks are being used a lot to train new pilots for F-16s. We have had them since 2006, and they are doing an outstanding job, their serviceability is very good.

"Meanwhile the new Bell 505 helicopters are very good for lead in helicopter training and we might order more, but the priorities right now are the new F-16s and the new Patriots. We have payments to make!"





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