

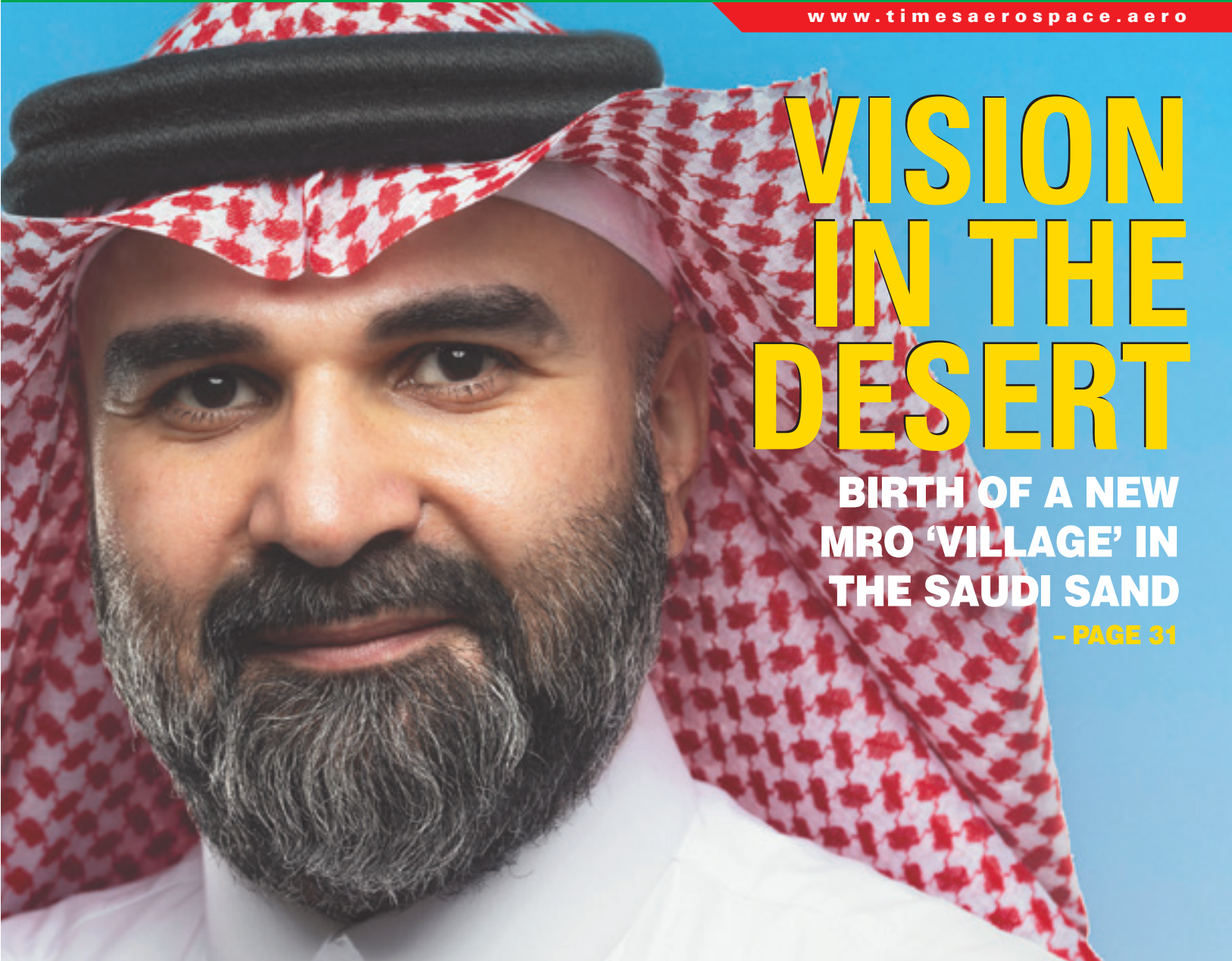
ISSUE 2, VOLUME 14: MAY – JULY 2022



# ARABIAN AEROSPACE

THE MAGAZINE FOR AEROSPACE PROFESSIONALS IN THE MIDDLE EAST, NORTH AFRICA AND TURKEY

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COVER: SAEI chief executive, Captain Fahd Cynndy, discusses the huge new MRO 'village' being created on a far corner of the expanding King Abdulaziz International Airport in Jeddah. PICTURE: BILLYPIX

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## SAUDI LOOKING AT A SUNNY FUTURE

The sun is shining on Saudi Arabia, both literally and figuratively, and that becomes very apparent in some of the key features in this issue.

Although sun was a scarce resource at the recent World Defense Show, held near Riyadh in March, when a torrid shamal affected the plans for a military flying display. However, in all other respects, the inaugural show was an unqualified success story packing in visitors, official delegations and exhibitors alike.

The event was very much about the “new” open Saudi Arabia. From immigration officials to security guards there seemed to be a new spirit of welcome.

The ambitious ‘vision 2030’ plan to have 50% of aerospace and defence spending and value within the

kingdom will rely on good relationships, collaboration, and equitable fairness in the business partnerships.

At WDS there were plenty of examples of the good intent, and a string of announcements moving manufacturing to the kingdom from the US, Europe and India made it even more real.

Whether or not the 50% will be reached in the next eight years is debatable, but there is no doubt the intent is there.

With Saudi’s huge defence budget – one of the largest in the world – as it protects itself against the drone and missile attacks from Iranian-backed Houthi rebels, it is a win-win

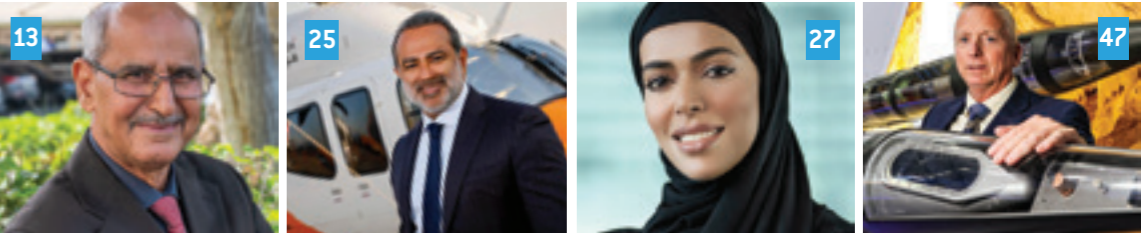
situation for Saudi companies and foreign manufacturers.

It’s not just in the defence sector either. The nation’s MRO business, SAEI, a division of national carrier Saudi Arabian Airlines, is casting off its legacy ties. The largest MRO facility in the region, with an engine test cell to match anything in the world, is well on the way to completion and its CEO, Fahd Cynndy, is calling on competitors and suppliers to join an alliance of MROs to work together to meet the demands.

And when we see airlines like the Saudi regional budget carrier, Flynas, upping its orders for new aircraft to 250, to become the region’s largest low-cost carrier, you start to see why demand could be so high.

Watch this space.

**Alan Peaford, editor-in-chief**



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Bander Almohanna: “We see great opportunities for expansion.”  
PICTURE: FLYNAS.

Flynas board raises aircraft order to 250

Flynas, the domestic and international low-cost airline based in Riyadh, Saudi Arabia, has announced that it is aiming to increase its outstanding orders to 250 aircraft.

CEO and MD, Bander Almohanna, said: “We see great opportunities for expansion, supported by the strategic location of the kingdom and the prospects opened by Saudi ‘vision 2030’ for the air transport sector.

“We will explore aircraft of different capabilities to fly to new destinations, increasing the connection of the world to the kingdom. This will support tourism and contribute to the transportation of pilgrims and Umrah performers.

“Flynas is currently in discussion with aircraft manufacturers in drafting agreements,” he added.

Once those agreements are concluded, Flynas will become the largest low-cost airline in the MENA region. It will also be the largest owner and operator of modern aircraft in the region.

Egypt in \$2.2bn Super Hercules deal

Egypt is to purchase 12 C-130-30 Super Hercules from Lockheed Martin, valued \$2.2 billion, to modernise its air force. The deal also includes air defence radars worth \$355 million.

Lockheed Martin is delivering the upgraded sensor kits as part of a remanufacture effort to upgrade D-model Apaches to E-models.

The upgraded sensor provides high-resolution, high-definition, near-infrared and colour imagery on cockpit displays.

Egypt has also requested 12 spare Rolls-Royce AE-2100D turboprop engines, 30 embedded GPS/INS (EGI) with GPS security devices and seven multifunctional information distribution system – low-volume terminal block upgrade two (MIDS-LVT BU2) Link 16 datalink terminals.

Work will be undertaken at the Boeing Apache Helicopter Plant in Arizona, with an estimated completion date of July 2024.

Gulf Air sponsors show

National carrier, Gulf Air, has signed an agreement to sponsor the Bahrain International Airshow in 2022 and 2024.

Acting Gulf Air CEO, Captain Waleed AlAlawi said: “Bahrain is growing on the international scene, and Gulf Air is one of the few companies that has been able to challenge the economic crisis that the world experienced during the pandemic.

“Bahrain has become a preferred economic destination for major global trade, as well as for tourists, especially after easing travel restrictions and procedures to obtain a visa, all of which can now be done very smoothly and easily.”

Istanbul nights

Turkish Airlines will provide a one-night stay in a four-star hotel for economy class, and a two-night stay in a five-star hotel for business class in Istanbul as a stopover service. It will use a hotel voucher scheme issued after the ticket purchase.



Green: The new transporter is zero-emissions and 100% electric. PICTURE: QATAR AIRWAYS CARGO.

New electric transporters for Qatar Airways Cargo

Engineering company Gaussin, and Qatar Airways Cargo, have successfully tested and commissioned a new automotive multi-directional transporter (AMDT) for air cargo pallets, with production already under way for delivery this summer.

The companies signed an agreement in 2020 for the delivery of six fully electric AMDTs, including an option for 50 units.

The new transporter is zero-emissions, 100% electric and compatible with all types of unit load devices (ULDs). It has a payload of up to 7 tonnes, a battery life of up to 6 hours, and is rechargeable, allowing 24/7 use.

The AMDT serial production version will be locally assembled in Qatar. The aim is for these new electric units to gradually replace the cargo airline’s diesel pallet carriers.

Capable of operating both inside and outside of the cargo terminal within minimal space, the AMDT will reduce the normal footprint required for manoeuvring, resulting in additional storage space and ensuring effective readiness of all cargo to be loaded on to the aircraft.

■ Gulf airlines boosting new freighter types, page 10.

Runway closure

Dubai Airports has confirmed plans to close Dubai International’s (DXB) northern runway for a 45-day period between May 9 and June 22. This is to carry out a complete refurbishment that will ensure continued safety and efficient operations.

DXB is also to overhaul its air traffic management (ATM) system with the introduction of Thales’ TopSky air traffic control (ATC) system to support the northern Emirates airspace.

Cargo decrease

Middle Eastern carriers experienced a 5.3% year-on-year decrease in cargo volumes in February. This was the weakest performance of all regions, and followed a deterioration in traffic on several key routes, such as Middle East-Asia, and Middle East-North America.

Looking forward, there are signs of improvement as data indicates that the region is likely to benefit from traffic being redirected to avoid flying over Russia.

Capacity was up 7.2% compared to February 2021.

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### KLM anniversary

KLM Royal Dutch Airlines (KLM) has marked the 50th anniversary of the airline's first passenger flight to Dubai, which arrived on April 5 1972.

Simon Scholte, general manager Middle East, Air France KLM said: "This is a very special occasion. It's a time to pause briefly and reflect on Dubai's remarkable progress over the last 50 years and to express our gratitude to the Dubai Government and the airport authorities for their tremendous support."

### Tel Aviv scheduled

Emirates will begin daily services to Tel Aviv from June 23.

Adnan Kazim, COO, Emirates Airline said: "We look forward to finally offering customers substantial connectivity to and through our Dubai hub as Covid travel restrictions continue to ease around the world and more borders open up."

### Cargo boost

Emirates SkyCargo has reactivated its cargo hub in Dubai South for dedicated freighter aircraft operations.

The move will mark a return to dual hub cargo operations in Dubai for the air cargo carrier after a period of nearly two years.



**Summit speakers: Adel Ali, Kuljit Ghata Aura, and Ismail Abdulla.**

PICTURES: AIR ARABIA, BOEING, STRATA

## Industry leaders head for Abu Dhabi

The Global Aerospace Summit, hosted by Mubadala, will return from May 24-26 at Emirates Palace, Abu Dhabi. The event hosts a gathering of global leaders focusing on the strategic growth of the aerospace, defence, aviation and space industries.

Aerospace sector topics for discussion will include, among others, the future fleet and sustainable aviation fuels.

In defence, subjects will include data-driven defence tech, asking where the money will be spent and what the technologies of the future will be; and looking at artificial intelligence (AI) as the critical enabler of autonomous unpowered air vehicles (UAVs).

New to this year's event are the leadership technology briefings. The tech expert-led briefings will look at the applicability of new technology in aerospace, educating decision-making buyers and generating leads for your business.

An elite group of speakers will be at the event, including; Adel Ali, group chief executive officer at Air Arabia, Kuljit Ghata Aura, president, Boeing Middle East, Turkey and Africa; Ismail Abdulla, chief executive officer, Strata Manufacturing, and Ryyan Tarabzoni, CEO at Jeddah Airports Company.

■ Dubai double, page 51.

### Indian route trick

Oman low-cost-carrier, SalamAir, has announced non-stop flights to four Indian cities – from Salalah to Calicut and from Muscat to Jaipur, Lucknow, and Trivandrum.

Captain Mohamed Ahmed, CEO of SalamAir, said: "Our aim is always to

provide our customers with greater connectivity and convenience, and the addition of these routes will cater to the expat population, business travellers, and tourists.

"Our strategic cooperation with Oman Air enables us to serve the Indian market and augment

demand and traffic volume, thus fulfilling the Oman vision 2040."

### Turkish growth

Turkish Technic recorded 15.7% growth in 2021, compared to the previous year, with \$1,034 billion revenue. It increased its market share to 1.6%.

### Texel deal leads to Istanbul route

DHL Express MENA recently launched a direct flight from Bahrain to Istanbul, following the signing of a lease agreement with Texel Air.

This move supports DHL's Middle East network optimisation strategy, which aims to increase air efficiencies and enhance transit times.

The new Bahrain-Istanbul-Bahrain flight will be operated six times weekly and will significantly reduce transit times by 24 hours for time-definite shipments between Turkey and the Middle East.

■ Texel Air loaded up, page 11.

### Sharjah win

Sharjah Airport has won the 'best airport in the Middle East' award in the five-to-15 million passengers-per-year category and the 'voice of the customer' accreditation given by the Airports Council International (ACI).

Ali Salim Al Midfa, chairman of Sharjah Airport Authority, said: "These latest achievements have stemmed from our many exceptional projects launched during this Covid-19 pandemic."

## Magnificent sevens – Emirates Group opens solar carport

The Emirates Group has opened the region's first and largest solar carport at a sporting facility.

Officially launched by Emirates Group chairman, HH Sheikh Ahmed bin Saeed Al Maktoum, the solar carport provides shaded car parking for more than 550 vehicles, including charging lots for electric cars.

It will also generate sufficient clean energy to power all of the stadium's operations throughout the year, except in the week of the Emirates Dubai 7s, where supplementary power will be required for the city's biggest sporting and lifestyle event.

Sheikh Ahmed said: "The Emirates Group already utilises solar-powered clean energy in our operations, including buildings at our engineering centre and Emirates Flight Catering. This new solar carport is our latest commitment to reducing our carbon footprint, in line with Dubai's vision to transform into a carbon-neutral economy by 2050."



**Six at Sevens:** HH Sheikh Ahmed (centre left) is pictured with (from left): Balwinder Singh, facilities & turf ops manager, The Sevens Stadium; Thomas Burwell, general manager, The Sevens Stadium; Boutros Boutros, Emirates' divisional senior VP for corporate communications, marketing and brand; Ali Al Soori, Emirates' executive VP, chairman's office, facilities & project management and non-aircraft P&L; and Matthew Burn, sales, marketing & operations manager, The Sevens Stadium. PICTURE: EMIRATES.



# Trent XWB

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Managing ops

Bahrain Airport Services (BAS) has signed a contract with multinational information technology company, SITA, to manage its ground-handler operations as cost-effectively as possible.

It will deploy SITA Airport Management, a key component of which is the SITA Mobile Resource Manager, which calculates optimal staffing levels, creates optimised rosters, and gives a real time view of task allocations and activities at Bahrain International Airport (BIA).

Through the new system, agents will be offered mobile access to enable data entry at the time and place of their operations.

Egypt MRO boost

EgyptAir Maintenance and Engineering welcomed the first visit of a ULS Airlines Cargo A330 for D-check at its Cairo base.

The Egyptian MRO’s CEO, Yehia Zakaria, said: “This was the first technical cooperation with the Turkish carrier and we are looking forward to expanding cooperation in the future.

“The company is working on maintaining the customer base and gaining the trust of more customers at the regional and international levels.”

Taking to the air: Boeing F-15QAs in flight. PICTURE: BOEING.



Qatar F-15 training switches to Idaho

When Qatar signed a deal for 36 F-15QA fighters in 2017, it included associated weapons and US-based training. Some training of an initial aircrew cadre was undertaken at Scott Air Force Base, a joint-use airport also known as MidAmerica St Louis Airport in Mascoutah, Illinois. Qatar military leaders reportedly asked for follow-on

training with the US Air Force at a base housing the F-15E Strike Eagle, which is similar to the Qatari variant. Only two air bases met the requirement, Seymour Johnson Air Force Base in North Carolina, and Mountain Home Air Force Base, Idaho. The latter has now been chosen, due to the extra space available there.

Practical training

EgyptAir Training Academy has implemented theoretical and practical training on the Boeing B777 and B737-800 simulators for a number of Indian pilots.

Mumbai-based Aeon Software to develop e-learning courses. “At GAA, we are dedicated to providing outstanding training services to students all over the world,” said GAA CEO, Captain Dhafer Al Abbasi.

Learning a new way

Bahrain’s Gulf Aviation Academy has signed a new partnership agreement with

Wise move Qatar Airways Cargo and WiseTech Global, a

provider of software solutions to the logistics industry, have launched a direct e-booking solution between their global operating systems. The connection enables freight forwarders to choose their flight and confirm a booking with Qatar Airways Cargo without having to leave WiseTech’s CargoWise platform.

Mumbai resumes

EgyptAir will resume its direct flights to Mumbai this month. This is a part of the national carrier’s role in expanding its route network and supporting the tourism movement by returning air traffic to its normal operating rates following the Covid-19 pandemic.

Jazeera shareholders snap up dividend

Kuwait-based Jazeera Airways’ shareholders have approved a board recommendation to distribute a 32% cash dividend – worth approximately KD 7 million (\$22.96m). Dividends have been suspended for the last two years because of the Covid-19 pandemic. The airline’s chairman, Marwan Boodai, said: “Jazeera Airways has once again showcased the success of its business model in adapting in times of crisis, safeguarding its cash position and shareholders’ rights. “The airline grabbed new opportunities that were presented during the pandemic, enabling it to expand its services, generate revenue from new sources, and return to profitability in record time. “Today, Jazeera is a success story for the Kuwaiti private sector, as well as the regional and global aviation sector. The airline continues to provide reliable services to its customers, delivered by an experienced team, adding value to its shareholders and contributing to the local economy.”

PICTURE: JAZEERA AIRWAYS.



Miles better

Abu Dhabi Airports and Etihad Guest have signed an agreement to launch the ‘miles on the go’ product at Abu Dhabi International Airport. Etihad Guest members can now instantly earn and spend Etihad guest miles when shopping at participating merchants located at Abu Dhabi International Airport. By downloading the Etihad Guest app and linking up to five Visa cards to their profiles, members can spend their miles and receive cashback on their cards.



PICTURE: EFTA.

London calls Dnata

Dnata, an emirati airport services provider, has inaugurated a new, state-of-the-art cargo centre at London Heathrow airport (LHR). Part of the company’s ‘Dnata City East’ complex, the new 10,500sqm bespoke facility was designed to cater for all imports and operate in conjunction with the company’s existing 22,500sqm facility, which opened in September 2019.

Mauritius bound

Emirates will be operating twice-daily flights on its flagship A380 aircraft to Mauritius from July to meet the increase in demand for travel to the island nation.

That’s a wrap

Emirates has wrapped up its efforts at Expo 2020 Dubai. As the premier partner and official airline of Expo 2020 Dubai, Emirates played a significant role in transporting visitors to the

event from more than 120 destinations, across six continents. More than 40 Emirates’ aircraft carried special Expo liveries.

Vaccine life-saver

Emirates SkyCargo has transported more than one billion doses of Covid-19 vaccines on its aircraft in the last 18 months. Some 4,200 tonnes of vaccine has been moved to more than 80 destinations using in excess of 2,000 Emirates flights. Close to

two-thirds of the one billion doses were transported to developing countries.

SAMI in new JV

Saudi Arabian Military Industries (SAMI) has announced a preliminary joint venture agreement with Boeing. Under the deal, the parties will work together through a limited liability company to provide maintenance, repair and overhaul and sustainment services for military rotary

platforms currently operated in the kingdom.

Oman agreement

Oman Air and SalamAir have announced greater cooperation to align their networks for passenger growth in and out of Oman. Abdulaziz Al Raisi, chief executive officer of Oman Air, said: “This signals the start of closer alignment between Oman Air and SalamAir at a time when the sector is starting to show signs of recovery.”

Etihad unveils Sustainability50 A350



Inside: Etihad’s A350 will provide 327 economy seats with immersive IFE systems. Picture: Etihad Airways. PICTURE: ETIHAD AIRWAYS.

Etihad Airways unveiled its new Airbus A350-1000 on a special inaugural commercial flight from Abu Dhabi to Paris last month. The aircraft is the first A350 to be operated by a UAE airline, and the first of five A350s set to join Etihad’s fleet over the coming months. Tony Douglas, group chief executive officer, said: “Our teams have worked closely together to craft a product and travel proposition that will ensure every journey with Etihad is a choice well made – both for our guests and for the planet. “With highly efficient fuel consumption and CO2 savings, the A350 will support our goals to reduce carbon emissions and deliver an unmatched flight experience for our guests.” The aircraft, named Sustainability50, carries a livery in recognition of the 50th anniversary of the federation of the UAE and Etihad’s commitment to net-zero carbon emissions by 2050. ■ Charting a SAF route, page 27.

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Etihad joined Singapore Airlines in expressing its intent to each purchase seven A350Fs, paving

# CHARGE OF THE FREIGHT BRIGADE...

*Air cargo operations have become more important for airlines than even before. **Alan Peaford** reports on how Gulf carriers have helped boost fleets by funding the launch of two new freighter options from the leading airframers.*

Tony Douglas, group CEO of Etihad, described the A350 as a “remarkable” aircraft. “As our cargo operations continue to overperform and we work towards a more sustainable future built upon the world’s youngest and most fuel-efficient fleet, the addition of the A350F will play a key role in driving our long-term cargo strategy and achieving our 2035 target to reduce CO2 emissions,” he said.

Featuring advanced technology from the new 777X family and the proven performance of the

# TEXEL AIR LOADED UP FOR THE LONG HAUL

*The Gulf's cargo boom – and Bahrain's growing role within it – has been underlined by two new developments.*

"The 737-800BCF has a 22.9 tonne payload over 12 pallet positions and its

**"We are always keen to explore ways to enhance our commercial partnerships," said Gulf Air's interim CEO, Captain Waleed Al Alawi. "Logistics is an integral part of our day-to-day operations, and we are extremely impressed with services provided by DHL."**

ALAN DRON



IMAGE: AIRBUS

Sustainability is vital for both carriers. The Boeing aircraft features the GE9X engine, and introduces the latest generations of heat-resistant

☐ ☐ ☐ ☐ ☐

Airbus is pitching its wide-body against the successful Boeing 777F, offering at least 3t of additional payload and 11% more volume – and

Powered by Rolls-Royce Trent XWB engines, the aircraft will have 99% airframe compatibility – and full engine compatibility – with the passenger A350, and share its type rating. ▲

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**Captain Ahmed Masood Alwani:**  
“Nobody is supporting us. We’re doing it from our own income.”

PICTURE: BILLYPIX.

**Left: Yemenia’s fleet of two Airbus A320s has risen to four. They were joined by a new Airbus A330-200 in February 2022.**

PICTURE: WIKIMEDIA COMMONS.

## Yemenia growing stronger – despite the challenges

*Undeterred by the combination of the continuing civil war and the global pandemic, Yemen’s national airline has succeeded in buying new equipment. Alan Dron reports.*

Remarkably, despite the continuing disruption and dislocation caused by both the country’s internal conflict and Covid-19, Yemenia has saved enough money to be able to buy – not lease – two almost-new Airbus A320s.

Manufactured in 2019 and 2021, they double the airline’s single-aisle fleet.

At the Arab Air Carriers Organization annual meeting in Doha in November, the airline was also in the process of acquiring an ex-Air Mauritius Airbus A330-200 for longer-haul sectors. The only outstanding technical requirement at that time was an engine borescope inspection, the results of which were awaited.

This latest addition to the fleet, which is replacing the airline’s elderly A310, arrived in February this year after being repainted in Cairo.

The wide-body will be used on the same route network served by the single-aisle members of the fleet, said the airline’s chairman, Captain Ahmed Masood Alwani.

Yemenia is owned 51% by the Yemeni Government and 49% by its Saudi Arabian counterpart, but neither shareholder has contributed to the cost of the new aircraft, said the chairman. “Nobody is supporting us. We’re doing it from our own income.”

A side-effect of the continuing conflict in Yemen has been to funnel more travellers to Yemenia. The perceived risk of operating into the country’s airports has meant high insurance

costs for foreign airlines, which has dissuaded many carriers from operating into the southern Arabian nation. This gives Yemenia an advantage in picking up traffic.

However, Alwani made it clear that it continues to operate not only as a commercial business but as a humanitarian one.

At the start of the pandemic, many Yemenis were overseas and found it difficult to return home as countries quickly closed air services. Some, for example, were in India for medical treatment and were stranded there until the airline operated empty flights to Indian airports to ferry them home. The Yemeni Government was unable or unwilling to organise the repatriation services, but Yemenia felt that it had a responsibility to bring its compatriots home.

A once-weekly round-trip to Mumbai is still in the airline’s schedules, but most sectors are understandably closer to home.

The busiest route, by far, is Cairo, which is served two to three times daily. Jeddah is another regular destination with four flights a week, followed by Amman (three per week), Khartoum and Djibouti (twice) and Riyadh (once). Socotra is served seasonally. Passengers are almost 100% Yemeni.

Additionally, the conflict means that the airline is restricted to operating at certain times of the day and permission has to be obtained to fly particular flights.

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The combination of Covid and the civil war does sometimes disrupt operations. Like many airlines, Yemenia was forced to halt flights for around two months at the start of the pandemic and suspensions of anything up to two weeks can still occasionally occur. However, the airline has – remarkably – continued to survive. It is today based in Aden, on the south-west coast, and Say’un, in the centre of the country.

The airline has also had to cope with more customary operational difficulties: “We’re suffering from the cost of fuel,” said Alwani. “It’s very high, especially in Yemen.” The airline has taken measures to reduce its operating costs as a result.

The coming year offers slightly brighter prospects, said Alwani: “We have the money. We have the traffic.”

Yemen has a population of 30 million, significantly more than any other state on the Arabian Peninsula with the exception of Saudi Arabia. Although many people are unable to fly because of the conflict, they are still moving. “People move in and out of Yemen or emigrate, going to Europe etc,” explained Alwani.

The airline has the capacity to increase frequencies if necessary: “We have some capacity,” he concluded. ▲

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**into life**

## Jordanian carrier set to charter a new course

*Charter specialist, Jordan Aviation Airlines, aims to move increasingly into scheduled services, including long-haul routes. Alan Dron reports.*

It is no easy task to survive as a small, privately owned airline in a region where the vast majority of rivals are state-owned.

Jordan Aviation Airlines has succeeded in doing so, through a series of changes of business model since it started flying in 2000.

JAV, as it was originally known, was founded by entrepreneur, Captain Mohammed Al-Khashman. Its first few years were spent largely in providing charters for United Nations peacekeeping troops. "The UN business was our bread and butter," explained vice-president commercial, Osama Quntar.

These flights continue today, although at a much lower level than previously.

Having gone from leasing out its initial aircraft, the company successively moved from charters, through what Quntar described as 'scheduled charter', to an increasing emphasis on full scheduled services.

The last stage in this process has, almost inevitably, been disrupted by the pandemic, but the company intends to push on with the transformation when economic conditions improve.

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Plans to serve North America and China were well-advanced before the pandemic, which erupted before the necessary approvals could be obtained from the relevant authorities. However, the airline hopes to revive its plans.

North America has been a target for some time, both to serve Arab communities there and to bring tourists to Jordan. A study of the market saw the company settle on twice-weekly services to Newark and Toronto, with a refuelling stop in Shannon, Ireland.

One problem hindering long-haul services is Jordan Aviation's lack of interline agreements with other carriers. To solve this problem, the company is now looking at creating its own regional network, to funnel passengers into its planned long-haul network.

For this reason, it is in the process of acquiring a batch of De Havilland Aircraft of Canada Dash 8 turboprops. The plan is to run multiple daily frequencies from points around the region, to feed the planned long-haul services, which also tentatively include Beijing and Guangzhou.

"We're negotiating for two Dash 8s, but the plan is to introduce six," said Quntar. "We're keen to have the multiple daily frequencies."

It would be helpful, he added, if the Jordanian Government would lower its taxes on aviation that, at the time of writing, were around JOR56 (roughly \$79) per passenger. With the government trying to increase tourism to Jordan, he believed it would make sense to make fares more attractive.

If the Dash 8s materialise, they will add to what is already a heterogeneous fleet that includes Airbus A330-200s, A320s, Boeing 767-200s and several variants of 737s. In theory, this should raise maintenance costs considerably, but the company has its own maintenance, repair and overhaul (MRO) facilities, which eases that burden.

'Scheduled charters', which have featured significantly in the company's operations in recent years, are charters that operate so frequently that they might almost be regarded as scheduled. Flights to Istanbul, for example, frequently operate on a twice-daily basis.

Scheduled services are currently operated around the Middle East. Prior to Covid, the company flew to around a dozen destinations. These have been cut back to Cairo, Kuwait, Sharjah, Dubai and Baghdad, although the last of these was suspended temporarily in 2021. Quntar, speaking at the Arab Air Carriers Organization annual meeting in Qatar last November, said that services were scheduled to resume imminently to Sharm El Sheikh and Jeddah.

Charter flights continued to be operated throughout the crisis, which helped keep the airline's finances ticking over, while one of the company's two A330s had its seats removed to act as a temporary freighter to cope with demand for cargo capacity.

Longer-term fleet plans remain to be determined, he added, but it was possible that the aircraft operating the company's scheduled services could be separated from those handling other duties. ▲



▼ **We're negotiating for two Dash 8s, but the plan is to introduce six.** ▲  
**Osama Quntar**

PICTURE: BILLYPIX.





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SES Fly Certain

# Alliance can make a world of difference to RAM



Maximum capacity: RAM expects to have more than 50 aircraft in operation this summer.  
PICTURE: RAM.

Royal Air Maroc (RAM) chose Abidjan to kick off a major marketing and communication campaign in Africa to celebrate membership of the Oneworld Alliance. **Vincent Chappard** talked to RAM chairman and CEO, Habelhamid Addou, and Rob Gurney, CEO of Oneworld.

With its 14 airlines, the Oneworld network serves around 1,000 destinations in more than 170 territories with hundreds of airport lounges. As a new member of this global alliance – the first African member – RAM is eager to play a pre-eminent role in the region by expanding its network.

Coronavirus has held back many network opportunities in the last year or two, but RAM was in the starting blocks ready for the reopening of Morocco's borders in early February. The national flag-carrier launched its campaign in Abidjan, targeting French-speaking countries, before moving on to Lagos to reach English-speaking nations.

"We are now engaged on the path to recovery and Africa is at the heart of our development strategy," said RAM chairman and CEO, Habelhamid Addou.

"We have decided to highlight the benefits and the multitude of global connection possibilities that our membership of Oneworld offers to our partners and customers."

From its bases in the kingdom, RAM now has access to more than 1,000 connections worldwide. It will benefit from alliance hubs in Doha, London Heathrow, Madrid, Miami, Moscow Domodedovo, and New York-JFK alongside the Oneworld programme.

"We are in a new strategic paradigm," underlined Addou. "This alliance will enable the growth of the African market."

Today, the Oneworld network serves 170 countries around the world. Its airline members carried 580 million passengers in 2019. The alliance is enthusiastic about the partnership with RAM.

"Oneworld's network has significantly strengthened in Africa, providing excellent connectivity to business and leisure destinations in the region," said Rob Gurney, Oneworld CEO.

"As global travel resumes, RAM customers can look

forward to more rewards and benefits when they fly with the airline and its Oneworld partners."

This partnership opens new opportunities for RAM after a rather complicated period. The airline had to stop its Boston, Vienna, Athens, or Germany routes and downsize its fleet as part of a restructuring plan.

"Today we are the African airline which, through its very dense network, has the largest number of connections between Africa and Europe, and between Africa and North America," said Addou.

He noted that air transport was rebuilding and that the summer season looked promising, which should bring RAM closer to its 2019 operations in terms of fleet and connectivity.

"We expect to be at our maximum capacity this summer with all 50 aircraft in our fleet – six ATR72-600s, four Embraer 190s, 28 B737-800s, two B737 MAX8s, five B787-8s, four B 787-9s, and one B767-300 freighter – and an additional charter service of five-to-ten aircraft," explained Addou.

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In 2019, RAM had transported 75 million passengers with a turnover of \$2.6 billion. It now wants to focus on industrial cities, where there is more demand, and strengthen its presence particularly in sub-Saharan Africa (Abidjan and Bamako).

"We are bringing Africa to Oneworld, so it is very important to invest in the continent and for this alliance to have access to a promising territory," he added.

RAM has kept two B737MAX aircraft in its fleet but the delivery of two others has been cancelled. The airline is now very satisfied with the operations of this aircraft.

Addou also revealed that the inaugural flight between Casablanca and Tel Aviv on March 14 was an historic moment for the airline. RAM and El Al, the Israeli flagship carrier, signed a codeshare agreement after the flight.

"There are nearly 1.5 million Israelis of Moroccan origin," said Addou. "These flights are an additional means to bring Moroccans closer to the world and their country."

RAM expects turnover to return to a pre-Covid normal within two years.

■ Morocco on road to recovery, page 56. ▲



All for One: Habelhamid Addou, Chairman and CEO of Royal Air Maroc and Rob Gurney in Abidjan.

PICTURE: VINCENT CHAPPARD

## ABU DHABI STEPS UP AS ETIHAD SHEDS SUBSIDIARIES

*Abu Dhabi has taken a significant step towards building an aviation eco-system in the emirate, apparently trying to emulate neighbouring Dubai's success in creating a major economic revenue-generator. Alan Dron reports.*

Abu Dhabi-based holding company, ADQ, will be the new home for six subsidiaries of Etihad Airways. Two more Etihad subsidiaries are moving to Abu Dhabi National Exhibitions Company (ADNEC).

The transition, which is still under way, sees Etihad Engineering, Etihad Airport Services Cargo, Etihad Airport Services Ground, Etihad Aviation Training, Etihad Secure Logistics, and Etihad Technical Training transferring to ADQ.

They will form part of a new aviation company within ADQ, making them part of the holding company's wider mobility and logistics portfolio, which includes Abu Dhabi Airports and AD Ports Group.

Meanwhile, Etihad Airport Services Catering will join ADNEC's catering business, Capital Hospitality, while Etihad Holidays will become part of ADNEC's tourism promotion business, Tourism 365.

The departures mean that Etihad Airways effectively becomes a standalone company.

"This agreement will allow us to place 100% of our focus on Etihad Airways to capitalise on



**Tony Douglas:** "This agreement will allow us to place 100% of our focus on Etihad Airways to capitalise on recovering travel demand."

recovering travel demand," explained Etihad Aviation Group CEO, Tony Douglas.

The aim appears to be a duplication of neighbouring Dubai's policy of establishing an aviation eco-system that will make a major contribution to Abu Dhabi's economy as it diversifies away from hydrocarbons.

Dubai has had considerable success with its longstanding policy of building an integrated aviation sector, which today contributes a remarkable 30%-plus of the emirate's gross domestic product (GDP).

Subsidiaries such as Etihad Engineering and Etihad Aviation Training have grown significantly in recent years.

Both now take on significant amounts of third-party work in the MRO and aircrew training sectors respectively.

□ □ □ □ □

"Employees currently working for the subsidiary businesses will transition... to a new company under ADQ or ADNEC," an Etihad spokeswoman explained. "We are working hand-in-hand to ensure that the process is managed as seamlessly as possible for all involved – staff, customers, suppliers and business partners."

ADQ's CEO, Mohamed Hassan Alsuwaidi, added: "With the proposed addition of Etihad's experienced aviation support businesses to our new dedicated aviation company, ADQ is primed to develop an integrated aviation platform.

"We are well-positioned to unlock the growth potential of these aviation services businesses." ▲



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# BLUE-SKY BOUTIQUE OFFERS FLEET FOR HIRE

*Gulf Air is broadening its services by offering its aircraft for private charters. Alan Dron reports.*

In a move to develop a new revenue stream, Bahraini flag-carrier, Gulf Air, has decided to make its fleet of airliners available to individuals or organisations for private charters.

The move adds an additional service to the scheduled operations for which the airline is known.

Wealthy extended families in the wider Arabian Gulf region often charter aircraft for private flights – for example, to Europe for summer breaks, or to Africa or Pakistan for

hawking trips. Some airlines also operate charter services for groups such as sports teams and their support staff.

The launch of private charter services will give Gulf Air’s clientele the ability to book direct charter flights to destinations off the airline’s normal route map, at times that suit their requirements. The initial such charter, for example, was to Malaga, southern Spain, a location not normally served by the Muharraq-based airline.

It foresees its new service also being used for events such as ‘destination weddings’ and corporate delegations.

The move is one more step in the airline’s pathway to transforming itself into a ‘boutique carrier’, reinforcing its focus on product and customer experiences that allow it to compete with larger rivals in the region, by offering something different.

Following the Malaga flight, Gulf Air’s interim CEO, Captain Waleed Abdulhameed AlAlawi,

described it as “yet another achievement to add as a direct result of the success of our boutique strategy, as we continue to cater to passengers’ preferences in the tourism and travel sector”.

The new charter concept is another aspect of the airline’s business model to offer its boutique services to a more niche clientele, while highlighting the key services the airline is renowned for.

As well as handling all the background logistical details of a charter, the company, like any executive jet operator, will also accommodate requests for specific facilities in the cabin, such as customised menus.

The airline is making both its Airbus A320-family and Boeing 787-9 aircraft available for the new venture. ▲

**Available for private charter:**  
**The largest aircraft in the**  
**airline’s fleet, the Boeing 787-9.**  
PICTURE: GULF AIR.



# MERKUR GEARS UP FOR HIGHER DEMAND

Merkur Charter is part of the Merkur Group, a leading conglomerate of aviation services in Turkey.

The company provides aircraft management solutions to the business aviation community, as well as support systems for different aircraft types.

The aviation division holds representation licences granted by the State Airport Authority.

As general sales agents serving 62 airlines worldwide, and providing local representation services in Turkey, Merkur is determined to keep its competitive edge through its in-house handling team, which has full control of operations for a seamless customer experience.

“Our strategy is to maintain a clear goal in any business activity we have,” explained Halis Din, Merkur Holding and Group Companies general manager. “We monitor the changing trends and events in the market and take prompt decisions, putting solutions into action before many others do. We have a good leadership and a very dynamic team. We are known for getting the job done with quality.”

The company’s fleet comprises a wide range of aircraft, including VVIP jets, to offer flexible,



**Busy: Merkur Charter is headquartered in Istanbul Florya, next to Ataturk Airport.** PICTURE: MERKUR HOLDING.

tailormade services in areas including business aviation, cargo and passenger charter, medical and humanitarian flights, and helicopter rental.

The private business jet segment is booming in Turkey and the air taxi concept is becoming trendy. Merkur recently took delivery of a new Hawker 400XP, to be based out of Istanbul and Athens. It aims at providing a cost-effective air taxi option for short-haul flights.

The company also welcomed a Learjet 60XR – SX-AEK (with VIP & ambulance configuration) in Athens in early February. With a range of 2,040nm, the

Learjet can reach northern European countries and the Middle East without a fuel stop.

Merkur Charter also provides air services in unplanned circumstances, such as emergency evacuation and repatriation flights.

The future is looking good. The business aviation sector has recovered about 85% of pre-Covid flight activity in countries with large domestic markets, as well as the MENA region. Although cross-border flight activity has not reached these levels yet, Halis Din is gearing up for the coming years. ▲

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As the Middle East region diversifies from its traditional oil and gas-dependent economies there are new opportunities for the rotary-wing sector. **Alan Peaford** reports.

# Mine your own business

For more than half-a-century many MENA countries have depended on oil and gas for valuable export revenues – but things are changing as they turn their attention to investment in non-oil sectors, such as mining, to boost their economies. And, according to Sameer Rehman, Bell’s managing director, Africa and the Middle East, this could be good news for the Textron Aviation helicopter business.

“We have traditionally been the supplier of choice in the oil and gas market through the Bell 412, a legacy product, but also one that is advanced,” said Rehman. “We have also been focusing our innovation and energy into the Bell 525, and the world will soon see that aircraft both in the oil and gas and the VVIP space with great success.” With the UAE, Saudi Arabia and Qatar exploring with a number of international companies the potential of various mineral deposits, such as copper, silver, gold and iron ore, there are even more opportunities. Those heavily involved in the region’s mining industry

are constantly looking for new ways to streamline the process of transporting minerals to their desired locations, which is currently reliant on trucks. Historically, the process of transportation has always faced challenges and delays, with many mines in inaccessible locations. With the use of digital technologies and unmanned systems such as drones, mining firms can seek to save time and money, while increasing efficiency in all aspects of their operations.



According to Rehman, helicopters like the Bell 505, can solve long-standing logistical challenges. These aircraft can be used to carry heavy loads and assist in the transportation of vital equipment to and from remote and difficult-to-access locations. The capabilities of rotorcraft in assisting with complex and heavy logistical challenges come into play. The Bell 505 has a payload of up to

907kg and an altitude range of 22,500 feet (6,096 metres) thanks to its Arrius 2R engine. The Bell 505’s extreme towing capabilities, as well as its power-to-weight numbers, mean that it can operate at a lower cost than other, larger aircraft. This, in turn, offers a new solution for the mining industry in the Middle East region. “It is a new segment, a growing segment. I think it’s still in its infancy,” Rehman said. “In the Middle East, where mining is taking front and centre stage, helicopter usage will rise. I think, as with most new entrants into a particular economy, it takes a little bit of time for people to realise there are more efficient and effective ways to do things.” While Bell is looking at new markets, it is also working on new technologies and sustainability. SAF is becoming standard for Bell equipment. Rehman said that another transformative technology that could reshape the mining industry in the region is the use of uncrewed aerial vehicles (UAVs) in operations. “UAVs have been used traditionally in



**Sameer Rehman: “In the Middle East, where mining is taking front and centre stage, helicopter usage will rise.”**

PICTURE: BELL.

geological mapping missions, but never to carry significant payloads,” Rehman said. In an effort to save time and costs, UAVs, such as Bell’s autonomous pod transport (APT), might just be the answer. The vehicle is capable of autonomous flight, as well as taking off and landing vertically. It has demonstrated the ability to carry a payload of 110lbs (50kg), offering a worthy solution for companies looking to transport goods away from mining sites.



“With the Bell 505, we have an aircraft that has shown time and again that it can be trusted to operate in high-risk locations and with heavy payloads, providing a capable machine for logistics operators,” said Rehman. “With APT and its autonomous flight capability and intuitive interface, the simplicity of operation means that it can go further, faster and carry payloads at increased ranges, all while saving time, cost and energy.” ▲

## ARAMCO COMPLETES FLEET RENEWAL PROGRAMME

The Milestone Aviation Group completed the final delivery in the Saudi Aramco medium helicopter fleet renewal programme in February. The programme, first announced in July 2018, saw the delivery of 21 high-spec Leonardo AW139 helicopters to the Saudi oil company, while five Airbus H145 helicopters also formed part of the deal. Aramco also extended the leases of two further AW139 helicopters. Aramco awarded the medium and light-twin fleet renewal contract to Dublin Ireland-based Milestone, and Leonardo, after a competitively tendered process. Milestone, an aircraft operating lease company focusing exclusively on the helicopter market, had the ability to offer a solution for the entire medium helicopter fleet. This, along with the proven capabilities of the AW139, and the two companies’ previous successful partnership, were key factors in the decision. Aramco’s relationship with Milestone began in 2016, when it leased three AW139s. The AW139 is the best-selling twin-engine helicopter in its class, with more than 1,000 units in service with customers worldwide. The aircraft has outstanding single-engine



**Flexible: The AW139 can perform a wide range of roles.** PICTURE: LEONARDO HELICOPTERS.



**High five: Airbus H145 helicopters also formed part of the deal.** PICTURE: ARAMCO.

performance, even in extreme temperatures and harsh conditions, making it ideally suited for Aramco’s operations. The AW139 can perform a wide range of roles, and the 21 aircraft delivered to Aramco include oil and gas, and search-and-rescue (SAR) configurations. Aramco is one of the largest operators of Leonardo helicopters in the Middle East. It has been operating a fleet of seven lightweight AW109s since 2006, and 14 AW139 twin-engine multi-role helicopters since 2008, principally to perform offshore transport missions in support of the oil and gas industry. Its fleet renewal programme will ensure it has a fleet with state-of-the-art avionics, a high level of cabin flexibility, and the most stringent safety standards, together with excellent payload, range and speed. Claire Brugirard, vice president commercial - Africa and Middle East at Milestone, said that Aramco’s commitment to this fleet renewal programme was: “a testament to the benefits of leasing and we are incredibly proud to support them in their oil and gas missions across Saudi Arabia”. ▲

JON LAKE

## THC BUYS INTO SAUDI ARABIAN GROWTH

The Helicopter Company (THC), Saudi Arabia’s first and only commercial rotorcraft operator, has signed agreements for 43 new aircraft with options on a further 20. On the first day of HAI Heli-Expo 2022, in Dallas, Texas, THC announced that it had placed an order with Leonardo for 16 Leonardo AW139s and a single AW109 Trekker, with an option for six more AW139s. Late last year the company had placed an order with Airbus Helicopters for 20 five-bladed H145D3s and six ACH160s, with an option for ten more H145s and four ACH160s. The ACH160 is a luxury corporate version of the basic H160 helicopter. THC had previously signed an agreement to buy 10 single-engine H125s in 2020. An Airbus H145 full-flight simulator (FFS) and a Leonardo AW139 phase 8 FFS will be supplied to THC as part of the respective helicopter deals. It is expected that the first AW139s will be delivered this month and that the first H145 will enter service in July. The remaining rotorcraft will be delivered in batches over the next two years. These new helicopters will allow THC, which has been flying since mid-2019, to continue expanding its activities in Saudi Arabia. THC was established by the Saudi Public Investment Fund as part of its strategy to activate



**Done deal: THC and Leonardo agreed to add 16 AW139s to the fleet, augmenting seven existing AW139 aircraft.** PICTURE:

new sectors in Saudi Arabia that support the realisation of the kingdom’s vision 2030 campaign to diversify the country’s economy away from oil. Thus, THC operates tourism, aerial work, medevac, search-and-rescue and VIP transport flights, as well as supporting the oil and gas industry. The AW139s, in particular, will support plans to develop an air ambulance service in the country over the next three years. The new Saudi helicopter emergency medical

service (HEMS) will be operated in partnership with Saudi Red Crescent and will be called Saudi Air Ambulance. It will operate from 23 bases covering 90% of the population. Much of the infrastructure to support the service is being built from scratch. Arnaud Martinez, THC’s chief executive officer, said that the service will start off with daytime operations but will eventually also operate at night using night vision goggles. ▲

JON LAKE



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Green future: As part of its Greenliner programme, an Etihad Boeing 787 flight from London to Abu Dhabi cut CO2 emissions by 72%.

# THE GREEN DREAM

*In a quest to reduce their greenhouse gas emissions, the use of sustainable aviation fuel is moving up the agenda for Arab carriers. Mark Pilling reports.*

**T**here is growing will among Arab carriers to jump on the sustainable aviation fuel (SAF) bandwagon. The region's big three – Emirates, Etihad, and Qatar Airways – have the most comprehensive plans, and in some cases roadmaps, for the increasing uptake of fuels that promise emissions reduction.

Others are studying SAFs and developing environmental strategies that will see their introduction in this decade as availability increases.

Mariam Musallam Al-Qubaisi, who studied engineering for sustainable development at the UK's Cambridge University and is now the head of sustainability and business excellence at Etihad Aviation Group, had her own questions about the commitment airlines truly had towards the environment when she joined the Abu Dhabi-based carrier in 2019.

Also, there are analysts who question the pace at which a region, where oil and gas exploitation has enabled the rapid development of entire countries, wants to move past economies based on fossil fuels.

Al-Qubaisi acknowledged that there are "some people who are sceptical about the intentions of the United Arab Emirates" but added: "Our government is taking this topic extremely seriously."

The UAE recognises that its future lies in creating a self-sustaining energy industry that can transition from fossil fuels to renewable and low-carbon fuels.

As the UAE, and other countries in the region, invest in renewable energy, the airlines are picking up the pace on sustainability too.

Al-Qubaisi said Etihad has been a

Continued on Page 28 

▼ We will need at least 10 years to develop an SAF infrastructure. ▲

MARIAM MUSALLAM AL-QUBAIS

CONTINUED FROM PAGE 27

leader in supporting the development of low-carbon fuels for more than a decade. It operated the Gulf’s first biofuel flight in January 2011 with a Boeing 777 delivery from Seattle to Abu Dhabi powered by a blend of petroleum-based and certified plant oil-based jet fuel.

In that year, Etihad also partnered with the UAE’s oil producer, Adnoc, Boeing, and others to undertake research into feedstock production and refining capability in the country to develop a supply chain for SAF.

And it was one of the founders of the Sustainable Bioenergy Research Consortium hosted by the Masdar Institute in Abu Dhabi, she added.

No-one claims that this work has delivered any breakthroughs in developing a SAF industry in the UAE, but it signalled the beginning of the journey, said Al-Qubaisi. “There needs to be the development of a proper eco-system to incentivise the production of SAF. We will need at least 10 years to develop a SAF infrastructure [in the UAE],” she believed.

Shannon Scott, senior manager, environment affairs at Emirates, is also looking to the future. “Emirates is supportive of efforts to develop a commercially viable supply chain for SAF, and we acknowledge the challenges of scaling up production in a sustainable way,” he said.

“Along with aircraft and engine technology advancements, SAF is one of the main opportunities for reducing aviation’s carbon footprint in the longer term. It is estimated that SAF will contribute 60-70% of the airline industry’s emissions reductions by 2050, based on industry projections.

“With the support of our executive committee, Emirates intends to engage further with suppliers, aircraft and engine manufacturers, and governments to support the development of SAF supply in the UAE.

“We are also a member of the World Economic Forum’s Clean Skies for Tomorrow coalition, which is supporting a transition to SAF as part of a pathway towards carbon-neutral flying.”

Over the past year, carriers in the USA and Europe, such as United, IAG and Air France-KLM, have signed large deals to buy SAF over the coming years. Arab carriers have yet to join in, partly because there is no SAF available in their networks.

The one exception is Qatar Airways, which, in November 2021, committed together with eight members of the Oneworld Alliance, to purchase 350 million gallons of blended SAF at San Francisco Airport over seven years from 2024.

A second deal for a further 200 million gallons from five Oneworld members, including Qatar, was signed in March, as major players seek to secure SAF to help meet an alliance target of 10% SAF use by 2030.

Neither Emirates nor Etihad have yet to strike



“As part of our environmental plan, we aim to engage with the government to look into producing SAF in Jordan.”

Captain Ghassan Obeidat

PICTURE: ROYAL JORDANIAN.

a major SAF offtake deal, but it surely cannot be too long before they do.

Scott noted: “In December 2020, we received delivery of our first A380 powered by SAF. Some of our flights from Oslo and Stockholm are also operating on SAF under the Norwegian and Swedish SAF mandate policies.”

These European countries, soon to be followed by others, have a new requirement for small amounts of SAF to be used on all flights. And Emirates is studying the next step. “We are currently exploring partnership opportunities in the small number of destinations on our network where SAF is being made available and are looking into the longer-term prospects for technologies such as power-to-liquid fuels,” said Scott.

At Royal Jordanian, the airline is in the SAF information-gathering phase and will build the use of these fuels into its soon-to-be-launched environmental management system, said Captain Ghassan Obeidat, chief technical officer, who is also a line captain on the Boeing 787.

This will be the carrier’s first foray into creating an airline-wide sustainability plan and its launch has been a priority for new chief executive, Samer Majali.

At present, there is no SAF available in Royal Jordanian’s current network, although there are potential providers in Toronto and Chicago, which it serves, said Obeidat. “We expect that, in two years’ time, we will see a different outlook [on SAF] as more production comes on stream.”

The carrier is also keen to promote a home-grown industry. “As part of our environmental plan, we aim to engage with the government to look into producing SAF in Jordan,” said Obeidat. The country has made advances in solar and wind projects, which offer the prospect of local renewable energy sources for SAF production.

While the UAE has limited feedstocks for SAF in either municipal waste or renewable biomass (although it is studying both pathways), it has opportunities to develop solar power, it has nuclear energy coming online, and it is exploring other projects.

For instance, in January, TotalEnergies, Abu Dhabi’s clean energy firm Masdar, and Siemens Energy, signed a collaboration to develop a green hydrogen demonstrator plant in the UAE to convert CO2 into SAF, with design work starting this year.

Other partners in the project are Etihad, Lufthansa, the Abu Dhabi Department of Energy, Khalifa University of Science and Technology, and Marubeni Corporation.

“The demonstrator plant will help to establish the commercial viability of green hydrogen as an essential decarbonised fuel of the future and will support Abu Dhabi’s development as a green hydrogen hub,” said Mohamed Jameel Al Ramahi, chief executive of Masdar.

As it backs projects in Abu Dhabi to develop SAF locally, Etihad is supporting the use of low-carbon aviation fuel (LCAF) as part of the decarbonisation journey for aviation.

LCAF is regular jet fuel but the production processes to make it have been adapted, for example, with the use of renewable energy or by carbon capture, so that the overall carbon footprint of the fuel usage is lowered by 10% or more.

The UAE and its fuel supplier, Adnoc, are hoping its LCAF will become accredited by the International Civil Aviation Organization (ICAO) for its carbon offsetting scheme CORSIA. “This would be an interim solution until we have scale when it comes to SAF,” said Al-Qubaisi.

For now, airlines like Etihad and Emirates focus on special flights designed to highlight the challenges with using SAF. In October, as part of its Greenliner programme, an Etihad Boeing 787 flight from London to Abu Dhabi used a blend of 38% SAF, optimised flight routings, condensation trail avoidance, and other measures, to cut CO2 emissions by 72% for this service.

At the 2021 Dubai Airshow, Emirates signed an agreement with GE Aviation to conduct a test flight of an Emirates Boeing 777-300ER, powered by GE90 engines using 100% SAF by the end of 2022.

And Qatar Airways said: “In the coming years, there will be more industry-leading announcements, not only on SAF but also on aviation-technology partnerships and new carbon offsetting.

“At Qatar Airways, we recognise the importance of environmental sustainability in aviation, and we will continue reaffirming our leadership and commitment to work in collaboration with governments and aviation industry stakeholders towards our ambitious environmental goals.”

The over-arching target, expressed by the International Air Transport Association (IATA) last year, is for net zero carbon emissions by 2050. “In our roadmap [towards this] it is our intention that, by 2035, 20% of our operations are powered by SAF,” said Al-Qubaisi. “SAF is definitely the future for Etihad along with LCAF.”

Today there are few molecules of SAF finding their way into the engines of Arab carrier airliners. But the commitment to change that is intensifying.

Al-Qubaisi is part of the environmental steering group that meets bi-weekly with Etihad’s chief executive, Tony Douglas, to discuss progress on sustainability. Her counterparts at other airlines express surprise and some envy at that degree of engagement.

“We are fortunate to have leadership that fully believes in sustainability,” she said.

Sustainability is a collective responsibility for the entire aviation value chain. **Chuck Grieve** looks into the implications for MRO operations.

## MROs WRESTLE WITH THE ‘GREEN’ WAY FORWARD

While OEMs grapple with introducing new technologies that they hope will help aviation achieve its targets of carbon neutrality and net zero, MROs and the aftermarket are less certain of the big picture.

Electrification, for example – “possible” for short-haul commuter 19-20 seat aircraft by 2024-5 – “won’t have a huge impact” on MRO operations, according to Rolls-Royce’s Jason Sutcliffe. However, gas turbine engines “will be around for a long time” on long-haul wide-body fleets common in the Middle East.

Speaking on a panel at MRO Middle East, Sutcliffe, the engine prime’s EMEA marketing director, said MROs and their technicians “will need lateral capability” to deal with a wider range of requirements.

He said up to 98% of Rolls-Royce Trent engines can now be recycled.

Fellow panellist, Sonia Dumas, head of services marketing for Airbus, said as much as 90% of Airbus airframes could be recycled, and up to 800 components per airframe.

She said the huge volumes of in-flight data now harvested should help OEMs optimise engines for

aircraft, as well as supporting predictive maintenance.

On the ground, developments in engine washing are paying dividends. GE Aviation cites statistics showing substantial benefits in terms of fuel burn and CO2 emissions from using its 360 Foam Wash system over water washes.

Paul Vaughan, head of GE Aviation’s Middle East Technology Centre in Dubai, said the system has been optimised for use on multiple GE engine programmes. Seven major airlines – six of them based in the Middle East and south Asia – currently use the system on their GENx and GE90 engines, and it continues to be tested with more customers globally.

Elsewhere, the multi-platform Cyclean engine wash system, developed by Lufthansa Technik, is being used in Abu Dhabi and Dubai under customer lease.

Lufthansa Technik Middle East (LTME) now also holds mobile equipment at Dubai World Centre (DWC). Feliks Wandt, head of engine life cycle services for EMEA, said this van-mounted version could be dispatched on demand anywhere in the region.



Improvement: GE Aviation’s 360 Foam Wash system produces benefits in the air without compromising the ground environment.

PICTURE: GE AVIATION.



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## FOCUS ON MRO

EXPANSION

Saudia Aerospace Engineering Industries (SAEI) – the maintenance repair and overhaul (MRO) business arm of Saudi Arabian Airlines – is embarking on a massive growth plan to meet the expansion demands of its parent and that of its government, which has opened its borders to encourage tourism and business activities. **Alan Peaford** reports from Jeddah.

# VILLAGE OVERHAUL

**E**merging from the desert sands on a far corner of the expanding King Abdulaziz International Airport in Jeddah, the skeletons of aircraft hangars appear.

A glass office block, stylish minarets, and a huge concrete-cased building are nearing completion.

This is the new HQ of SAEI. But it is not just an MRO facility – this is the realisation of a vision of how a new approach to the aerospace engineering sector is creating a mutually rewarding community.

It is called the MRO village but, in reality, at close to a million square metres, it is more like an MRO town.

It is by far the region's largest MRO hub and the building houses an engine test cell that can handle any size powerplant in the world today, and is future-proofed for next-generation large engines.

This jet propulsion centre (JPC) is rated to test engines with up to 150,000lbs of thrust – 20% greater than anything on the market today.

Built to service the G90 engines, as well as the CFM 56, the JPC is preparing to attract close to 300 engines a year, plus up to 500 auxiliary power units (APUs).

**Captain Fahd Cynndy:**  
“We need to collaborate, not compete, when it comes to quality, safety, and the use of precious resources.”

PICTURE: JON LAKE.

**Below: How the new ‘village’ will look when completed next year.**

IMAGE: SAEI.

In the surrounding MRO village, 11 hangars – some big enough to service four wide-body aircraft at the same time – are taking shape. Others can take four narrow-bodies or two A380s for line maintenance.

With its own aircraft washing centre and a paint shop, SAEI is planning to grow third-party work, as well as meeting the needs of Saudia and its low-cost carrier, Flyadeal.

But, according to the SAEI's chief executive, Captain Fahd Cynndy, the Saudi MRO is not going it alone.

He said that the key to the village working successfully lies with the idea of partnerships and collaboration agreements with the technical supply chain, the original equipment manufacturers (OEMs) and other MRO centres of expertise.

The village has 26 extensive workshop spaces and, already, companies like Honeywell, Leonardo, and Liebherr have signed up to be part of the new hub.

“Covid taught us a lot about working together,” said Cynndy. “To come in and say, I’m going to have a competitive advantage to win customer A or customer B, we insinuate indirectly that we’re isolating the rest of the industry and the

immediate region and we’re going into a competition.

“But we need to collaborate, not compete, when it comes to quality, safety, and the use of precious resources. After Covid everyone is exhausted. The whole global economic system is exhausted; aviation is exhausted. We want to get back to reliability, we want to get people back up in the air, we want to get airlines flying.

“Many people have left the workforce over Covid and they’re not going to come back,” Cynndy added. “It could take us a decade to recover.

“So what can we do to tap into one-another’s resources? If we operate on the idea that this is mutually exclusive, I win, you lose, we will never be able to tap into it. And the worst thing that could happen to the industry is the exit of major players, like we’ve seen airlines fold. Alitalia – that’s not good for the industry; Airberlin – that’s not good for the industry. We want growth, but it has to be sustainable.”

Even without the international third-party work, SAEI’s growth potential is phenomenal with the fleet expansion of the Saudi Arabian carriers.

Captain Majed Sabbagh, vice-president transformation at SAEI, is excited about not just the physical growth but also the ethos.

“It’s not only the number of buildings and hangar space and apron. No, it’s how you do the business, how you leverage the backbone of the supply chain,” he said.

“That synergy by itself has got to have an enhancement between 30 to 40% in terms of productivity, in terms of efficiency, so we’re very much looking forward to it.” ▲

PICTURE: JON LAKE.



IMAGE: SAEI.

The Middle East MRO 'ecosystem' is moving toward large-scale cooperation and collaboration as companies seek to rebuild as stronger, more resilient versions of their former selves. **Chuck Grieve** reports.

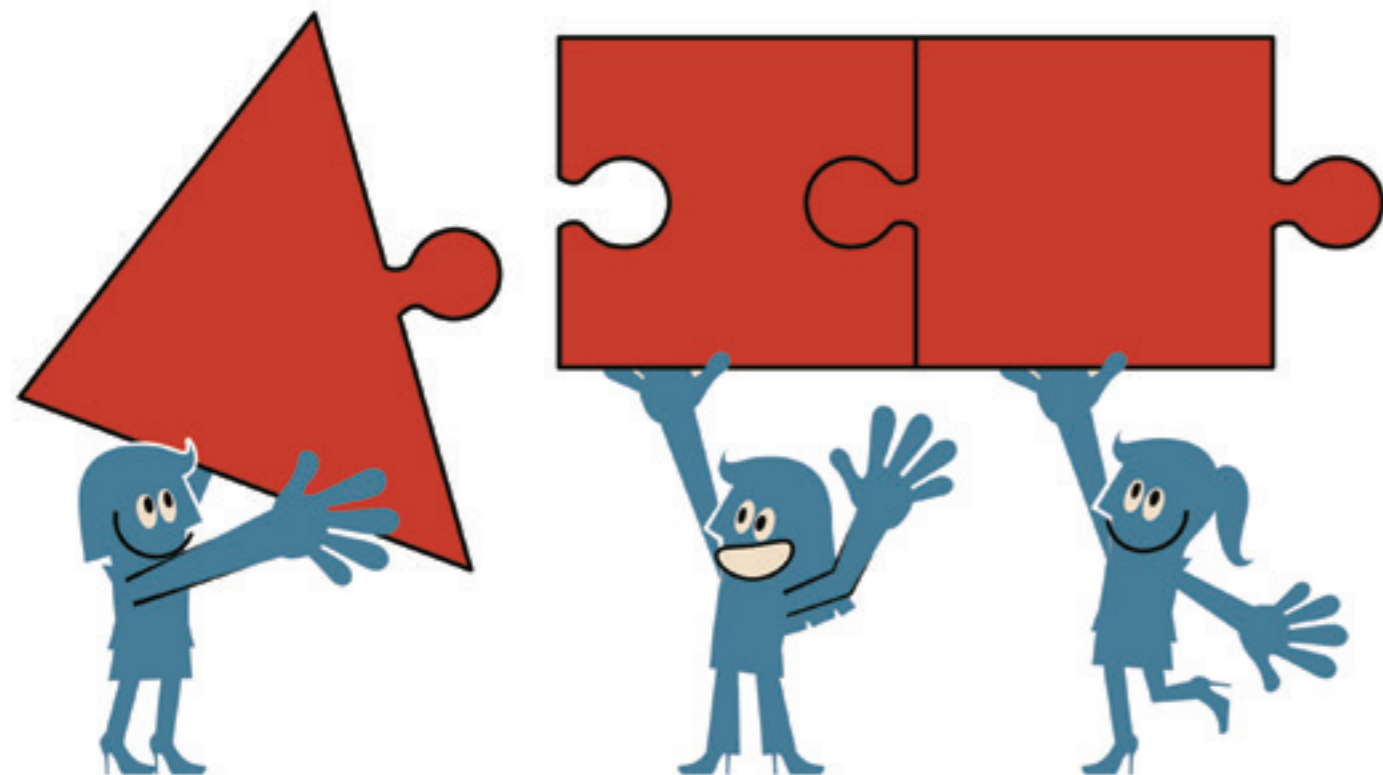


ILLUSTRATION: ALASHI, ISTOCK

# Let's work together

TIME FOR MIDDLE EAST MROs TO COLLABORATE

**A** Middle East MRO alliance may again be on the agenda of industry leaders who have seen the sector shaken over the last two years by the knock-on effects of the pandemic.

Judging by the enthusiasm of some of the region's top players, it's an idea whose time may have come.

An exploratory meeting – suggested by Etihad's Frederic Dupont – was expected before summer, schedules permitting.

Speaking on a leaders' panel at MRO Middle East, Dupont said the industry should be looking to harness the considerable collective knowhow in the region "to complete each other rather than competing with one another".

His fellow panellists – Fraser Currie of Joramco, Ziad Al-Hazmi of Lufthansa Technik Middle East (LTME), and Captain Fahd Cynnndy of Saudia Aerospace Engineering Industries (SAEI) – concurred.

Joramco's Currie said the pandemic "has taught us there's a bigger picture".



"Airlines are looking for long-term deals, locking in prices, locking in capacity," he said. "Some of these large airlines could certainly be scoping their work across all of us. Customers are coming to us [looking] for a consistent service, but we're not talking to each other."

"I think collaboration is something that has to, and should, come."

Cynnndy suggested the substantial

**Fraser Currie:**  
"Airlines could be scoping their work across all of us."

PICTURE: JORAMCO.

investment by Saudi Arabia in a new Jeddah base for SAEI should be considered an investment for the entire region. "It's about complementary services – making centres of excellence rather than just duplicating capabilities. We're all customers of one another, we're all partners with one another, and we're also buyers of one another."

Dupont said a regional body representing the MRO industry was mooted "a few years back". Since then, the climate has changed. Everyone, he said, was now asking "how can we optimise our solutions, our workflows so we can deliver a better service to our customers?"

He pointed to the Independent Aircraft Modifier Alliance (IAMA) – of which his company was a founding member – as a current example of competitors linking up to develop standards and solutions to problems they all faced. IAMA now offers audits on its international standards of supplemental type certificate (STC)

**Continued on Page 35** ➔

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## FOCUS ON MRO

CONTINUED FROM PAGE 32

modifications. Etihad Engineering was expected to pass its first audit as *Arabian Aerospace* was going to press.

An overarching industry body would mirror the drift toward cooperation seen on the ground.

For Lufthansa Technik, agreements with other MROs, including Joramco and VD Gulf of Sharjah, were part of a long-term strategy "to merge into the community to become part of the regional set-up".

Tim Butzmann, senior MEA sales director for Lufthansa Technik, observed that many local players had been doing "a very good job" through the Covid crisis. It remained to be seen, he added, if gains achieved through "aggressive" marketing were sustainable. He warned there might be "a bit of a shakeout".

□□□□□

Reorganisation of Abu Dhabi's MRO and related industry, as seen in the change in ownership for Etihad Engineering, Sanad Group's expanded industrial strategy, plus SAEI's mega-MRO facility in Jeddah, show a growing alignment with national economic strategies.

"We're going to see a lot of local footprints in the market," said Butzmann. "The local environment will provide for interesting competition."

At the same time, major international players have been slower into the market than forecast pre-Covid. Boeing, for

## ECONOMICS DRIVES P2F CONVERSIONS

Seismic shifts in global economics are having an impact in the burgeoning demand for air freighters, driven in part by rocketing e-commerce sales.

The knock-on for MRO providers is a boom in the passenger-to-freighter (P2F) conversion business. Simon Spells, head of aviation in Asia for Reed Smith's transportation industry group, says the demand for freighter aircraft, according to the data, is forecast to remain high for some time, even despite the graduated return of belly-hold capacity in the passenger fleet.

Leading regional players Etihad Engineering and Joramco appear confident that demand will hold. Both have embarked on P2F conversion through cooperation agreements with organisations holding the appropriate STCs.

While Joramco's deal with UUDS Aero covers Boeing 737 types, Etihad Engineering opted, in its joint venture with IAI, for a wide-body conversion line using Boeing 777-300s as feedstock.

example, despite hitting record e-commerce levels with \$2 billion of online parts sales in 2021, has been "less present" in the aftermarket. "What that means for MRO, I'm not so sure," said Butzmann.

Although local competition was growing, he also expected the volume of Middle East MRO business to increase, judging by the healthy growth and load factors reported by regional carriers. Success will put them in the left-hand seat when it comes to expectations of the levels of service demanded of their MRO providers.

Given that wide-body aircraft comprised more than half of the Middle East fleet before the pandemic, is P2F conversion an attractive option for redeployment of aircraft?

Spells says it is "a key question" for the used wide-body fleet, taking into account whether the freighters are intended for regional or international routes, and availability of suitable aircraft.

"Much of the P2F capacity growth to date has been focused on used 737s and the A320 family aircraft, as these present the most economically efficient options from a purchase and conversion cost perspective," he said. However, prices of used wide-body aircraft were "coming down significantly", which might affect the economics of wide-body freighters more generally.

He sees little prospect for an A380 all-cargo configuration at present, or even the part conversion mooted last year by Airbus, but does not rule it out "should demand get to a certain level".

■ Supply chains key to industry bounce, page 49. ▲

Another international player intent on building its regional capabilities is Safran Nacelles. AMES, its joint venture with AFI KLM E&M based in Jebel Ali Free Zone, has just added new jigs and tooling for the repair of the inner fixed structure (IFS) of the A330ceo thrust reverser.

Alain Berger, Safran Nacelles' vice-president support and services, explained that the IFS is a complex structure – a large composite panel whose repair until now had to be carried out in France. By bringing the repair capability to the region, AMES was helping airlines save on downtime and transportation costs. ▲

## TEAM BRINGS HELICOPTERS 'BACK FROM THE DEAD'

*Returning a fleet of long-parked Bell helicopters to service presented Jet Aviation's Fujairah shop with unique challenges.*

What does it take to restore long-parked helicopters to airworthiness? Jet Aviation's Mike Conomos says it calls for experience, expertise, passion and flexibility – and he should know.

As the general manager of the company's MRO base at Fujairah International Airport, he's just seen his multinational team achieve a "stunning" transformation of three Bell 412s for an undisclosed customer. They're currently working on four more destined for a customer in Africa.

The helicopters were in a sorry state when they arrived by truck in early 2021. All had been parked for an "extended period" – essentially left where they stood when the previous operator's contract ended. Four had been in shipping containers in the desert since 2016.

The challenge for Conomos and his team was to salvage and restore the aircraft to



**International team: Mike Conomos (second right) and his team with one of the restored Bell 412s.**  
PICTURE: JET AVIATION.

airworthiness and sell them. "It was a big project," he said, adding: "The team was excited to take it on."

Conomos said this type of situation "doesn't come along very often".

Normally the directions in original equipment manufacturer (OEM) maintenance manuals are followed so aircraft can be reactivated with minimal cost. "In this case, the helicopters were parked suddenly, and the normal inhibiting procedures required for long-term storage weren't carried out," explained Conomos. "Hence the additional work required to carry

out a light overhaul of the engines and drivetrain components."

Cross-border logistics proved a major challenge, compounded by Covid-19. "What used to take a month is basically now taking two months," said Conomos.

Once in Fujairah, the aircraft were fully disassembled, including avionics, which revealed "a bit of corrosion in the engines, transmissions and fuselages" that required off-site overhaul before reassembly and painting. It took, on average, 3,000 work-hours to prepare each of the first three 412s for their new roles in surveillance and public security.

"Our customers appreciate both the scope of our capabilities and our commitment to the highest standards," said Conomos. "The team drew on all their experience, expertise, passion and flexibility with this project, and I couldn't be prouder of them."

Jet Aviation took over the Fujairah helicopter MRO facility as part of its 2018 acquisition of Hawker Pacific. Its team of more than 20 maintenance professionals represents nearly as many nationalities. ▲

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Coming soon: An artist's impression of a CH-53K King Stallion in Israeli Air Force markings.  
PICTURE: SIKORSKY.

# Israel saddles up Pegasus and King Stallion

**Jon Lake** looks at the latest defence activity taking place in the MENA region.

The Israeli MoD has signed a letter of offer and acceptance for the first two of eight Boeing KC-46A Pegasus tankers, scheduled to be delivered in 2024.

The KC-46s will replace the Israel Air Force's existing Boeing 707 Re'em tankers, which are now around 50 years old, and which have become increasingly difficult to support in recent years.

In February 2022, Israeli Air Force chief of staff, Brigadier General Eyal Grinboim, visited Naval Air Station Patuxent River for a programme update on, and flight in, the CH-53K heavy-lift helicopter.

Israel is the first international customer for the Sikorsky CH-53K King Stallion helicopter, though there is some confusion as to exactly how many have been ordered to date.

It has been reported that Lockheed Martin subsidiary, Sikorsky, is set to build four low-rate initial production lot 6 King Stallions for Israel. It is not known whether these aircraft are

additional to the 12 CH-53K helicopters contracted for in late December 2021.

Other reports suggested that Sikorsky is preparing to build seven CH-53K helicopters for Israel.

The Israeli MoD announced that it had chosen the CH-53K as its next heavy-lift helicopter in February 2021, selecting it over Boeing's CH-47 Chinook. The new helicopter will replace the country's ageing CH-53D Sea Stallions, known locally as the Yasur.

The US State Department originally approved the \$3.4 billion sale of 18 aircraft in July 2021.

The CH-53K programme is on track for the US Marine Corps to achieve initial operational capability this year, and first deliveries to Israel are planned for 2025.

■ Still on rotorcraft, following the appearance of pictures of four CH-47F Chinook heavy-lift helicopters in Royal

Continued  
on Page 38

**Upgrade:** Saudi Arabia and the US have agreed a \$397.9 million contract to modernise and upgrade the five E-3A aircraft operated by the Royal Saudi Air Force (RSAF).  
PICTURE: JON LAKE.



CONTINUED FROM PAGE 37

Saudi Land Forces (RSLF) livery, Boeing has confirmed that four aircraft for Saudi Arabia have been delivered to the US Army.

The company added that delivery of the eight contracted new Chinook helicopters is expected to continue throughout 2022 and that, as a foreign military sale (FMS), the customer is the US Army.

Saudi Arabia signed a \$3.51 billion contract for 48 Chinooks in 2016. As well as the CH-47F helicopters, the deal included engines, navigation systems, missile warning systems, machine guns, an extended-range fuel system, as well as armour, spares, and other related components. Logistics, training and support also formed part of the package.

The new Chinooks will join nine UH-60M helicopters delivered to the Royal Saudi Land Forces (RSLF) airborne special security forces, which were formally introduced at King Khalid Military City in northern Saudi Arabia in December 2021.

On March 24, the US Department of Defense (DoD) announced that it had awarded a \$193 million contract to Sikorsky to deliver 25 ‘modified’ UH-60M helicopters for the Saudi Arabian National Guard (SANG), though there

have been suggestions that this contract covers upgrade work only, and not the supply of new helicopters. Work is set to be complete by October 31 2024.

These helicopters were not part of the \$3.8 billion US Army multi-year contract announced in July 2017 that included 40 UH-60M and 75 HH-60M medical evacuation Black Hawks for the SANG. Those helicopters are due to be delivered by June 30 this year.

Nor do the new Black Hawks form part of the letter of intent that Lockheed Martin signed with local firm, Taqnia, in May 2017 for the supply of up to 150 S-70i helicopters for Saudi government agencies.

■ In another new move, Saudi Arabia and the United States have agreed a \$397.9 million contract to modernise and upgrade the five E-3A aircraft operated by the Royal Saudi Air Force (RSAF).

The RSAF’s E-3As are currently operated by 18 Squadron and, when required, are loaned to 17 Squadron, which functions as a training unit for the RSAF’s larger intelligence, surveillance, and reconnaissance (ISR) and tanker aircraft.

The RSAF purchased five E-3A Sentry airborne warning and control system (AWACS)

aircraft, together with eight KE-3A tankers, in 1983 and these were originally delivered between June 1986 and September 1987.

One of the tankers and a former Boeing E-6A/YE-8B trials aircraft were delivered to Raytheon Intelligence, Information and Services in Texas in 2004, where they were converted into RE-3 signals intelligence (SIGINT)-gathering aircraft in two different configurations.

The first became the RE-3A tactical airborne surveillance system (TASS), while the second turned into the RE-3B improved tactical airborne surveillance system (ITASS) aircraft. Another tanker may subsequently have been converted to RE-3A TASS configuration.

Following progressive upgrades during its service, the first RE-3A TASS SIGINT platform now closely resembles the current Baseline 11 standard RC-135V/W Rivet Joint, as flown by the US Air Force and British Royal Air Force.

Boeing carried out a radar system improvement programme (RSIP) upgrade on the RSAF’s E-3 AWACS fleet in 2017 to enhance radar capabilities and improve availability. This included new software and hardware, a new radar computer and a radar control maintenance panel.

Boeing’s work on phase 2 of the AWACS modernisation programme is intended to keep the RSAF E-3 fleet interoperable with the US Air Force’s 31 E-3s, and will ensure that the Saudi aircraft remain functionally viable until the type’s expected end-of-life date in 2040.

The upgrade work is due for completion by February 21 2026 and will involve 100% FMS funding. The work will be undertaken in Oklahoma City and at Al Kharj in Saudi Arabia.

■ Earlier this year, Iraqi Defense Minister, Jumaa Inad, announced that he had signed a deal with Pakistan for an unspecified number of fighter aircraft – understood to be JF-17 Block 3s.

Local media in Pakistan had earlier reported that negotiations had been conducted between Islamabad and Baghdad for the sale of 12 JF-17s for an estimated price of \$664 million.

The JF-17 Block 3 is fitted with an active electronically scanned array (AESA) radar and carries PL-15 beyond-visual-range (BVR) missiles. It promises to

Continued  
on Page 41 ▶

**More like this:** The new Chinooks will join nine UH-60M helicopters delivered to the Royal Saudi Land Forces (RSLF) airborne special security forces.  
PICTURE: JON LAKE.





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## CONTINUED FROM PAGE 38

significantly enhance Iraq's air defence capabilities. Iraq's current fleet of F-16s were not delivered with the AIM-120 advanced medium-range air-to-air missile (AMRAAM) beyond-visual-range air-to-air missile (BVRAAM), and rely on shorter range (and obsolete) AIM-7 Sparrows for BVR use.

Inad visited Pakistan to discuss a JF-17 Block 3 purchase in May 2021, and negotiations were reportedly concluded when Major General (Pilot) Muhammad Majeed Mahdi Mahmood, deputy commander of the Iraqi Air Force, led a delegation to Pakistan in September 2021.

■ Meanwhile, Turkey's defence industry executive committee has given the go-ahead for the mass production of the country's Hurjet indigenous basic trainer and light-assault aircraft.

It is thought that Turkish Aerospace Industries (TAI) will roll out its first prototype by the end of this year, with an inaugural flight planned for March 2023 to coincide with the 108th anniversary of the battle of Canakkale – an important event in the Turkish struggle for independence.

Current plans reportedly involve the construction of two flying prototypes with two more airframes being produced for fatigue and ground static testing, though TAI has not confirmed how many aircraft would be produced under the first serial production run. Photos and videos released seem to show at least two fuselages currently under construction.

The TAI Hurjet is a single-engined, tandem-seat, supersonic advanced trainer and light combat aircraft, with modern avionics and high performance.

The Turkish Air Force plans to use the Hurjet, also known as the National Jet Trainer, to replace the Northrop T-38 Talon in the trainer role and to supplement the F-16s for close air support.

TAI is also pursuing export opportunities in what is an increasingly crowded marketplace.

Despite beginning serial production of the Hurjet, Turkey will narrowly miss its indigenous production targets in 2023.

The country's 2019-2023 strategic plan set out that 75% of its defence requirements would be met through indigenous production, but recent forecasts suggest that only 71% of procurements



**Model performer: A full-scale mock-up of the Hurjet.**  
SANAYI. PICTURE: SAVUNMA

will be fulfilled from indigenous production in 2023.

■ With 96 new fighters on order, the Qatar Emiri Air Force (QEAF) is making major efforts to train large numbers of new pilots.

Some will undergo training on the BAE Systems Hawk with 11 Squadron QEAF at RAF Leeming in the UK, but others will be trained on the Leonardo M346 Master in Italy.

It is expected that further trainer aircraft will be procured to augment the nine Hawks and six Masters purchased so far.

The first QEAF Leonardo M346 Master advanced trainers made a surprise appearance in Qatar at the end of January. Three aircraft were shown during a graduation ceremony for student pilots at Al Udeid Air Base, one forming a parade 'backdrop' and two performing a fly-past.

Some reports suggest that the original plan was to send four M346s to Qatar for the ceremony, but only three were actually deployed at the event. Originally flown to Kuwait from the International Flight Training School (IFTS) in Italy, the aircraft returned to Lecce following the ceremony.

The aircraft wore partial Qatari markings, with a Qatari flag on the tailfin, and a Qatari ribbon around the bottom part of the IFTS tail badge. It is not clear whether these markings will be retained when the aircraft return to Italy.

The Italian Ministry of Defence and Qatar signed an agreement to enable QEAF pilots to be trained at the IFTS at Lecce in Italy in November 2020. Phase 2, 3 and 4 training is currently conducted at Lecce, where the first two phases are flown in the Aermacchi T-339A and FT-339C (MB339A and MB339CD). The Phase 4 syllabus

is flown in the Leonardo T-346A Master.

Phase 4 advanced pilot training is due to be moved to a new IFTS facility at Decimomannu, Sardinia, which is slated to be finished later this year.

■ In Kuwait, while deliveries of the Eurofighter Typhoon are ongoing and reportedly on schedule, none of the 22 Boeing F/A-18E and six F/A-18F Super Hornets ordered by the Kuwait Air Force (KAF) in 2018 have arrived in country.

The new aircraft will replace an elderly fighter fleet, which currently comprises 31 F/A-18C Hornets and eight dual-seat F/A-18D Hornets. These have been in service since early 1992.

When the full complement of Typhoons and F-18 Super Hornets are fully operational, they will provide a substantial improvement in Kuwait's air power capabilities.

Former KAF commander, Abdullah Al Foudary, pointed out that the Super Hornet represented a natural and logical choice, thanks to its commonality with the existing Hornet, while the Typhoon promised interoperability advantages with three other members of the Gulf Cooperation Council (GCC).

The first pair of Typhoons arrived at Ali Al-Salem Air Base on December 14 last year, and two more followed in March 2022. The type made its public debut in the National Day and Liberation Day fly-pasts on February 25 and 26 respectively.

These dates commemorate the nation's independence from the United Kingdom in 1961 and the liberation from the Iraqi occupation in 1991.

Kuwait will eventually take delivery of 22 single-seat Typhoons and six two-seaters.

Kuwait's 28 F/A-18E/F Super Hornets were originally slated for delivery by January 2021, and though all have been delivered to the US Navy, they have not been handed over to the customer, or delivered.

Problems with labour productivity, staff sickness and supply chain issues have caused some hold-ups, along with delayed infrastructure work at Ahmed Al Jaber Air Base.

It was originally expected that more than half of the Typhoons and all of the Super Hornets would be in Kuwaiti hands by the end of 2022, but it now seems that deliveries will stretch well into 2023 and possibly beyond.



**On parade: Examples of the Qatar Emiri new Dassault Rafale and Leonardo's M-346 Master form the backdrop to a student pilot graduation ceremony at Al Udeid Air Base.** PICTURE: QATAR MOD.



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**Now in need:** The Turkish Air Force is one of the largest F-16 operators outside the USA, but urgently needs new fighters.  
PICTURE: TURKISH AIR FORCE.



## JORDAN TARGETS \$4.21BN F-16 DEAL

The US State Department recently gave approval for a possible foreign military sale (FMS) of 12 Block 70 F-16Cs and four two-seat Block 70 F-16D aircraft and related equipment to Jordan, at an estimated cost of \$4.21 billion.

The Royal Jordanian Air Force (RJAF) currently fields 43 F-16As and 18 F-16B Fighting Falcons, the type forming the backbone of the country's fighter fleet.

The Block 70 F-16, with its active electronically scanned array (AESA) radar and upgraded avionics, would represent a significant improvement, and existing Jordanian aircraft could be brought to the same standard via the F-16V upgrade.

Meanwhile, Turkey is still facing some US political opposition to its request for 40 new-build Block 70 F-16s and 80 F-16V upgrade kits.

Originally, Turkey had wanted to upgrade its fighter fleet with an order for more than 100 F-35As, but Washington put a stop to that purchase after Ankara took delivery of the Russian S-400 missile defence system.

F-16s form the mainstay of the Turkish Air Force but an upgrade is needed if the fleet is to remain viable, and more aircraft are wanted to bring the force up to strength, pending the possible purchase of a fifth-generation fighter and pending the service entry of its own indigenous fighter, the TF-X.

The war in Ukraine has opened up an unexpected avenue that could allow Turkey to repair its relations with the US. There have been proposals that NATO members in eastern Europe with inventories of Soviet-supplied surface-to-air missile systems could transfer

these to Ukraine in exchange for NATO accelerating an air defence modernisation programme based on modern western systems. Such weapons could include legacy S-125 and S-200 Vega surface-to-air systems in Poland, and S-125 and SA-8 systems in Romania.

It has been suggested that Turkey's S400 could be transferred to Ukraine, providing an extremely powerful, long-range anti-aircraft system, and removing what has been the main impediment to US weapons sales to Turkey.

Such a transfer would make relations with Moscow very difficult for Ankara, but the S400 could be sold back to the US or to another NATO country, which could then transfer the system to Ukraine, and does represent a possible way out of the F-35/F-16V stalemate. ▲

## US SANCTIONS DEAL DOUBLE BLOW TO TAI HELICOPTER SALES

*Sanctions imposed following Turkey's procurement of the Russian S-400E air defence system have affected TAI sales to both the Philippines and Pakistan.*

Two T129B helicopters were finally delivered to the Philippine Air Force at Clark Air Base, Pampanga, on March 9.

They were transported by two Turkish Air Force A400Ms, which may have been used due to the disruption to global transport services as a result of the Russian invasion of Ukraine.

The Philippine Air Force technical working group selected the T129 for its attack helicopter programme by late 2018, but the acquisition was beset by delays, to a large extent due to US export restrictions linked to Turkey's procurement of the Russian S-400E air defence system. These restrictions affected the T129, because it uses a pair of US-supplied LHTEC



**Finally there:** After many delays, two T129B helicopters were delivered to the Philippine Air Force at Clark Air Base, Pampanga, on March 9.

PICTURE: TAI

T800-4A engines. The restrictions were subsequently lifted.

But, before the easing of restrictions, the delivery date for the first two helicopters was pushed back from September 2021, to November and then to December 2021.

A second pair of T129s were due to have been

delivered in February 2022, but this delivery has also been delayed.

Meanwhile, Pakistan's 2018 \$1.5 billion contract with TAI for 30 T129s to replace its fleet of Bell AH-1F Cobras has also been beset by delays due to the US sanctions affecting the LHTEC T800-4A engines.

Pakistan granted extensions to the agreed deadline in January 2020 and March 2021, giving TAI time to resolve its differences with the US – or to develop an alternative powerplant strategy for the T129.

It has been reported that Islamabad had cancelled its order and was seeking Chinese Z-10ME attack helicopters instead. However, Major General Babar Iftikhar, the director-general of inter-services public relations (ISPR) – the media wing of the Pakistan Army – has since said: "It is clarified that Pakistan has never ruled out an acquisition of military helicopters from Turkey." ▲

## US AND ISRAEL MAKE THE MOST OF NEW RELATIONSHIP

United States Central Command (CENTCOM) has assumed responsibility for US forces in Israel, which had previously been under the control of US European Command.

This was made possible by the Abraham Accords, which saw the UAE, Bahrain, Sudan, and Morocco join Egypt and Jordan in normalising relations with Israel.

Before this the Israel Defense Forces (IDF) had mainly worked with the US European Command as the US feared that Arab countries in the region would oppose working with CENTCOM if Israel also came under its umbrella.

Israel and the US have lost no time in capitalising on the new relationship, jointly mounting exercise Desert Falcon over southern Israel in January 2022.

Israel also participated in the massive Iniochos drill in Greece from March 28 to April 8, which included air forces from Greece, the USA, Israel, Cyprus, Slovenia, Italy, France, Austria, and Canada.

There will also be bilateral exercises with new partner air forces, including, for example, a planned joint exercise with the UK Royal Air Force. This follows a visit to Israel by the RAF head, Air Chief Marshal Sir Mike Wigston, who reportedly enjoys a good working relationship with his Israeli counterpart, Major General Amikam Norkin.

The UK has important defence relationships in the



Flying high: USAF F-16Cs from the 55th Expeditionary Fighter Squadron deployed to Ovda Air Force Base for exercise Desert Falcon operating alongside the Israeli Air Force. One is seen here flanked by an F-16D from 119 Squadron (leading) and an F-16C from 115 Squadron, which is Israel's aggressor unit. PICTURE: IDFAF

region, especially in the Gulf, and in the past there were concerns that a relationship with Israel could jeopardise these. But, with the advent of the Abraham Accords, it became clear that Britain's partners in the region would not have a problem with the UK developing relations with Israel, as they were doing the same themselves.

As well as developing its relationship with CENTCOM and with individual NATO and Middle

Eastern countries, Israel has focused on improving its own long-range attack capabilities, practising long-range strike profiles with its F-15Is and expanding its F-35 'Adir' force (which now consists of two squadrons with 33 aircraft of the 50 on order).

The Israel Air Force has also made efforts to improve its intelligence-gathering and refuelling capabilities.

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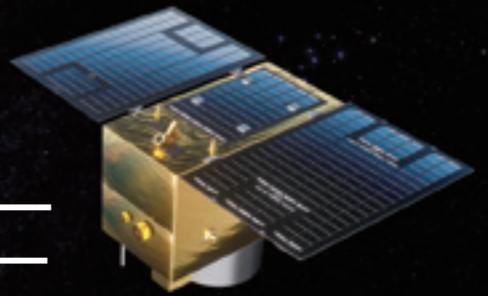
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The defence world turned its focus on Riyadh in March where the inaugural World Defense Show (WDS) took place. **Alan Peaford** reports on the importance of the event to Saudi Arabia's defence vision.

## WDS strides confidently on to the world stage

**A** little more than two years ago, a huge expanse of Saudi desert that had been set aside for flying falcons (the feathered kind) was earmarked for a different aerial display.

The site, 80km outside of Riyadh, was to become the home of a new exhibition and conference centre with the World Defense Show the opening attraction.

The plans showed a unique venue with a runway to cater for display aircraft from fighter jets to civil airliners, an area to demonstrate tanks and armoured land vehicles, and a static park to show all types of heavy equipment, from helicopters to command-and-control centres, radar posts, and missile launchers.

It was ambitious – but it worked. The shining glass and steel-structured exhibition halls were gleaming, flags of all participating nations were fluttering, and the red carpets were ready to welcome around 65,000 people over the four days of the show.

Some 600 defence and security exhibitors from 42 countries took part in the fair, which was set up by the kingdom's General Authority for Military Industries (GAMI), with military delegations from 85 countries visiting.

The show was all part of Saudi's 'vision 2030', with the architect of the plan, HRH Prince Mohammed bin Salman Al Saud, crown prince of the kingdom, actively participating at the event, which was designed to demonstrate Saudi's new open approach to meet a plan that calls for GAMI and the Saudi Arabian Military Industries (SAMI) ensuring 50% of new defence equipment is produced in-country.

Military production deals with external defence partners like the US, UK, and France will be increasingly implemented.

This first WDS event certainly proved that countries are

willing to be part of it, with almost \$8 billion of agreements signed over the four days.

It wasn't just the west that was inking deals. Saudi and Chinese industry agreed to join forces to design and build military drones in the kingdom.

Saudi's Advanced Communications and Electronics Systems signed an agreement with China Electronics Technology Group for a joint venture, named Aerial Solutions, to establish a research and development centre and create a team to manufacture different types of UAV systems. These are to include communications, flight-control, camera, radar and wireless-detection systems.

The new venture will also focus on developing electric-powered vertical-take-off-and-landing drones, anti-drone solutions, analytics, helicopter products, and radar systems.

Anti-drones and anti-missile defence is very much on Saudi minds right now with increased attacks from Iranian-backed Houthi rebels in Yemen.

Manufacturing agreements from GAMI with Lockheed Martin and Raytheon at the show will play a major part in increasing defence against threats from high-altitude attacks.

**L**ockheed Martin will shift the manufacture of terminal high-altitude area defense (THAAD) missile interceptor launchers, and missile interceptor canisters for the Saudi armed forces, to Saudi Arabia, while Raytheon announced it will build what were coyly referred to as 'key components' of its Patriot air and missile defence system in the kingdom.

"For more than 50 years, Lockheed Martin has been a committed partner to Saudi Arabia, as the country continues its journey toward ensuring a safe, secure and sustainable future for its people," said Joseph Rank, chief executive for Lockheed Martin in Saudi Arabia and Africa. Multiple theatres in the halls brought thought leadership and women-in-defence sessions, led by Princess Reema bint Bandar, the Saudi ambassador to the US, who gave visitors an indication of the changes in Saudi.

WDS chief commercial officer, Amanda Stainer, said: "The woman-in-defence day was incredible; we had some amazing women, not just Saudis, but international speakers talking about their careers, about how they've achieved where they've got to today."

With dates already set for 2024, there was no doubt that the event was a huge success – despite the weather marring plans for flying displays.

Ahmad Al-Ohali, governor of GAMI said: "WDS has established itself as one of the top defence and security shows in the world, which reflects the kingdom's position as a global driver of collaboration, innovation and business opportunities."

The next event will be held on March 3-6, 2024. ▲

**Landing with a THAAD:**  
**Lockheed Martin's Joseph Rank says new manufacturing deal is part of a 50-year relationship with the kingdom.**

PICTURE: BILLYPIX.



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**Clockwise from top left: SAEI chief executive, Captain Fahn Cynndy, with Liebherr-Aerospace's Alex Vlielander.**  
PICTURE: SAEI.

**Hayley Russell: "We saw considerable traffic to our stand and will definitely be returning in 2023."**  
PICTURE: ARABIAN AEROSPACE.

**Out in force: Joramco's team at what they described as "another fantastic event".**  
PICTURE: JORAMCO.

**Happy: Satair's Terry Stone (left) and Joramco's Fraser Currie after signing a supply contract extension at the show.**  
PICTURE: JORAMCO.

## Supply chains key to industry bounce

*The pent-up energy of two years that, by any definition, have been "difficult" gave this year's MRO Middle East exhibition added impetus.*  
**Chuck Grieve reports.**

Middle East MRO providers are happy to see their industry bouncing back from the Covid years, but will be even more pleased when current problems in the supply chain are ironed out.

The story emerging from the two-day exhibition that brought more than 130 exhibitors to Dubai in late February was that demand for shop visits is now outpacing capacity as airlines push to reactive their fleets.

And, while at the moment the Middle East industry may be outperforming the rest of the world, shortages of raw materials, spares, shipping capacity, and skilled manpower mean the next two years, at least, will be challenging.

That didn't dampen the spirits of show-goers, or slow the wave of contracts signed or announced at the show, which was once again co-located with Airline Interiors Middle East (AIME).

It was "another fantastic event" for Joramco, the Amman-based independent MRO. Elie Dib, director of commercial and business development, noting the agreements announced in Dubai, said: "Our hangars are reaching full capacity. We have ambitious growth plans in the pipeline."

Robbie Bourke, partner at management consulting firm, Oliver Wyman, agreed that the general mood of optimism was justified, certainly in the long term, although the MRO industry still faced "a challenging situation".

"If we're looking at the immediate short term, there's a lot of issues around the supply chain but also capacity," he said. "Matching capacity with demand is a real challenge for MROs and airlines."

Boeing returned to the show with an encouraging message about digital transformation. Kuljit Ghata-Aura, president, Boeing MEA and Turkey, said it was time to restart the process. "There's nothing more important than understanding your own efficiency," he said.

Prominent among exhibitors were Sanad, Etihad Airways Engineering, Mohammed bin Rashid Aerospace

Hub, MTU Maintenance, Safran, Turkish Technic, VD Gulf, and newcomer Eight Wings, a fledgling parts supplier based in Dubai and making a splash as a show sponsor.

First-time exhibitor, Hayley Russell, marketing manager of Conduce, an electronic technical logbook (ELB) solution, said the show "hugely exceeded" expectations. "We saw considerable traffic to our stand and will definitely be returning in 2023."

**Deals announced at the show included:**

■ Saudia Aerospace Engineering Industries (SAEI) and Liebherr-Aerospace expanded the Jeddah-based MRO's role in Liebherr's 'ecosystem of partners' to become the regional hub for Liebherr heat exchangers in the Middle East.

■ Turkish Technic signed a deal with Kuwait-based Jazeera Airways for C-checks on three Airbus A320neos, starting in late 2022. The new contract follows earlier A-checks for Jazeera.

■ A base maintenance contract with Swiss-based AMROS Global was also announced. Turkish Technic will carry out C-checks and lease-out operations on two Airbus A330 wide-body aircraft.

■ Joramco announced a new contract with GetJet Airlines covering six-year nose-to-tail checks on another three of the airline's A320 fleet.

■ Joramco will conduct heavy checks on four of delivery company DHL's A300-600 freighter aircraft. The first arrived in Amman in February, to be followed by three more from May.

■ Joramco also announced the extension of a maintenance agreement with Corendon Airlines.

■ Satair and Joramco extended an agreement covering the supply of consumables and expendables for Boeing and Airbus aircraft.

■ Mohammed Bin Rashid Aerospace Hub (MBRAH) signed a deal with Satys, a sealing and painting specialist, to provide services for the regional private jet and narrow-body fleet from a new hangar to be developed at the Dubai site.

■ Embraer announced a comprehensive long-term services agreement with Air Peace, the African launch customer of its E195-E2 medium-range airliner.

■ Boeing signed a memorandum of understanding (MoU) with Kenya Airways for landing gear exchange services.

■ Dubai low-cost airline, Flydubai, signed a multi-year agreement with Boeing for parts provisioning and quick engine change (QEC) kits for its all-Boeing fleet.

■ Sharjah-based VD Gulf renewed an agreement with Airbus subsidiary, Satair, a global parts supplier, covering spares for Boeing and Airbus types. ▲

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PREVIEWS

Two huge shows in Dubai – the Arabian Travel Market (ATM) and the Airport Show 2022 – are expected to be packed out as business starts to bounce back from the effects of the pandemic.

Marcelle Nethersole reports.

## WHY DUBAI'S SHOW DOUBLE IS SUCH A BIG DEAL



**Exciting: ATM will showcase more than 2,800 products and destinations from around the world to 28,000 buyers and travel trade visitors.**  
PICTURE: ATM.

Billion dollar deals are expected at both the Airport Show and ATM.

First to kick off will be ATM, which takes place at the Dubai International Convention & Exhibition Centre (DICEC) from May 9-12. A virtual programme will follow on May 17-18, allowing people who can't travel to still be involved.

The annual business-to-business exhibition will showcase more than 2,800 products and destinations from around the world to in excess of 28,000 buyers and travel trade visitors across the four-day event. It is expected to generate more than \$2.5 billion of travel industry deals.

ATM exhibition director, Danielle Curtis, said: "If I had to sum up the mood in a single word, I think it would have to be 'excitement'. ATM 2022's theme is 'the future of international travel', and this is exactly where our industry's sights should be set."

So, what can visitors expect from this year's event?

"Show highlights will include, among others, destination summits focused on the key source markets of Saudi Arabia and India," said Curtis.

"At the same time, the revamped and rebranded ATM Travel Tech event – previously known as Travel Forward – will host seminars, debates and presentations, as well as the inaugural ATM Draper-Aladdin start-up competition,

where around 15 start-up companies from across the tourism and hospitality sector will be given the opportunity to pitch for up to \$500,000 funding.

"ATM will also play an integral role in Arabian Travel Week, which will enable professionals from all over the world to collaborate and shape the recovery of our region's industry through exhibitions, conferences, breakfast briefings, awards, product launches and networking events," said Curtis.

Something else new this year will be the best stand awards, which will recognise creative design, people skills and the business-friendly appeal of exhibiting companies.

Curtis said: "ATM would not be the huge success it is without the incredible amount of effort and investment that goes into creating and manning the exhibitor stands at the show."

■ Meanwhile, the Airport Show takes place from May 17-19 at the Dubai World Trade Centre (DWTC).

Organised by Reed Exhibitions Middle East, the 21st edition will provide insights into the investments planned by the world's airports until 2040.

Airports are increasingly becoming destinations in their own right and are trying to improve the passenger experience by utilising new technologies. They are fast-tracking security controls and boarding gates, and grasping the opportunity to improve operational processes.

This year's event will have a strong focus on 'digital' airports as they continue to adopt technologies such as biometric-based checks, self-boarding, real-time bag-tracking and digitalised air traffic management.

The figures are staggering. The annual expenditure on airport security systems alone is set to top \$12.67 billion by 2023 and the global airport technologies market is expected to grow almost 5% this year to more than \$13 billion. Then, throw in the 'smart airports' market, which is projected to grow to \$6.4 billion by 2025, and the scope of the market is amazing.

Firas Abu Ltaif, exhibition manager at Reeds Exhibitions, said: "The aviation industry needs to prepare itself for the boom period in the near future. Airports and airlines across the world are now on their way to recovery."

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INNOVATION

*Qatar's Hamad International Airport looks to the future after coming out of the pandemic as a clear winner in the technology and sustainability stakes. Marcelle Nethersole reports.*

## HIA's best keeps getting better

**H**amad International Airport (HIA) was named 'best airport in the world' in the 2021 Skytrax Awards for its 'safe and seamless connectivity' during the pandemic – just one of a number of accolades it has won over the last couple of years.

Much of this success is down to its state-of-the-art technology.

"Since the start of the pandemic, HIA has worked hard to ensure that passengers can continue to travel in a safe airport environment," explained HIA chief operating officer, Badr Mohammed Al Meer.

"We introduced new health and safety processes to align with World Health Organization (WHO) guidelines, implemented new technologies, increased our cleaning efforts, and constantly adapted to the 'new normal' of air travel."

HIA has implemented cutting-edge technologies to secure a hassle-free passenger experience from arrival and transfers, to boarding, achieving minimal and seamless connection time.

Al Meer said: "Innovative technology, such as HIA's smart screening helmets, enable contactless temperature measurement and the airport's fully autonomous disinfectant robots have optimised operations, effectively eliminating the majority of infectious microorganisms."

"The airport has in place ultraviolet light (UVC) disinfection tunnels in its terminals to decontaminate arriving passengers' luggage, as well as other new technology, which allows transferring passengers to move through security checkpoints without having to take out any electronic devices from their bags."

"Using computer vision and artificial intelligence, HIA's internal teams also developed an automated facial detection system to ensure the wearing of masks. The airport also provides a streamlined touchless passenger experience at key touchpoints, such as self-check-in and self-bag-drop."

Since 2014, HIA has showcased its commitment to environmental sustainability by pledging to improve carbon efficiency per traffic unit to 30% by 2030. The airport has since observed a steady downward trend in overall CO2 emissions and has been certified at level three by the Airport Council International (ACI)

**Above: HIA added eight new passenger destinations, six new cargo destinations, and a new airline partner last year.**

**Below: HIA was named 'best airport in the world' in 2021.**  
PICTURES: HIA.

airport carbon accreditation programme.

There is a continued commitment to environmental sustainability. HIA's expansion will make it the first airport in the MENA region to achieve a four-star global sustainability assessment system (GSAS) rating. This is a performance-based system for rating green buildings and infrastructure.

The terminal will also be a leadership in energy and environmental design (LEED) silver-certified building with innovative energy efficiency measures incorporated throughout the premises.

"As part of HIA's expansion project, the flora for its indoor garden is being brought in from sustainable forests from around the world," explained Al Meer. "All plants have been selected to acclimatise to the internal conditions of the terminal, minimising the ecological impact of the development. They will continue to grow throughout the life of the airport."

Proof that the airport is running 'business as usual' since the pandemic are its passenger figures. It served 17.7 million passengers in 2021 – a leap of 41% year-on-year.

Flights from the Doha hub connect to 160 other destinations, with eight new passenger destinations and a new airline partner; RwandAir, added to the network last year.

Airport cargo operations increased by 20.71% in 2021, with 2,589,283 tonnes of cargo handled, along with the introduction of six new cargo destinations. Aircraft movements also grew by 28.12%, with 169,909 total aircraft take-offs and landings.

This November, the airport is looking forward to receiving an influx of passengers and airlines as the official airport partner for the FIFA World Cup Qatar 2022.

"The airport will soon grow its capacity to more than 58 million passengers annually, which falls under the expansion project's initial phase," said Al Meer. "Phase B, which will begin after the World Cup, will increase the airport's capacity to more than 60 million passengers annually."

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Queen Alia International Airport, the gateway to Jordan, is embracing innovative technology and sustainability solutions as it fights back in the post-pandemic era. **Anuradha Deenapanray Chappard** reports.



Improved passenger experience: Trial testing of the Amadeus biometric solution. PICTURE: QAIA.  
Above: QAIA, staying one step ahead. PICTURE: ALAIN LEDUC, AIG.

## Queen Alia going digital... and green

According to forecasts, Queen Alia International Airport (QAIA) is expected to support 278,000 jobs and create 3.9 billion JOD (\$5.5bn) in gross domestic product (GDP) by 2032.

Charged with getting the airport to that point is Airport International Group (AIG), which won an open tender in 2007 to operate, rehabilitate and manage QAIA under a 25-year concession agreement.

Under the deal AIG, with a 51% stake held by Groupe ADP alongside builders and investment funds (since 2018), has a mandate to redevelop Jordan's key gateway.

In the past decade, expansion work undertaken by the company, gathering regional investors and international experts, has positioned the airport as a significant growth lever and a major infrastructure asset for the Jordanian tourism industry.

Of course, all airports around the world have been affected by the Covid-19 pandemic, and QAIA is no exception.

"The traffic statistics for February clearly indicate that QAIA has not yet recovered to pre-Covid 19 levels. Nevertheless, we remain optimistic that, with the current easing and inevitable lifting of travel restrictions, traffic will pick up during upcoming seasons," said AIG CEO, Nicolas Claude.

The airport is now expecting to recover its 2019 level of traffic by 2024.

QAIA, which is home to the national flag-carrier, Royal Jordanian Airlines (RJ), serves more than 40 different carriers. It gives direct access to major cities in Europe, Asia, Africa, North America and the Middle East. RJ alone boasts more than 45 destinations worldwide.

Named 'best Middle East airport in the 5-15 million passenger category' by Airports Council International (ACI), QAIA is not resting on its laurels.

In collaboration with RJ and travel technology company, Amadeus, it launched a trial testing (10 weeks) of the

Amadeus biometric solution on select flights to Istanbul in mid-February.

This solution involves a facial recognition service installed at self-check-in kiosks and boarding gates.

The first responses appear to be promising and come at the right time, particularly as Inmarsat's passenger confidence tracker – the world's largest survey of airline passengers since the pandemic – shows that habits are set to change drastically for the long-term. Eight in ten airline passengers (83%) are not expecting to return to their previous travel routines once the Covid-19 pandemic is over.

Consequently, airports worldwide are shifting towards digital transformational technologies. "There's a need to understand passenger needs and expectations to meet their demand," said Claude. "This was the rationale behind launching the biometric test from check-in to boarding with RJ and Amadeus. It has allowed us to identify where our processes had to be strengthened, to understand the passengers' behaviour with the new technology, and how to be better prepared for a larger scale implementation of these technologies."

□□□□□

For RJ vice-chairman and CEO, Samer Majali, this solution shows the national carrier's endeavour "to make the travellers' airport experience as smooth and as safe as possible".

By trialling biometrics across the entire passenger experience, the partners believe they are setting the standard for innovation.

Yannick Beunardeau, VP airport IT, EMEA for Amadeus, said: "It's a drastic improvement in the passenger experience, and I expect the vast majority of airports to move in this direction."

QAIA is proud of what it has achieved in terms of sustainability. In 2018 it became the first airport in the Middle East to achieve ACI's level three carbon neutral status, and in 2020 it obtained ACI accreditation for prioritising health and safety in a measurable and established manner.

For the future, AIG has plans to enhance the digital off-airport check-in, the use of self-check-in kiosks and baggage drop, and introduce new tools to monitor traffic flow to proactively manage resources and airport processes. ▲

Newly appointed Minister of Industry and Commerce, Ryad Mezzour, met representatives of the Group of Aeronautics and Space Industries of Morocco (GIMAS) to give new impetus to the sector. **Vincent Chappard** reports.

# Morocco aerospace on the ‘realistic’ road to recovery

Morocco’s aerospace industry and its supply chain are struggling hard to show resilience and responsiveness to the Covid-19 crisis. The Omicron variant once again brought air transport to a standstill on December 1.

In the wake of the virus, the new minister held a meeting with industry representatives at the headquarters of the Institute of Aeronautical Trades (IMA) to discuss future development.

More than 140 companies have been established within the kingdom’s aerospace industry over the last 20 years, employing around 18,000 highly skilled workers.

But the aerospace ecosystem, which had been spearheading national growth prior to the pandemic, has been going through a crisis for the last two years.

According to Karim Cheikh, president of GIMAS, aviation activity has fallen by around 29% in Morocco compared to 50% worldwide. Job cuts remained limited to 10% (around 1,500 personnel) against 40% worldwide.

Now, however, the recovery prospects, well before 2023, are becoming clearer and more realistic.

“Morocco has kept all of its production sites operational and has made significant investments, despite the difficult context,” said the minister, who also stressed the importance of further developing R&D, engineering and collaborative programmes with universities and research centres.

“This sector has the capacity to double the number of jobs and its export capacity in the next two years.”

Despite the pandemic, since last year many aerospace groups have been strengthening their presence and activities in Morocco, which is constantly enhancing the attractiveness of its aerospace industry through investment incentives.

▼ The Moroccan aeronautical platform must position itself and be present today and tomorrow. ▲  
Karim Cheikh

For example, KEP Technologies has set up in the Midparc aeronautical zone of Casablanca with four core activities – design and manufacture of metal assemblies, materials characterisation, industrial control, and radioactivity metrology.

According to CEO, Sandra Schindler, KEP Technologies plans to increase its production capacity and diversify its products in the aerospace, rail, and renewable energy sectors.

American company, Hexcel, will also double the surface area of its site in Casablanca at the start of 2023. Its workforce is expected to increase from 120 to more than 400.

Hexcel president, Thierry Merlot, has confirmed his company’s decision to continue its investment in Morocco alongside many players such as Stelia Aerospace, Safran and Spirit AeroSystems. The availability of a skilled workforce, state support, and proximity to customers guided Hexel’s thinking.

□□□□□

Furthermore, last year Pilatus signed a contract for the assembly of PC-12 aerostructures at Sabca’s facility in Morocco. The first fuselage and wing structure will be assembled at its new facility in Casablanca.

The first delivery to the final assembly line in Stans (Switzerland) is expected by the end of this year.

Sabca has also announced an investment of more than €17 million (\$19.35m) to build a new 16,000sqm facility, which will house the PC-12 aerostructure assembly line near Nouaceur. A close collaboration has been established with the IMA to train local skills for the PC-12 programme.

The Moroccan aeronautical platform remains attractive, competitive and recognised.

Cheikh said the sector is facing a technological evolution, which will help determine its future. “The Moroccan aeronautical platform must position itself and be present today and tomorrow,” he said.

Several technological programmes have been launched for zero emission aircraft, as well as hybrid and hydrogen propulsion. “We are working on these technological breakthroughs to be present on D-day in these areas,” said Cheikh.

GIMAS is relying on the decarbonisation of its activities, the evolution towards Industry 4.0 through advanced technologies, and research & development (R&D).

After the production of parts, sub-assembly, and the assembly of infrastructure, Mezzour estimates that, shortly, Morocco will have the capacity to undertake the final assembly of an aircraft.

Morocco has set itself a timeline of two years to achieve this goal. ▲

PICTURE: GIMAS

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## Excitement grows over Mars data

*The Emirates Mars Mission Hope probe has now been in space for nearly two years focusing on the atmosphere and climate of the Red Planet.*  
**Steve Nichols**  
*reports.*

Scientists are increasingly excited by the data they are receiving from the UAE's Mars Hope spaceship. The probe successfully entered orbit around Mars on February 9 2021, having been launched from Tanegashima, Japan, on July 19 2020.

The mission is exploring the atmospheric processes that drive daily variations, how energy is transferred from the lower-middle atmosphere to the upper atmosphere, and how lower atmosphere conditions are connected to the escape of atmospheric particles from the planet.

It is looking at the Martian atmosphere in visible, ultraviolet, and infrared wavelengths using its three separate imaging systems.

The spacecraft is now about half way through its primary mission.

Hessa Al Matroushi, science lead for the mission, told a virtual meeting of the Mars exploration programme analysis group, a NASA advisory board: "We're very excited about the science that we're getting from this mission."

Hope's primary mission is planned to last one Martian year (687 Earth days). Scientists want to understand how weather and climate work across the entire planet, both throughout a day and throughout a year.

Al Matroushi said that the team has been studying water cloud features that appear to grow at the beginning and end of the day and shrink in the middle.

The mission releases new data every three months, Al Matroushi noted.

**Peering through the gloom: Hope monitors a massive dust storm on Mars.**  
PICTURE: EMIRATES MARS MISSION/EXI.

There is also the possibility of the start of an extended mission beginning next year.

The probe has been beaming back stunning images of the planet that have revealed its geographical features and atmospheric conditions.

Scientists around the world have also been benefiting from the vast amount of data the mission has released so far, including images of the planet's aurora and abundance of oxygen.

Mars' aurorae are unlike the type we have on Earth, which are concentrated at the north and south magnetic poles. Known as a "discrete aurora" on the night-time side of the Red Planet, the phenomenon is caused by solar energy interacting with crustal formations that still bear traces of the planet's long-gone magnetic field.

In January, the second set of data released focused on some of the planet's key geographical features, such as Olympus Mons, the largest volcano in the solar system, and Valles Marineris, a canyon network that is 4,000km long and reaches depths of up to 7km.

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Hope has also provided new data on how dust storms develop and evolve over time, using its camera and infrared spectrometer.

Scientists were able to watch one storm develop, spread out to 2,500 miles across, obscure features including mountains and craters, and then thin out to nothing in two weeks.

Having access to this type of data could one day help humans living on the Red Planet know whether it is safe to venture outside, or if they needed to cover solar panels.

The team has also produced a unique Mars Atlas, highlighting features and views of the Red Planet, along with seasonal changes that Hope has witnessed.

So far, more than 300Gb of Hope's data has been released, which is being made freely available to scientists around the world.

Hope's early results were revealed at the 53rd Lunar and Planetary Science Conference, a hybrid (in-person/remote) event held near Houston, Texas, USA, from March 7-11 this year.

The Emirates News Agency (WAM) has also produced a 12-minute documentary entitled *The Story of Hope* to mark the first anniversary of the successful orbital launch of the probe around Mars.

The UAE's next major space mission, which will be launched in 2028, will involve a fly-by of Venus, as well as a tour of seven different asteroids, ending with a landing on the last of them. If the mission is successful, this will make the UAE just the fourth country in the world to achieve such a feat. ▲

## ▲ ALL IN A DAY

### David Adebiyi *Marcelle Nethersole speaks to the chief commercial officer, Global Air Navigation Services (GANS).*

#### Can you tell me about GANS and the services it provides?

GANS is a leading provider of air navigation services and solutions. We provide a complete array of related services to customers.

Today, we are responsible for the provision of safe and efficient air traffic services at 16 airports. Before the pandemic we handled more than 530,000 flight movements annually.

We provide an assortment of services, from aerodrome and approach air traffic control services with all the support elements, which requires highly skilled people, processes and systems to ensure that operational requirements are delivered in a safe, orderly and expeditious manner.

Our services also include engineering, air traffic control training, and air traffic management (ATM) consultancy, which includes safety and project management.

#### What are GANS' growth aspirations?

Although we are concentrating on organic and inorganic sustainable growth opportunities, GANS has already provided services to customers in 19 countries based in the Middle East, Asia and Africa.

With our highly skilled multi-national workforce from 50 countries, we are looking to provide cost-effective solutions to new customers.

Virtual training courses are a cost-effective solution, which we have already started offering to customers.

#### How has GANS coped with coming out of the pandemic?

The Covid-19 pandemic had an adverse impact on operations, with air traffic movements falling by more than 85% at its peak.

We have been on the front foot in managing our reaction to the pandemic with the activation of our crisis management procedures, which allowed us to successfully steer the organisation through this event.

From a performance perspective, we are now transitioning from the very stringent measures introduced to ensure continuity of service as traffic levels continue to increase.

With traffic returning, the risk to controller proficiency is becoming less every day and the lasting legacy from the pandemic is likely to be the wider embrace of virtual meetings and training.

#### What do you think the aviation industry has learnt coming out of the pandemic?

In a post-pandemic world, I believe that innovative technological developments and commercialisation will play a significant part in enabling air navigation service providers (ANSPs) to reduce their operational costs to support the recovery of the aviation industry.

At GANS, we are confident that the industry will recover after the pandemic and we expect it to be more efficient and resilient as it embraces cost-effectiveness underpinned by innovation.

#### GANS will be at the Airport Show 2022 – will it be announcing anything new?

By holding Airport Show 2022, the aviation industry is showing its resilience and that the post-pandemic recovery is well and truly on its way.

We will be participating in some topical air traffic-related discussion panels.

We are also working on a new website, which will launch just before the Airport Show. It will showcase our new brand and future strategy.

#### What does a typical day hold for you in your role?

I enjoy my job as it is extremely varied and there is never a dull moment. Every day comes with its own unique set of circumstances in an industry where we provide air traffic control services 24/7.

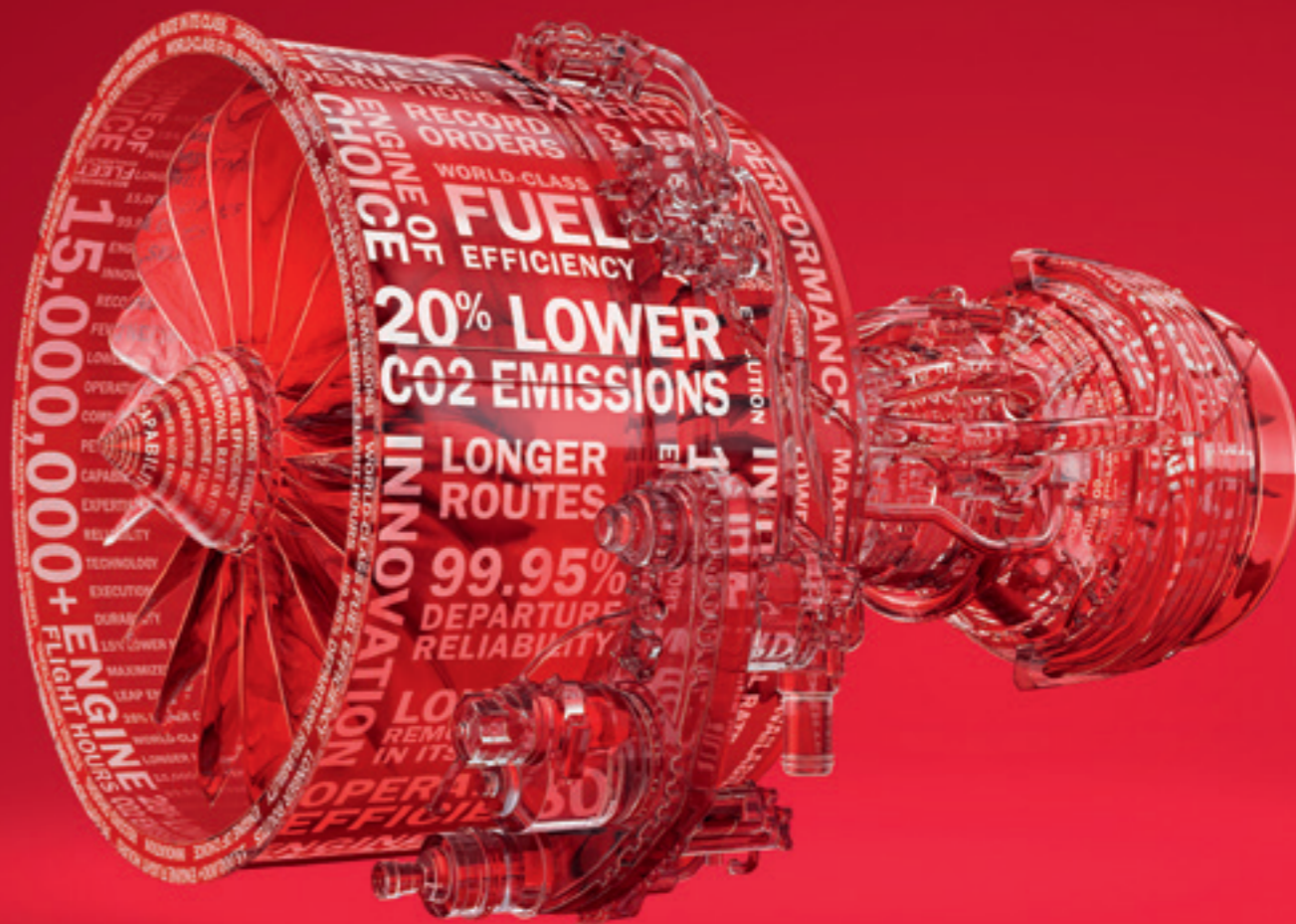
In addition to being responsible for the achievement of our growth strategy, as part of the GANS executive team I work closely with highly skilled and talented people from across the organisation.

A typical day for me involves overseeing strategy delivery and business development across the company; this includes delivering sales and marketing objectives, while also ensuring that our performance continues to meet and exceed customer expectations.

I also invest some of my time to build industry partnerships with other ANSPs and key industry organisations and players.



PICTURE: GANS



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