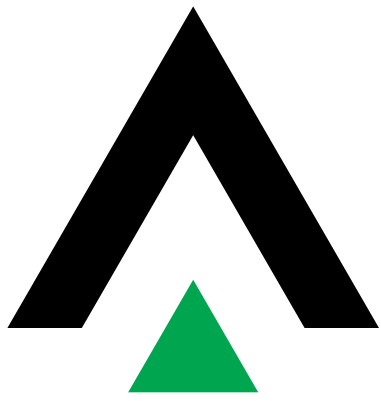


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KUWAIT LIFTING

**STEP BY STEP
TO PROFIT
AND GROWTH**

– PAGE 10



AIR TRANSPORT

Freighters
ease the
pressure on
sea cargo

PAGE 19



SUSTAINABILITY

What is
the price
to pay for
net zero?

PAGE 45



MANUFACTURING

Embraer's
regional
plan for
expansion

PAGE 48



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Publisher:
Mark Brown
mark.brown@timesaerospace.aero

Display Advertising:
Grant Lee
grant.lee@timesaerospace.aero

Circulation Dept:
Clare Brown
clare.brown@timesaerospace.aero

Editorial
news@timesaerospace.aero

Editor-in-chief:
Alan Peaford

Editor: Steve Knight
steve@knighttrain.co.uk

Editorial head office:
Aerocomm Ltd,
Norths, Rectory Road, Orsett, Essex
RM16 3JU UK.

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CEO Maen Razouqi
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Advertisers

Abu Dhabi Air Expo 2022	51
Aero MRO India 2022	32
AJW Group	18
AMAC Aerospace	IFC, 1
Aviation Africa 2022	21
Bahrain International Airshow 2022	57
BOSE Aviation	23
CFM International	7
Collins Aerospace	2
DC Aviation Al-Futtaim	37
Dubai Airshow 2023	IBC
Embraer Commercial Aviation	8
Embraer Defense & Security	29
ExecuJet MRO Services	34
IAI	5
IDEX 2023	26
ISNR 2022	53
Jewellers Doors Limited	41
L3Harris	15
LIEBHERR	38
Lufthansa Consulting	OBC
MAPS 2022	31
MEBAA	25
MEBAA Show 2022	59
MTU Maintenance	16
Raytheon Missiles & Defense	42, 43
Rolls-Royce	47
SES	44
TFASA	54
TP Aerospace	12
VMS Aero	50

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SUSTAINED ACTION NEEDED TO HIT TARGETS

Events such as the Global Aerospace Summit in Abu Dhabi and the annual general meeting of IATA in Qatar shared a common underlying theme – sustainability.

Pressure is mounting on governments to set clear roadmaps towards achieving net zero emissions by 2050. In September, member states will meet at the ICAO triennial congress where targets for aviation will be defined; Egypt will be hosting COP27, where governments will debate the best way forward.

The airlines are doing a grand job of showing commitment. Etihad's ecoDemonstrator aircraft are receiving international recognition with their testing and proving new equipment and practices to reduce the airline's environmental impact.

But in this issue, Abdul Wahab Teffaha outlines concern about how the burden being placed on aviation needs to be mitigated by action – and financial support – if targets are to be achieved.

Speaking to us at the IATA event, AACO's secretary general said Arab governments need to address reform of the region's air traffic management (ATM) infrastructure

and introduce strong incentives for sustainable aviation fuel (SAF) production.

At the moment, no SAF is being produced across the Arab world. It can cost more than 30% more than current fuel – and it is in short supply. So even if SAF can be sourced, the cost could cripple airlines. This is where governments must support the airlines with incentives to help obtain the fuel and to encourage domestic production.

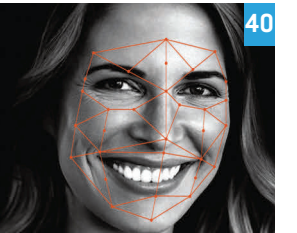
A transition from economies based on fossil fuel production to ones centred around a sustainable energy industry is critical over the coming decades, Teffaha says.

In this issue we also look at changes in the cargo market. During the pandemic, freight was the saviour of the air transport industry, while at the same time it proved the value of aviation when other forms of transporting goods were hampered.

Now passenger markets are bouncing back, it is good to see airlines investing in their freighter business.

For too long, cargo operators have been the poor cousins in the eyes of the airlines. They have proved their worth and have the chance now to build the business both financially and sustainably.

Alan Peaford, editor-in-chief



04 Business brief: Regional round-up

AIR TRANSPORT

10 COVER STORY:

Profitable footing: Maen Razouqi explains the challenge to restructure Kuwait Airways.

13 Disappearing act: What happened to Saudi Gulf Airlines?

14 Strategic retreat: Tunisair head Khaled Chelly reveals the outline of Tunisair's tough restructuring plan.

17 IATA AGM: The airline industry met in Qatar to contemplate a world where Covid is receding and recovery is accelerating.

CARGO

19 Full order: Emirates SkyCargo has recently received the last of a batch of 12 Boeing 777Fs from the US manufacturer.

22 Conversion rate: A boost in feedstock availability has resulted in a surge of passenger-to-freighter (P2F) conversion.

24 Digitalisation: Cargo handlers in the UAE are accelerating the digitalisation of cargo in order to improve speed and efficiency.

DEFENCE

27 Ups and downs: The latest defence activity taking place in the MENA region.

BUSINESS AVIATION

35 Arcosjet has relocated to Dubai and plans regional growth

36: VIP Club: Egypt is about to join the elite VIP-configured Boeing 747-8 operators.

AIRPORTS

39 Growth focus: French aviation specialist Egis sees opportunities in a vibrant and growing Gulf market.

40 Going paperless: Collins Aerospace is keeping an eye on biometrics.

41 World beater: Menzies Aviation's acquisition by Agility will make it the world's largest airport services company.

SUSTAINABILITY

45 Counting the cost: Airlines want to achieve net zero targets but they cannot do it alone.

46 Achieving deadlines: Etihad is serious about its commitments to sustainability through reducing carbon emissions and eliminating waste.

MANUFACTURING

48 Thinking ahead: Embraer has unveiled its plans for the future, including its hopes for the Middle East commercial and military markets.

50 Expanding horizons: A recent agreement between Israel Aerospace Industries and Morocco opens the door for 'win-win' cooperation.

TRAINING

52 Training picks up: Gulf Helicopters Training Academy in Doha is looking to the future.

TECHNOLOGY

54 Route optimisation: A system based on Thales' PureFlyt product will help airlines reduce their carbon footprint.

55 Green triumph: Wayakit develops a new product in aviation disinfection.

EVENTS

56 Travel recovery: International travel is expected to see strong growth.

PEOPLE

60 All in a day: Osama Nawayseh, Middle East sales manager of Vision-Box.

Hamad's smart way to smoother operations

Hamad International Airport (HIA) in Doha has officially launched an innovative 'digital twin' initiative as part of its smart airport programme. HIA worked with industry partner SITA to design the digital twin to provide a real-time view of the airport through an intuitive 3D interface. Its powerful analytical engine integrates information from multiple airport systems to provide intelligent recommendations to help optimise operations.

The development combined 3D modelling techniques, data analytics and artificial intelligence (AI) to deliver improved, faster and data-driven decision-making. The digital twin manages aircraft stand conflicts, enables effective responses to alerts and monitors the health of critical airport assets. Additionally, it effectively utilises the right data at the right time to allow optimisation of resources to minimise asset downtime.

Kuwait-Sri Lankan launch codeshare

Kuwait Airways has signed a codeshare agreement with SriLankan Airlines.

Kuwait Airways chief executive Maen Razouqi said: "This agreement enhances the existing commercial relations between Kuwait Airways and SriLankan Airlines, which have spanned more than four decades since 1978, and now advances to new heights."

From October, Kuwait Airways will operate three weekly flights to Colombo.

SriLankan Airlines, which has been serving passengers on this route since 1999, currently operates one daily flight to Kuwait.

ACA first for Amman

Queen Alia International Airport in Amman has become the first in the Middle East to achieve Level 4+ 'Transition' under the airport carbon accreditation (ACA) programme.

The Transition

certificate, granted by Airports Council International (ACI) Asia-Pacific, is valid until May 2025.

Nicolas Claude, chief executive of Airport International Group, said: "Since 2013, QAIA has been setting an example of what it means to be a climate-friendly airport and has been the first in the Middle East to achieve 'Neutrality'. Such a proud feat is instrumental in highlighting not only QAIA, but also Jordan, on the global aviation stage."

Delhi route

Turkish Airlines (THY) and IndiGo have resumed their codeshare agreement.

A THY spokesman said Turkish Airlines currently operates a daily flight on Delhi-Istanbul and Mumbai-Istanbul routes. IndiGo operates a daily flight on the Delhi-Istanbul route and planned to add a second frequency from August.



Milestone contract: Turkish Technic and Oman Air have signed a 10-year component pool agreement. IMAGE: TURKISH TECHNIC

Oman Air pools resources with Turkish Technic

Turkish Technic and Oman Air have signed a comprehensive 10-year component pool and advance exchange contract for the airline's fleet of Boeing B737 Next Generation and Boeing 737 MAX family aircraft.

Terminating the contract "another milestone", Mikail Akbulut, chief executive of Turkish Technic, said: "We are happy that Oman Air has decided to partner with us for component pool and exchange services. As a leading component service provider for more than 900 aircraft from all around the world, we will do our best to help ensure Oman Air continues to meet its customers' expectations."

Capt Nasser Ahmed Al Salmi, chief operating officer of Oman Air, said the airline was happy to "put our confidence in the globally-recognised services provided by Turkish Technic".

Medical solution

Etihad Cargo has signed a memorandum of understanding (MOU) with B Medical Systems for sustainable pharmaceutical transportation solutions. They will develop and launch an airline-specific passive temperature-controlled solution for the transportation of life-saving drugs, vaccines and high-value pharmaceuticals.

It's a pass!

EgyptAir Training Academy (ETA) has successfully passed its International Civil Aviation Organization (ICAO) inspection to renew its full membership of ICAO's Trainair Plus programme (TPP). The programme is established and developed by ICAO Global Aviation Training (GAT). It aims to increase efficiency in the development of training programmes by committing its members to implement competency-based training measures.

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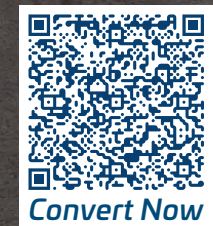
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Sanad signs Triumph collaboration deal

Sanad, the Abu Dhabi-based maintenance, repair and overhaul (MRO) specialist, has signed a memorandum of understanding (MOU) with the USA's Triumph Group to collaborate on the provision of next-generation engine MRO capabilities in the UAE.

The agreement was signed at the Global Aerospace Summit in Abu Dhabi.

Sanad, a subsidiary of Mubadala Investment, will collaborate with Triumph on solutions for multiple engine types for aerospace and aviation industry operators across the Middle East and Africa (ME&A). It advances Sanad's service offerings beyond engine overhauls while simultaneously providing Triumph with an immediate footprint in the ME&A region as they jointly establish a Centre of Excellence in Abu Dhabi supporting V2500, CFM and GE90 engine accessory repairs and overhauls for global customers.

Beijing bound

Etihad Airways resumed flights between Abu Dhabi and Beijing in June.

Tony Douglas, chief executive of Etihad Aviation Group, said: "The flight marked a significant moment in Etihad's history as passenger flights resume to Beijing for the first time in more than 800 days. The direct flights between Abu Dhabi and Beijing will



Sheikha Mozah first woman to pilot AW609

Airframer Leonardo hosted trailblazing UAE pilot HH Sheikha Mozah bint Marwan Al Maktoum in May at its US helicopter headquarters in Philadelphia, giving her the opportunity to test-fly the revolutionary AW609 tiltrotor aircraft – the first woman to do so.

The AW609 is the world's first tiltrotor set to receive civil certification.

Sheikha Mozah said: "Piloting the AW609 has been on my bucket list since I first saw the early prototype images. It is the natural evolution of my piloting experience, merging both fixed and rotary-winged piloting skills. I am still pinching myself for this opportunity! Aircraft like this one make me feel really excited about the future of aviation, a future now open to more women who chose this industry."

undoubtedly facilitate the deepening of bilateral cooperation in various fields and promote stronger bonds among the people of the two nations."

Emirates on ICE

Emirates has partnered with Shahid, an Arabic streaming platform, to offer premium content exclusively onboard its inflight information, communication and entertainment (ICE) system.

The partnership makes Emirates ICE the only channel to offer access to popular titles by Shahid Originals, aside from the

streaming service's own premium-subscription online platform.

Qatar's record profit

Qatar Airways Group has seen its strongest financial performance in its 25 years of operation, showing net profits 200% above its highest previously reported figures.

The group reported a record net profit of US\$1.5 billion during the fiscal year 2021/22. Overall revenue increased to US\$14.4 billion, up 78% compared to last year. Passenger revenue increased by 210% over the last year. The

airline carried 18.5 million passengers, an increase of 218% over last year.

Arrows target Bahrain

The Red Arrows, the RAF's aerobatic team, will perform at the Bahrain International Airshow (BIAS) in November for the first time in its 10-year history. The Red Arrows will be taking part in a Gulf tour including Bahrain, Kuwait, Saudi Arabia and the UAE, using the opportunity of their presence at BIAS to carry out a series of displays, flypasts and ground events elsewhere in the region.

Emirates breaks new ground in Israel

A landmark Emirates flight which touched down at Tel Aviv's Ben Gurion airport in June was the airline's first service into Israel, made possible by the 2020 Abraham Accords. The Boeing 777 was welcomed with a water cannon salute.

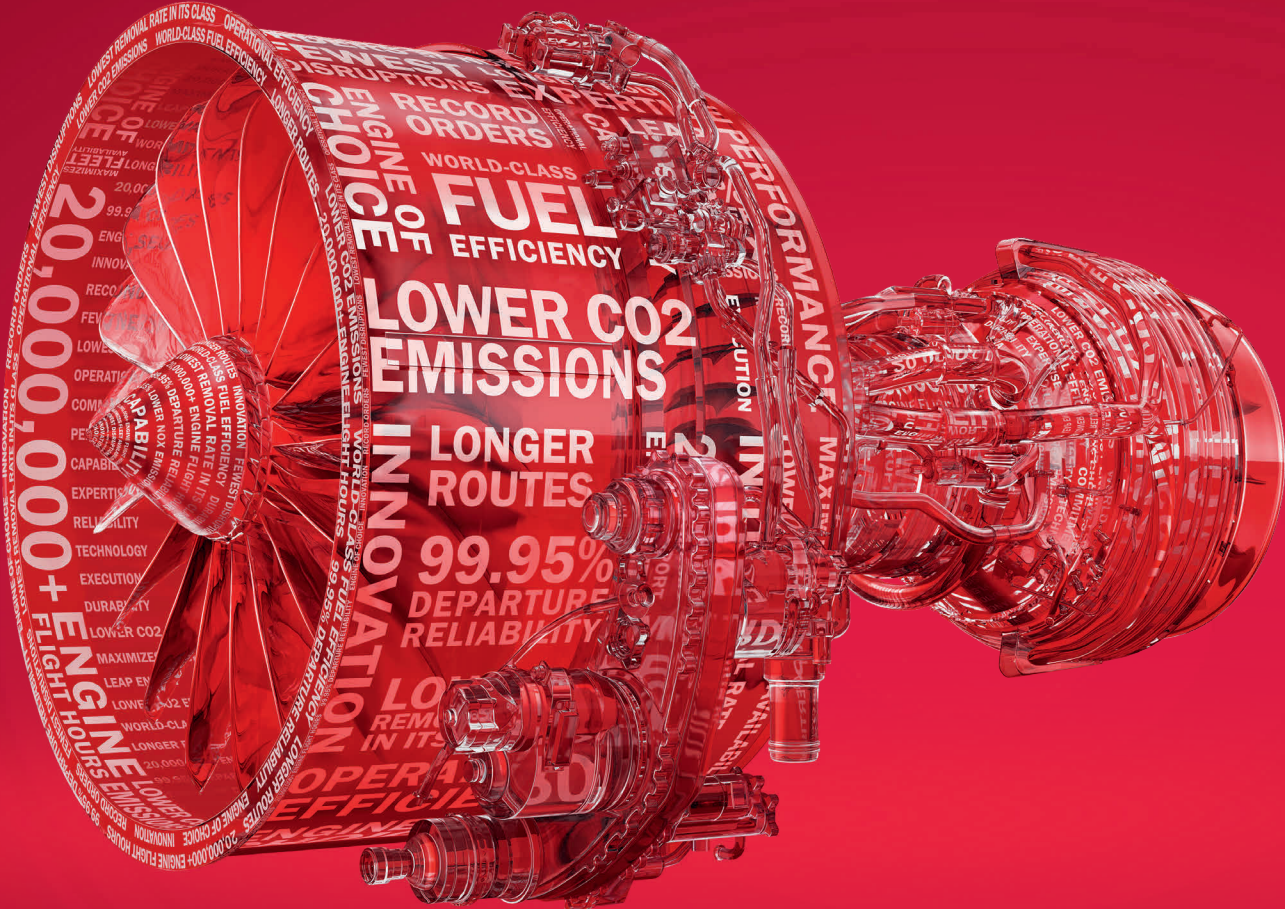
Merav Michaeli, Israel's Minister of Transport and Road Safety, said: "The ties between Israel and the UAE are strategic economic ties and are critical to strengthening our position in the face of the changing threats in the Middle East."

The minister said she had signed agreements on an earlier visit to the UAE to facilitate trade and mobility between the two nations.

Simulator capability

Dubai Aviation Engineering Projects (DAEP) has selected Micro Nav's air traffic control (ATC) tower simulator suite, BEST, to support its plans for air traffic growth at both Dubai and Al Maktoum International Airports.

DANS, the provider of air navigation services and ATC for Dubai and the Northern Emirates, will deploy BEST to enable the planned technological advancements, while defining the concept of operations and increasing its training capacity to support continuous growth.



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*Compared to previous generation engines.



First flight: Etihad's 'sustainable 50' A350 aircraft will serve JFK. PICTURE: ETIHAD AIRWAYS.

Sustainable50 flies to New York

Abu Dhabi's Etihad Airways celebrated the arrival of one of its new Airbus A350-1000s at New York's John F Kennedy International Airport (JFK) on June 30.

The aircraft, which accommodates 371 passengers, is one of five new examples of the type to join Etihad's fleet this year.

The A350 will operate all Etihad flights servicing New York and Chicago

O'Hare International Airport, joining Mumbai and Delhi routes that began in April this year.

Martin Drew, senior vice-president global, said: "This is an incredible aircraft with highly efficient fuel consumption and CO₂ savings, which enables us to support our goals to reduce carbon emissions and deliver an unmatched flight experience for our guests."



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Qatar opts for more 737 MAX jets

Boeing and Qatar Airways finalised an order for 25 B737 MAX jets at the Farnborough International airshow. Seating up to 230 passengers with a range of 3,300 nautical miles, the 737-10 is the largest of the 737 MAX family.

Centre for Riyadh

Saudi Arabian Military Industries (SAMI) Composites has signed an agreement with Lockheed Martin to develop a composites manufacturing centre of excellence in Riyadh.

Announced at the Farnborough International airshow, the new composites manufacturing centre will help Saudi Arabia build its aerospace manufacturing capabilities and develop national talent.

HIA 'best airport'

Hamad International Airport (HIA) in Doha was named the Best Airport in the World for the second year in a row in the Skytrax World Airport Awards 2022 in June.

The airport has also retained its title as the Best Airport in the Middle East for the eighth year running.

The awards were based on votes by air travellers and passenger satisfaction surveys across 39 key performance indicators for airport services and products including check-in, arrivals, transfers, shopping, security,



DXB runway is completed in time for peak season

Dubai Airports announced in June the successful completion of the northern runway at Dubai International airport (DXB). This follows 45 days of extensive rehabilitation works from May 9 to June 22.

With more than 13.6 million travellers passing thorough DXB in the first quarter, the highly complex engineering project was completed on schedule ahead of the peak travel season. A busy summer period was expected, with the football World Cup in Qatar tipped to bring an extra influx of passengers towards the end of the year.

Planners also anticipate growth over the longer term in the next decade.

Paul Griffiths, chief executive of Dubai Airports, said: "The northern runway rehabilitation project was a key strategic move by Dubai Airports and its partners in the aviation community to invest in the infrastructure at DXB and shows our ongoing commitment to passenger care and operational excellence, while enhancing the safety, operational efficiency, and capacity of our airport well into the future."

immigration and departure. Some 550 global airports were considered.

Astrova for Qatar

Qatar Airways has signed an agreement with Panasonic Avionics for its inflight entertainment (IFE) solution, Astrova.

Panasonic said Astrova is designed to enhance passenger engagement and drive operational efficiency. Qatar's fleet of 40 Boeing 777x is the first aircraft type to feature this innovation.

Etihad's ULDs

Jettainer has been awarded a five-year contract by Etihad Cargo and will continue to provide and manage unit load devices (ULDs) for the carrier.

Thomas Schürmann, head of cargo operations and delivery at Etihad Cargo, said: "The solutions offered by Jettainer have contributed to our success in continuously improving and optimising Etihad Cargo's ULD fleet, which has enabled us to reduce costs and gain efficiencies."

Green ops

Dnata is investing US\$100 million in green operations in the next two years to further enhance environmental efficiency across its global network. The company's ongoing investment in infrastructure, equipment and process improvement will support its drive to achieve its strategic objectives and reduce its

carbon footprint by 20% by 2024, and by 50% by 2030.

SPA achievement

Saudia Private Aviation (SPA) has announced its operation has reached Stage 1 registration for the International Standard for Business Aircraft Operations (IS-BAO).

The IS-BAO, developed by the International Business Aviation Council (IBAC), is a safety standard recognised by the International Civil Aviation Organisation (ICAO), Doc 10004, Global Safety Plan. Stage 1 confirms that the safety management system (SMS) infrastructure is established and that safety management activities are appropriately targeted.

C-390 boosted

Embraer is to work with BAE Systems in a push to introduce its C-390 Millennium transport to the Middle East market. The two companies will also collaborate in developing a variant of Eve, the electrical vertical take-off and landing (eVTOL) vehicle, specifically aimed at the defence market.

In one of two memoranda of understanding (MOUs) signed at the Farnborough International airshow, the companies agreed to establish a strategic partnership to collaborate in Middle East markets for the C-390, with an initial focus on the Kingdom of Saudi Arabia.

Welcome committee: The inaugural Flyadeal flight was greeted in Amman by airline and airport representatives.
PHOTO: FLYADEAL



Flyadeal boosts Saudi-Jordan links

Queen Alia International Airport (QAIA) in Amman welcomed the first Flyadeal flight from Jeddah in June. The Saudi Arabian low-cost airline will operate daily direct routes between Amman and Jeddah and Riyadh.

Nicolas Claude, chief executive of Airport International Group, said: "We are pleased that Flyadeal is joining our airline network and are eager to begin operating daily flights between the Jordanian capital and the two Saudi cities."

"Presenting passengers with alternative routes and an elevated travel experience will help in attracting more tourists from Saudi Arabia, as well as enable us to continue leveraging the growing demand for new air travel markets."

Maen Razouqi, chief executive of Kuwait Airways, has been brought in to restructure the national carrier and put it on a profitable footing with a growth trajectory. He described his first nine months at the helm to **Mark Pilling**.

KUWAIT'S INNER VISION

Maen Razouqi is clear about how to tackle the task ahead of him to turn Kuwait's flag carrier into a sustainable and profitable business, a mission which has eluded many before him.

The priority, he told *Arabian Aerospace*, was to look inwardly rather than worrying about the competitive landscape in the Middle East.

Interviewed in late June on the sidelines of the 78th IATA Annual General Meeting in Doha, with its back-to-back meetings about partnerships with other airlines and with the airframers, Razouqi's was adamant: "We have to compete with ourselves first. We must improve."

"One of the key aspects of our transformation is how to bring that competitive DNA internally before we worry externally. We have too much to do in Kuwait Airways for me to worry about others."

□□□□□

As he chalked up nine months into his tenure at the helm of Kuwait Airways, Razouqi was relishing the job, armed with strong board support to turn the business around.

"The objective that I was given is to make money," he said. "That's what excited me about the job."

"Kuwait Airways has a strong historical foundation. It has the resources, and it has absolutely some of the best talent [among its workforce in the region]."

While possessing these strengths is a positive, deploying them is the hard part. "The company has been relatively on pause for a few years," said Razouqi. "And a big part of that is this company has always had changes in management." That instability has held the airline back.

Now the hope is that the leadership combination of Razouqi and the airline's chairman, Capt Ali Aldukhan, who was a Boeing



FLYING THE FLAG:
A Kuwait Airways A330neo.
PICTURE: AIRBUS

707 captain and served the carrier for 45 years in various senior positions, will propel Kuwait Airways forward.

"There is a perfect complement when it comes to somebody who has the historical knowhow of the industry coupled [with someone] who knows how to make the right and fastest business decisions to turn around this beautiful bluebird," said Razouqi, referring to the emblem that adorns the airline's tailfins.

"Now it's just about how do you capitalise [on these assets]. On top of that, it is also about transforming the company," said Razouqi.

He has wasted no time in bringing his extensive private-sector experience to bear at Kuwait Airways, kick-starting a transformation programme, dubbed Beyond Excellence, that will restructure the carrier from top to bottom as it pulls out of the pandemic.

"The mission is very simply translated to be the most efficient airline in the world," said Razouqi. "The question for us is how to implement that because efficiency will reduce cost and gain value."

The Beyond Excellence programme has four pillars. The first is around creating a strong environmental, social and governance (ESG) platform in the business. The second is on improving the customer experience. The third is

on improving the performance of the business including people development and succession planning, while the fourth focuses on growth.

Beyond Excellence is led by Khalid Ahmad Al-Bustan, who has been with the carrier for 30 years, in a consultancy role to Razouqi. Recruited has been Lemir Walid Abillama, who previously headed up commercial strategy at Lebanon's Middle East Airlines, as chief commercial officer to lead the sales and marketing transformation at Kuwait Airways.

□□□□□

The appointment of Razouqi in October 2021 was a key move for a business that has had more than its fair share of turmoil, including the loss of its entire fleet in 1990 when Iraq invaded Kuwait. The dynamic Razouqi, who describes himself on his LinkedIn profile as an "optimist CEO", obtained a civil engineering degree from Arizona State University in the 1990s and has spent his 24-year career in various technology companies, including a long stint at Schlumberger where he rose to become president Northern Middle East.

After a couple of years helping businesses and start-ups in logistics, entertainment, and the energy transition, he is already making his mark

at the carrier. One of his first moves has been an internal restructuring to reduce management headcount by 20% and achieve a leaner management structure.

The second move is a fleet restructure to increase productivity and reduce ownership costs. Cost control is central too: "We don't approve anything that adds cost without adding marginal growth."

The over-arching plan is to position Kuwait Airways as a regional player able to sustain itself with a passenger and cargo fleet of 45-50 aircraft. Under the 2030 strategy, it will have a fleet of Airbus A320 narrowbodies, including the A321LR; seven A330-900s and four A330-800s for mid-range widebody services; and 10 Boeing 777-300ERs for the long-haul routes. It will standardise its service classes to economy and business and is assessing the introduction of a premium economy class on its A330s.

In February, the airline restructured its orders with Airbus, switching some orders to the A330-900 from the smaller A330-800 and adding three A321LRs. A further order for five A350-900s will see it take two passenger versions of this jet, while talks are under way with Airbus to convert the remaining three orders to the freighter version, said Razouqi.

The target is to achieve breakeven three years

from the kick-off of the restructure programme, which means the first quarter of 2025. In 2020, with the pandemic bringing it to a virtual standstill, the carrier's latest full-year financial statement shows it sustained a net loss of KD264 million (US\$870 million), as reported by *Flightglobal*.

In 2020, it received a capital injection of KD212 million from 100% shareholder Kuwait Investment Authority (KIA), the biggest and the oldest sovereign fund in the world, to shore up its balance sheet. KIA picked up Kuwait Airways in 2018 when it was transferred from the Ministry of Finance.

□□□□□

"So, we are very blessed, but they are also challenging because these are investors. The KIA board is not there to inject capital without returns. On a personal level that's what excited me because when you are working under patronage of KIA, it's a different ballgame. So, you don't become a cost centre you have to be a profit centre."

No further capital is required. "We are healthy. We are generating positive cash flow," said Razouqi, adding: "If at any time we need that cash call, obviously with the right business case, we will get it."

“One of the key aspects of our transformation is how to bring that competitive DNA internally before we worry externally.”

Maen Razouqi

PICTURE: BILLYPIX

The first quarter of 2022 was a significant improvement in performance compared to 2021, despite the Omicron variant of Covid that slowed recovery, while the second quarter saw average daily ticket sales more than four times the rate of Q1.

For the full year, Razouqi expects Kuwait Airways to carry 3.5 million passengers. The hope is that the 2019 peak traffic of 5 million will be achieved in 2023.

The new terminal at Kuwait International Airport, which will be the airline's home from 2026, should see the carrier handling 7 million passengers growing to 10 million by 2030.

Since the beginning of this year, Kuwait Airways has been restoring its network and has added 17 new destinations, often with relatively low frequency. It is also signing partnerships and codeshare deals with other carriers as it seeks to expand its reach.

As the transformation programme makes an impact, the carrier could perhaps one day revisit privatisation but that is a way off.

Today, the focus is on profitable growth. "We will not grow if we don't continue to make money," said Razouqi. "I can tell you this, as long as I'm here.

"The top line is meaningless to us unless it's a healthy margin of growth."



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Disappearing act: Saudi Gulf operated a small fleet of Airbus A320s on services within Saudi Arabia and the surrounding region.
PICTURE: ALAN DRON

One of our airlines is missing...

Mystery surrounds the fate of Saudi Gulf Airlines, which has not flown for more than two years. **Alan Dron** investigates.

An airline set up to be a premium carrier in the Saudi Arabian market faces an uncertain future as it has seemingly vanished from sight.

Dammam-based Saudi Gulf Airlines now appears to exist in name only. A year ago, its then-chief executive, Ismail Karimi, admitted it faced months on the ground as it battled liquidity problems and its owners searched for new funding.

The Saudi government halted all flights in the country at the outbreak of the pandemic, in March 2020. What was initially thought would be a hiatus of four to five months was extended several times.

In June 2021, Karimi said the airline was still around, but that it had decided to ground its small fleet of Airbus A320neos due to a shortage of funds. Unlike most airlines in the region, Saudi Gulf is privately-owned and did not receive government funding.

The carrier had been hoping to find new cash from its owners, the Saudi conglomerate Al Qahtani Group, or from the Saudi government, Karimi said at the time, adding that the government had indicated financial support would be forthcoming. By June last year, no funding had arrived but at that point the chief executive said the company would take to the air again once it had recapitalised.



The halt in operations had been frustrating, he said, as Saudi Gulf had been growing well before the pandemic, opening routes to four new destinations in Pakistan; it also had plans to open routes to Egypt, Iraq, Jordan and Sudan. That process would have to be restarted.

Karimi told *Arabian Aerospace* in late June this year that he had left Saudi Gulf in January and that he was the last person to leave the company.

At the time of his departure, no funding had been forthcoming from either the Saudi Government or Al Qahtani Group, although he said that the group's

chairman, Sheikh Tariq Al Qahtani, remains keen to find an investor for the airline.

However, the former chief executive added that all four of its Airbus A320s had been repossessed by the time he left the company.

At present, attempts to access the airline's website are met with a blank screen and the words 'The service is unavailable.' *Arabian Aerospace* asked the Saudi aviation regulator, the General Authority of Civil Aviation (GACA), whether the airline was still in existence. GACA said that it classes the company as 'Currently discontinued', although it referred *Arabian Aerospace* to the airline for further details.

Attempts to contact Al Qahtani Group chairman's office by e-mail and telephone went unanswered.

There have also been allegations that some Saudi Gulf staff had been unpaid for a period before departing the company, a claim *Arabian Aerospace* has been unable to put to the parent company.



The airline was planning to update its fleet with the Neo version of the A320 and had placed an order for 10 of the type; Airbus still lists the order on its website.

Saudi Gulf began services in 2016, setting itself up as a niche, premium carrier.

It was an early customer for the then-Bombardier CSeries regional jet (now renamed the Airbus A220 after the European manufacturer took over the design from its Canadian originator) but long delays with the project saw the Dammam-based airline opting for Airbus A320s instead.

It had planned initially to take delivery of the 10 re-engined A320neos from 2023, but came to an agreement with Airbus to postpone deliveries to 2025.

If Saudi Gulf does not reappear, it arguably will give the country's remaining airlines a better chance to improve profits. One chief executive of a Saudi airline told *Arabian Aerospace* in 2019 that the country's aviation marketplace, while expanding strongly, was probably not capable of supporting the five airlines fighting for market share at that time.

When Tunisair head Khaled Chelly was recently in Paris to inaugurate a new agency at Orly Airport and to take delivery of the airline's second A320neo, he revealed the outline of Tunisair's tough restructuring plan. Vincent Chappard reports.

Tunisair changes its tune



▼ We will go to China by 2024-5 and to the US in 2026 ▲
Khaled Chelly

PICTURE: TIMES AEROSPACE

Like most airlines around the world, Tunisair has been shaken by the Covid-19 crisis. But for the North African carrier, 2021 started on an even more chaotic note with a financial dispute with TAV Airports, calls for strikes by the UGTT, the Tunisian general labour union, and the dismissal of Olfa Hamdi only seven weeks after her appointment as chief executive.

The situation facing her successor, Khaled Chelly, who took over as Tunisair chairman and chief executive in March 2021, could hardly have been worse. But a year and a half later, he remains optimistic about the airline's future, expecting a return to profitability from 2023-24.

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Chelly has deep-rooted experience in the industry. He has been chief executive of the Tunisian Civil Aviation and Airports Authority (OACA), president of the International Air Transport Association (IATA) for North Africa, and deputy director or in charge of Tunisair's strategic markets including Central Europe and Canada.

He has no illusions about the task ahead. "There's a need to restructure to restart on a sound basis," he said. "We need to make a strategic withdrawal while consolidating our business model and our financial situation."

The main pillars of Tunisair's restructuring plan are the closure of unprofitable routes, reduction of staff, enhancement of customer experience and making a firm commitment to punctuality.

Loss-making routes to Prague, Ouagadougou and Beirut are to be axed. Frequencies to several destinations, including Cairo, Dakar, Nouakchott, Rome and Vienna, are to be reduced.

In their place, Tunisair will increase services to France, its main market representing around 40% of turnover and 35% of passenger traffic. The airline will also increase its frequencies to three per week to Montreal in response to rising figures.

New international routes are also planned. "We will go to China by 2024-5 and to the US in 2026," Chelly said.

Once restructured, the national carrier will be looking for a strategic partner. Turkish Airlines and Qatar Airways, among others, have been mentioned in this context, although as yet there are no firm proposals.

Tunisair currently operates 15 aircraft against 21 prior to the pandemic. It plans to retire its Boeing 737-600s and Airbus A319s to refocus on more modern A320neos and

A330s. It took delivery of its second A320neo in March. A third was to join its fleet in August, with two others to follow by 2023.

As Chelly explained, a cut in the workforce is part of the restructuring. "We want to meet international standards, that is around 120 employees per aircraft,

with a fleet limited to around 15 planes." On current estimates, that means losing 1,000 jobs.

Chelly is tackling the financial rehabilitation of the airline by renegotiating its debt with creditors, shareholders and suppliers. "By rescheduling our debt, we avoided the worst during these two years of crisis," he said.

And Tunisair is recovering. The airline recorded a sharp increase in passenger traffic during the first quarter of 2022. The OACA is showing a similar trend: Tunisian airports handled 1.2 million passengers during this period, a rebound of 82.9% from the same period last year.

But Tunisair's umpteenth restructure plan must still be adopted by its supervising ministry and the UGTT amid concern about the grip of the powerful union on the company's internal management and its administrative burden.

Tunisair is no stranger to turbulence. Resolving its financial, human resources and governance challenges call for draconian measures.

Chelly's two predecessors, Elyes Mnakbi and Olfa Hamdi, tried to implement a rescue plan while facing strenuous pressures. But they failed.

It's more urgent than ever to save the North African gazelle. Everybody knows that. But are all parties willing to prioritise the airline's interests? Let's hope so. ▲



PICTURE: TUNISAIR

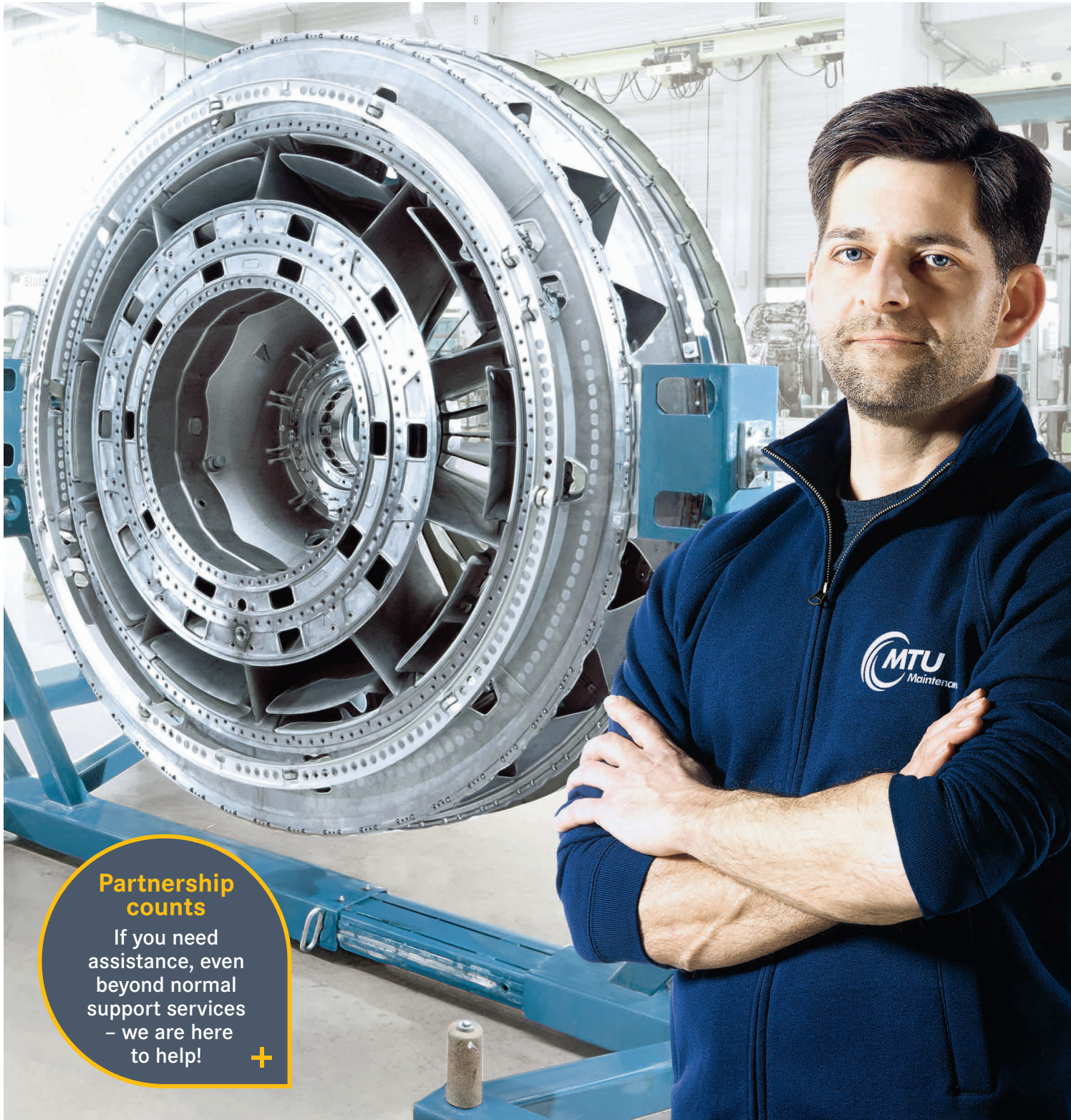


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Willie Walsh: "It is a time for optimism."
PICTURE: BILLYPIX



“Aviation is resilient. And we are rebounding.”

These were the opening words of the report by Willie Walsh, director general of the International Air Transport Association (IATA) to the association's 78th annual general meeting (AGM) on June 20.

It was a defiant message to a sector ravaged over the past two years by the Covid crisis, and hit by staggering losses after a decade of consistent profitability.

A return to the black is “on the horizon for 2023” as Walsh announced an upgrade to IATA's 2022 outlook for the air transport industry. As the recovery accelerates, the new forecast predicts a loss of US\$9.7 billion this year, an improvement on the \$11.6 billion loss it forecast in October 2021.

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“It is a time for optimism, even if there are still challenges on costs, particularly fuel, and some lingering restrictions in a few key markets,” said Walsh. One of those markets is China, where that country's zero-Covid policy means its borders remain closed to international traffic.

There were no Chinese carriers at the AGM, or Russian ones. Russian airlines were excluded because of that country's invasion of Ukraine.

In fact, the 78th AGM had been scheduled to be hosted by China Eastern Airlines in Shanghai, but with China under lockdown, Qatar Airways chief executive Akbar Al Baker volunteered Doha. Walsh acknowledged the huge effort involved in creating IATA's flagship event in Qatar in just 81 days.

The stage was set for Qatar Airways and Al Baker, who became the first airline leader to run the AGM twice, having hosted it in 2014, to bail out this crucial industry affair in memorable style.

After welcoming American pop star Christina Aguilera on the opening night, the show reached new heights on the second night with global superstar Jennifer Lopez, who stunned IATA's 1,000-plus delegates and thousands of Qatar Airways staff with a pulsating show at the Khalifa International Stadium, one of the venues for the Qatar 2022 FIFA World Cup.

Away from the superstar glitter, the AGM got back to

Walsh hits out at pandemic shambles

The airline industry met in Qatar in June to contemplate a world where Covid is receding and recovery is accelerating, but there are headwinds and increasing challenges. Mark Pilling reports.

airlines.

On sustainability – always top of IATA's agenda – the association called for urgent government action to put in place large-scale incentives to rapidly expand the use of sustainable aviation fuels (SAF) as aviation pursues its commitment to achieving net zero by 2050.

At the closing press conference, Walsh said the energy giants had to do “a much better job in relation to sustainable fuels. Progress to date is measured in words rather than actions,” he said.

IATA also called for governments to adopt a long-term aspirational goal (LTAG) to decarbonise aviation when they meet at the 41st International Civil Aviation Organisation (ICAO) assembly in September.

“As we move from commitment to action, it is critical that the industry is supported by governments with policies that are focused on the same decarbonisation goal,” said Walsh, referring to aviation's net zero emissions by 2050 target.

The industry reconvenes next June 4-6 in Istanbul for its 79th AGM, hosted by Pegasus Airlines. ▲

what it does best with an intense three days of airline bosses talking business and IATA delivering its messages via the 300 media present.

The first message focused on national responses to the pandemic, with Walsh castigating “government mismanagement”.

“There was one virus, but each government invented its own methodology to control what travel remained possible. How can anybody have confidence in such a shambolic, uncoordinated, and knee-jerk response by governments?”

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He said the longer-term priority was ensuring that governments worked much more closely with airlines in the next crisis and followed World Health Organisation (WHO) guidance.

Walsh also slammed airports for raising charges, picking out London Heathrow, Amsterdam Schiphol, and Dublin for double-digit hikes. “Out of the top 100 [airports], more than half announced increases for 2022 and 2023 – expecting their customers to make up for revenues they did not get during the pandemic.”

IATA is asking for tougher regulation of airport charges and better consultation with

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CARGO ▲

ROAD TO RECOVERY

Full order: Emirates SkyCargo has recently received the last of a batch of 12 Boeing 777Fs from the US manufacturer.

PICTURE: EMIRATES SKYCARGO



IT'S ALL GO FOR CARGO

With seaborne freight still in disarray post-pandemic and air freight stepping in to take up the slack, Middle East airlines are ramping up their freighter fleets to help get cargo to where it needs to be.

Alan Dron reports.

Passenger numbers are rapidly rebounding in the world's skies. But cargo, which never faded during the pandemic, is going from strength to strength as the echoes of coronavirus continue to reverberate.

At the time of writing, there were still lockdowns and other restrictions in Asia – notably in China, with its huge ports such as Shanghai.

This disruption has meant that containers are not where they need to be, leading to shortages of capacity and rocketing costs for sea freight.

To get around the logjams, increasing quantities of cargo are being moved by air.

However, temporary dispensations granted by aviation regulatory bodies such as the European Air and Safety Agency (EASA) to allow airlines to operate passenger aircraft in the temporary cargo role by carrying freight in the main cabin are coming to an end.

These factors, together with the ever-increasing amounts of e-commerce freight, are pushing airlines to invest in dedicated freighters.

Given their position at the nexus of three

continents, Middle East airlines – both large and small – are finding a growing revenue stream in cargo.

Emirates SkyCargo (ESC), having received its 12th and last Boeing 777F from the US manufacturer in June, has turned to a source closer to home to continue to beef up its freighter fleet.

In June, it placed an order for six freighter conversions of Boeing 777-300ERs with Israel Aerospace Industries (IAI) just months after having ordered an initial four from the same source.

There is a significant difference between the variants. The Boeing-built 777F is based on the 777-200, while the 777-300ER conversion has a fuselage 10 metres longer. That gives enough internal space for six additional main deck and four lower deck cargo container positions. The latest six conversions will enter service by 2026.

This will give ESC the capacity it requires to cope with rising freight volumes in several areas.

The first is pharmaceutical

Continued on Page 20 ▶

CONTINUED FROM PAGE 19

goods and life sciences. There have been understandable leaps in this field since the start of the pandemic in early 2020, as nations struggled, firstly, to source huge quantities of personal protective equipment (PPE) such as gloves, masks and gowns for medical personnel, followed by the rapid ramp-up a year later of vaccine supplies and their shipment around the globe.

In 2020-21, ESC moved 71,000 tonnes of such materials. In 2021-22, quantities had grown to 84,000 tonnes. It remains to be seen if these figures will start to tail off as the pandemic becomes an endemic disease in most areas of the world.

Secondly, the pandemic also saw a renewed emphasis on moving large quantities of fresh and perishable materials, as normal supply routes dried up. This was particularly important in the Gulf, which imports much of its fresh fruit and other foods.

ESC's expansion over the past two years has included a greater use of secondary hubs and a particularly strong increase in the amount of cargo passing through multi-modal hubs. In the UAE's case, this is focused on bulk quantities of material being shipped into Jebel Ali port – usually from China and the Far East – then being moved by Emirates' own fleet of trucks to Dubai International Airport for onward transport by air.

That trans-shipment process has become much slicker during the pandemic, said Dennis Lister, ESC's vice-president, commercial and product development.



"Before the pandemic it would take two to three days to get cargo from an ocean freight container on to an aircraft. We can do that now in under three hours. The trucks are pretty much waiting to take the containers off the ship."

The trucks are sealed, 'bonded' vehicles that are not subject to the curfew on Dubai's roads, helping to get them to the airport through the night.

Those cargoes are then loaded on board Emirates' 777s and forwarded to destinations such as Europe and the US. Dubai has also removed some of the bureaucracy around the import and export of cargo through cooperation between the port and regulatory authorities, customs and Emirates.

Emirates SkyCargo has used Dubai World Central (DWC) as the main hub for its dedicated freighters, but the pandemic and the slump in air traffic saw that airport being mothballed. As the global emergency eased – combined with the six-week maintenance closure of Dubai International Airport's North Runway in late spring – Emirates took the opportunity to return to DWC and is moving all its freighters back there.

Meanwhile, Qatar Airways Cargo is going even further, launching Boeing's new 777-8F Freighter with a massive order for 34 of the type (plus 16 options).



The 777-8F will have a capacity close to that of the older-generation 747-400F but will use around 25% less fuel and will effectively replace the four-engined type. Deliveries of the new aircraft are scheduled to start in 2027.

The importance of the 777-8F to the US manufacturer can be seen from the fact that the cargo variant will now precede the passenger 777-8 in Boeing's development programme.

The 777-8F will have space for up to 31 freight pallets on the main deck, plus space for a further 15 pallets and additional bulk cargo in the lower holds. The dedicated freighter will have a range of more than 4,400 nm and a maximum revenue payload of 112.3 tonnes.

Qatar Airways Cargo already operates 26 of the current-model 777F and is ordering two more as part of the sale. It is believed that 20 of the 34 firm orders for the new 777-8Fs will be converted from the 60 777X-family orders previously announced as being held by the airline.



Smaller in size, but still significant, is Etihad Airways' letter of intent for seven of Airbus's new A350F cargo variant.

Also joining the drive for more cargo capacity is EgyptAir, which in May ordered its first converted 737-800SF freighter.

US company Aeronautical Engineers Inc (AEI) will handle the conversion and the aircraft will be the first dedicated narrowbody freighter in the airline's fleet. Its existing freighters are three Airbus A330-200Fs.

EgyptAir aims to increase its freight capacity to give it greater access to new export markets,

notably for fresh foods. Its cargo activities increased during the pandemic, not only in the transport of medical supplies but also of agricultural exports.

Work on the 737-800SF will start in October at AEI's conversion centre in Miami, Florida. The US company says that it is the only conversion company to hold extended range twin operations (ETOPS) 180 approval for the 737-800 freighter conversion, allowing it to fly more direct overwater routes.

AEI says the 737-800SF will offer a main deck payload of up to 23.9 tons. The conversion incorporates an 2.18m x 3.48m main cargo door.

Other regional players include express freight specialist DHL, which over the past year has added seven Boeing 767-300F freighters to its fleet; some of these replaced older aircraft but, together with three 767-200SFs, the trend is one of expansion.

Fast-growing freight volumes have also seen Bahrain-based cargo specialist Texel Air step up the speed of its expansion. In May, it signed an agreement for two more Boeing 737-800 Boeing Converted Freighters (BCFs).

The carrier had previously ordered a pair of BCFs, so the latest order will double its inventory of the type. Additionally, Texel Air operates two -700 FlexCombis converted in the US by Pemco and a single -300F. The -800BCFs offer 40% more main deck and 60% greater belly capacity compared to the -700s, offering around six tonnes extra payload.

Another Bahraini carrier, MENA Cargo Airlines, is planning to quickly take on "three to four" aircraft – the first is a 737-300F – and has ambitions to build up to 15 to 20 in the long term. ▲

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Clockwise from top left:
Fleet planning: Emirates expects to double its 777 freighter fleet with conversions.
PICTURE: WIKICOMMONS
Big programme: the market for 737 P2F conversions has more than doubled in the last year.
PICTURE: GE
Jeddah centre: SAEI plans to build its own 777 conversion line at the new Jeddah MRO village.
PICTURE: SKYTEAM
Seven up: Saudia has seven firm orders and five options on 777 conversions from Mammoth Freighters.
PICTURE: SAUDIA CARGO

Reaching to the converted

An unexpected surge in the availability of feedstock has resulted in a flurry of activity in passenger-to-freighter (P2F) conversion.
Will demand last?
Chuck Grieve
reports.

Passenger-to-freighter (P2F) conversions are currently high on the agenda across the spectrum of those who own, operate and maintain the global airfreighter fleet.

Driven by a shift in consumers shopping to online models, plus a fortuitous convergence of age and availability in conversion feedstock, the P2F business is on a roll.

In the Middle East and Africa, at least four major MRO players, three of them airlines, are ramping up to handle conversions, many of which will bring new life and value to their own passenger aircraft.

"The P2F market solves both the supply and demand issues in the near term," note analysts from the Air Insight Group. "Under-utilised airliners become high-demand freighters." The question, they suggest, is "how fast the conversion houses can deliver what is now a hot commodity, and how long the trend will continue."

If anything, the trend is building. Cirium, the aviation data specialist, reported in March that more than 500 orders for P2F conversions had been announced in the past two years. Significantly, the market appeared to be "pivoting around a generational shift from the older types like the 737 Classic, 757 and 767 to newer types like the 737NG, A321 and A330," said analyst Scott Zhao.

Jonathan McDonald, manager, Classic and Cargo Aircraft at IBA, said the upsurge in conversions of Boeing 737-800 aircraft was "extraordinary", more than doubling to more than 100 within 12 months April to April. With the fight on for a share of "what's becoming a very big programme," there is "always a risk" of oversupply, but it was "not happening yet", he said.

Leading independent MRO Joramco has positioned itself for entry into the 737 P2F market through its 2021

agreement with the French aviation services company UUDS to carry out conversion at its Amman base under UUDS's supplemental type certificate (STC). At the time, Joramco chief executive Fraser Currie said it was an "exciting" development that "acknowledges Joramco's large scope of MRO certifications and world-class technical abilities."

Conversion centres are also ramping up to handle growing numbers of A330ceo and A321 models slated for conversion. As for the Boeing 777, IBA said it remains "early days" for the P2F conversion programme. That has not inhibited Emirates, Etihad Airways and Saudia from pursuing substantial programmes, largely it appears with their own Boeing 777 fleets.

Dubai-based Emirates recently added six more 777-300ER aircraft to the four it had already placed with Israel Aerospace Industries (IAI) for conversion. The airline said in a statement it expects to have a fleet of 20 freighters by the end of 2026, comprising 10 new 777F units and the 10 conversions.

Its first four B777-300ERSF conversions are scheduled to be delivered in 2023 and 2024.



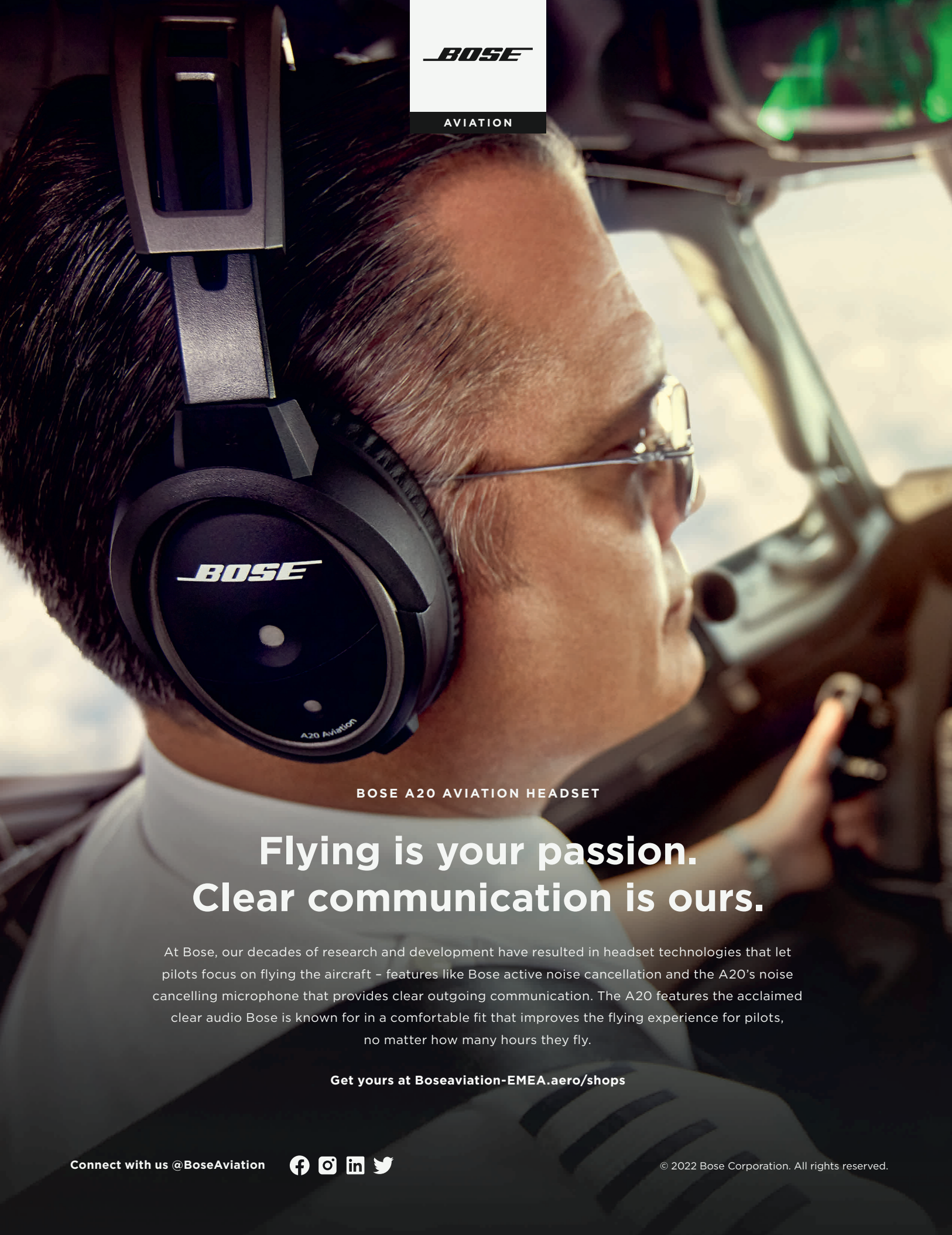
In Abu Dhabi, the partnership established between IAI and Etihad Airways Engineering, under the Abraham Accords, to set up two 777-300ER conversion lines at the airline's base is moving toward completion of its set-up phase.

Saudia, meanwhile, has ordered seven 777 conversions from Mammoth Freighters of the US, with options for five more. The airline has not said if it will use aircraft from its own 39-unit fleet of 777-300ERs as feedstock. Planespotters website gives the fleet's average age as 7.2 years.

Alongside the orders, Saudia Aerospace Engineering Industries (SAEI) announced plans to build a multi-bay conversion centre as part of its maintenance village project at Jeddah. The facility will enable SAEI to undertake in-country conversions, under Mammoth's STC, and to manufacture structural components needed in conversions.

In Addis Ababa, Ethiopian Airlines' MRO division, working with IAI, is progressing with its first 767-300BDSF conversion of one of its own 767-300ER passenger aircraft. The 2004-vintage example will rejoin the fleet in its new freighter configuration.

Ethiopian has also committed to Boeing's new production freighter by signing a memorandum of understanding for five 777-8Fs and expects to add its first 737-800BCF to its fleet of three 737-800SFs. ▲



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Cargo handlers in the UAE are accelerating the digitalisation of cargo in order to improve speed and efficiency in airfreight movements.

Jill Stockbridge reports.

ROBO OPS FREIGHT MOVES INTO THE DIGITAL AGE

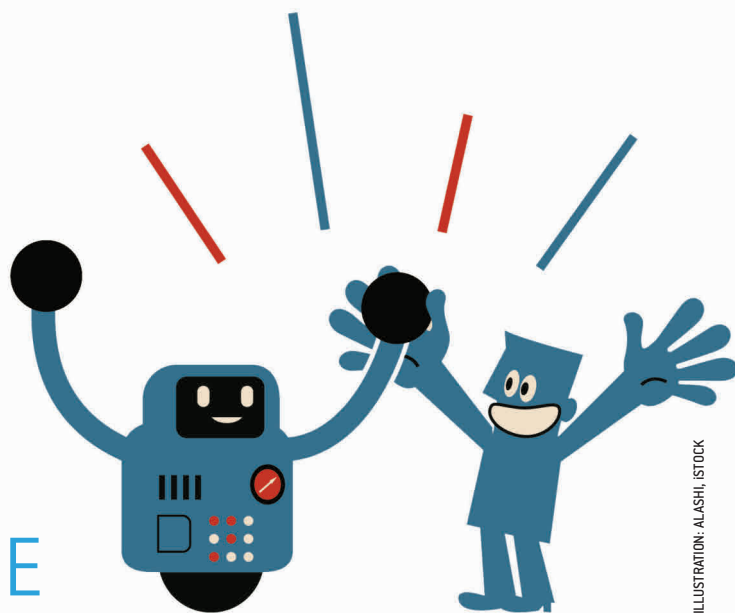


ILLUSTRATION: ALASHI, ISTOCK

The wide-ranging benefits come at a time when industry projections suggest world air cargo traffic will more than double in the next two decades to US\$578 billion revenue tonne-kilometres (RTK).

In Abu Dhabi, Maqta Gateway has introduced Digital Airfreight Solutions to the AD Ports Group's Advanced Trade and Logistics Platform (ATLP). The tool, developed in collaboration with Abu Dhabi Airports, Etihad Airport Services and Etihad Cargo, streamlines the movement of air cargo shipments to and from all five airports in Abu Dhabi.

Martin Drew, senior vice-president Sales and Cargo, Etihad Aviation Group, said the emirate is becoming digitally ready to secure a "sizeable and justifiable" market share.

Now users can access the services they need and pay for them through a single-window interface, which has reduced waiting times by 80%, improved delivery time via customs integration, enhanced track-and-trace visibility, introduced digital payment channels and improved

warehouse utilisation through an automated appointment system.

With the new efficiencies, the average process now takes six minutes instead of one hour.

Since Etihad Cargo launched its own revamped online booking portal late last year as part of the ongoing digitalisation strategy, there's been a surge in new users and bookings, with 45% of all bookings being made via the portal in April 2022.

The portal's streamlined booking process requires minimal data entry, enabling users to create and confirm bookings within 45 seconds.

Drew said: "Etihad Cargo has added several new features that have made creating and confirming bookings easier and faster than ever before. The enhanced look-to-book feature, a dynamic newsfeed and personalised dashboards have created a more intuitive process, which has resulted in higher quality booking data and a reduced need for booking modifications."

DUBAI'S DIGITALISATION SWITCHES ON TO CLOUD-BASED PLATFORM

In Dubai, Dnata Cargo is designing a digital future. Guillaume Crozier, senior vice-president UAE Cargo, said: "We continue to invest in advanced digital solutions and automation to maximise efficiency and deliver world-class services for our customers. We look forward to digitising our operation in the UAE by the beginning of 2023 by launching our state-of-the-art OneCargo Terminal Operator Solution developed by our partner, IBS."

OneCargo automates key business and operational functions, including safety and quality monitoring, reporting and unit load device (ULD) management, with an integrated, cloud-based platform.

Artificial intelligence (AI) tools and analytics provide enhanced visibility on sales and business performance, allowing customers to match real-time

demand with available capacity for maximum profitability. In addition, the solution eliminates redundancies and manual check sheets.

Also in the pipeline is a next-generation e-commerce platform which will take Calogi, the existing community platform, to a new level. Crozier said: "The new e-commerce platform will allow stakeholders to conduct business with their customers and interact with authorities on one platform, sharing information and settling payments using their Calogi credit account."

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"Customers will be able to integrate the platform into existing workflows and take advantage of all innovative functions while using their own system. The platform will also help customers simplify existing processes, without

investing in multiple systems. It will enhance sustainability by promoting paperless and cashless trade.

Dnata also plans to launch autonomous drones in the warehouses at Dubai International and Dubai World Central airports to digitise acceptance and warehouse inventory processes with 99.8% accuracy. Innovative software enables the drones to map the environment, collect inventory data, count cases, measure temperature, and read barcodes using only their cameras, without the need for any additional active infrastructure. The collected data can be viewed directly on a paired tablet or via the web.

The drones can operate at temperatures as low as -10C, enabling Dnata to take advantage of the technology in its state-of-the-art cool chain facilities."



PICTURE: DNATA

Guillaume Crozier: "The platform will also help customers simplify existing processes, without investing in multiple systems."

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QATAR LIGHTS UP THE NH SKY

Qatar has provided a glimmer of light for NH Industries in what would otherwise be dark times. Its air force and navy have taken delivery of the first examples of both variants of the NH90 multi-role military helicopter that it ordered.

While the Gulf state takes delivery of the first of 28 NH90s on order, elsewhere NH Industries has had a disappointing year with first Australia and then Norway dropping its aircraft from their fleets.

The NH90 is the product of Europe's largest military helicopter programme run by the NHI consortium, a joint venture of Airbus Helicopters (62.5%), Leonardo (32%) and GKN Fokker (5.5%). Nearly 470 units have been delivered to 14 nations, including Oman and Qatar.

The aircraft is offered in two main variants: the NH90 tactical transport helicopter (TTH) is a land-based support helicopter, while the NH90 Nato frigate helicopter (NFH) is a shipboard naval helicopter optimised for autonomous anti-submarine warfare (ASW) and anti-surface unit warfare (ASuW) missions.

Qatar signed a contract in March 2018 for 16 TTH versions and 12 NFH variants, with an option to acquire six additional aircraft of each type. The contract also included associated infrastructure and a comprehensive support, maintenance and training services package.

Leonardo is prime contractor for the overall Qatar NH90 programme and is responsible for the final assembly and delivery of the 12 NH90 NFHs from its

Venice Tessera facility, while Airbus Helicopters is responsible for the final assembly and delivery of Qatar's 16 NH90 TTHs from its Marignane facility.

The Qatar Emiri air force received its first NH90 TTH at Marignane in December 2021, and a formal handover ceremony for the first two NFH examples was held at Venice Tessera on March 31. Interestingly, the first Qatari NFH had already made its public premiere on December 18, 2021 during Qatar's National Day celebrations.

The NFH units will operate from the Qatar Emiri navy's four Al Zubarah-class air defence corvettes and the future air defence LPD. They will be armed with the MBDA Marte ER anti-ship missile and MU90 lightweight torpedoes.

ABOVE: Qatar deliveries underline the Gulf country's confidence in the NH90 programme.
PICTURE: LEONARDO

SAMI'S AEROSPACE JOINT VENTURE A BOOST TO SAUDI VISION 2030

French precision engineering group Figeac Aero is extending its footprint in the Middle East with a new joint venture in Saudi Arabia (KSA).

SAMI Figeac Aero is a joint venture with Saudi Arabian Military Industries (SAMI) and Saudi Arabian Industrial Investments (Dussur).

The initiative aims to develop Saudi Arabia's aerospace manufacturing capabilities, cutting-edge technology and skills, and boost aerospace and military industries in line with Saudi Vision 2030.

"The agreement marks a significant step in our drive to strengthen Saudi Arabia's aerospace ecosystem through global strategic partnerships," said SAMI chief executive Walid Abukhaled.

Jean-Claude Maillard, Figeac Aero chairman and chief executive, said the partnership is not only an opportunity to establish his company's commercial footprint in the Middle East. It will also enable the group to access KSA's military and commercial industrial offsets markets.

"We will have a crucial role to play in laying the foundations of Saudi Arabia's future aerospace industry," he said.

KSA wants to accelerate the localisation of advanced technologies to support an indigenous military industry.

As Raed Al-Rayes, chief executive of Dussur, pointed out, the JV will "connect the Kingdom to the global

aerospace original equipment manufacturers' (OEMs') supply chain, unlock development of the aerospace industry and serve as a catalyst for future growth."

Phase 1, with an investment of about \$50 million and a target completion date of 2024, involves ramping up the facility in Jeddah. Investment is expected to come mostly from local financing institutions.

Under a \$40 million agreement, Figeac Aero will provide a full range of industrial and technical assistance and transfer of relevant know-how.

The initial focus will be on aerospace parts machined from light alloy (aluminium) and hard metal (titanium).

ANURADHA DEENAPANRAY

NEW MUSCLE: C-130Js are supplanting older Hercules workhorses across the Middle East.
PICTURE: RAF MOD



HERCULES GOES FROM STRENGTH TO STRENGTH

Lockheed's second generation C-130J Super Hercules is gaining momentum in the Middle East and North Africa (MENA) region, extending its footprint into North Africa from an initial concentration of users in the Gulf.

The aircraft is already in service in Bahrain (which has two), Iraq (six), Israel (seven, with two more on order), Kuwait (three), Oman (two), Saudi Arabia (two, with 23 on order) and Qatar (four). Tunisia has two aircraft, and Algeria received the first two of four on order in January and April this year.

Most recently, the US has approved the sale, announced in January, of 12 C-130J-30 aircraft to Egypt for US\$2.2

billion. The aircraft will be powered by four Rolls-Royce AE 2100D turboprop engines, and the package of spares and support will include a dozen spare engines.

Egypt already operates a mix of about 21 legacy C-130s of the 29 aircraft acquired between 1978 and 2004, including three stretched C-130H-30s and two VIP-configured VC-130Hs. Two aircraft are equipped to carry roll on/roll off electronic intelligence (ELINT) systems integrated by the Sierra Nevada Corporation in 2017.

The Egyptian C-130 fleet is operated by No.4 and No.16 Squadrons of the 516th Air Wing at Cairo East. ▲

MODIFIED GRAND CARAVAN EX EARMARKED FOR TUNISIAN AIR FORCE

The first two of four Cessna Grand Caravan EX aircraft modified for military service, due to be delivered to the Tunisian air force in November, are part of a US Department of Defense (DoD) effort to enhance partner nation interoperability.

ATI Engineering Services had been awarded an initial US\$10 million contract in September 2021 by the DoD to integrate an intelligence, surveillance, and reconnaissance (IRS) system on the two examples, followed by a second contract "a couple of months later" executing options for a third and a fourth aircraft.

The Grand Caravan EX turboprop is well-suited to African requirements, providing single-engine economy and simplicity while carrying high payloads from short, unimproved runways.

Modifications carried out by ATI include an operator console, an electro-optical/infra-red sensor turret, tactical radios, a video data link, and night vision-compatible lighting.

The DoD objective in equipping allied air arms with multiple iterations of the Grand Caravan EX is to streamline logistics support and enhance partner nation interoperability. The US government has provided grant aid funding for 16 Grand Caravan EX aircraft procured through the Foreign Military Sales (FMS) process throughout Africa since 2014.

Pennsylvania-based ATI specializes in night vision imaging system (NVIS) aircraft lighting, electrical upgrades and avionics modifications and has modified a variety of different aircraft types for special missions. ▲



MILITARY MODS: The Grand Caravan EX turboprop is well-suited to African requirements.
PICTURE: TEXTRON

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Photographic record made during the unpaved runway test campaign.



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MISSION POSSIBLE: DATA AUTONOMY POWERS RSAF

The Royal Saudi Air Force (RSAF) has revolutionized its operational capabilities with the ability to create and iterate its own mission data, placing it in the ranks of the world's leading air powers.

Arabian Aerospace understands Saudi Arabia worked with a UK Partnered Electronic Warfare Operational Support (EWOS) team to establish a sovereign mission data capability.

Mission data is considered a combat aircraft's bespoke digital 'lifeblood', 'fine-tuning' every sensor to meet the actual situation in the battlespace, and optimising the aircraft's Defensive Aids Sub System (DASS) to cope with the most pressing threats. This allows the platform, and its sensors and systems, to achieve their maximum operating potential.

The Eurofighter Typhoon was one of the first aircraft to be optimised to exploit mission data, and the ability of Typhoon operators to iterate their own mission data loads is a key differentiator.

Sovereign control over mission data – data sovereignty – allows the operator of an aircraft to use national intelligence resources to shape its own mission dataset rapidly to deal with a specific threat picture.

Since 2014, the UK Government has worked with Eurofighter partner company Leonardo to support the mission data capabilities of international Typhoon operators.

Led by Leonardo, industry set up a UK Partnered EWOS team within the RAF's Air Warfare Centre (AWC), based at RAF Waddington. This team was tasked with creating, developing and maintaining UK-sourced electronic warfare (EW) data, which could then be released to export customers on a government-to-government basis to form the basis of a sovereign mission data capability.

▲ JON LAKE



USAF B-52 PATROLS SEND WARNING SIGNAL TO IRAN

The US Air Force is augmenting its normal bomber deployments in the Middle East with frequent 'presence patrols' by long-range Boeing B-52H Stratofortress heavy bombers.

While B-1B Lancers remain deployed at Qatar's Al Udeid air base, B-52s have made a number of 'flying visits' to the region this year, often in response to signals (or specific intelligence) indicating that Iran may be planning attacks against US and/or allied targets in Iraq or elsewhere in the region.

On Valentine's day, a 5th Bomb Wing B-52H flew from RAF Fairford, where it was temporarily deployed, and conducted manoeuvres with a number of Gulf Cooperation Council (GCC) air

forces before landing after a flight of about 23.5 hours.

The Fairford deployment mounted a similar mission on March 29 2022.

On 9 June 2022, two B-52Hs, two KC-10 Extenders, and three KC-135 Stratotankers flew a similar presence patrol mission from their base at Minot AFB, North Dakota.

Lt Gen Greg Guillot, Ninth Air Force (AFCENT) commander, said such presence patrols "show the United States' continued commitment and interoperability with our partners in the region [and] demonstrate our combined ability to provide global reach and joint security to the region."

▲

JV PUSHES THE LINES OF MRO EXPERTISE IN MOROCCO

A joint venture, Maintenance Aero Maroc (MAM), has been formed by a strategic partnership between Morocco, Lockheed Martin and the Orizio Group, formerly Blueberry.

The industrial partnership is designed to support the requirements of the Royal Moroccan Air Force while fostering Orizio's international development.

MAM will build a maintenance, repair, overhaul and upgrade (MRO&U) centre for military aircraft and helicopters at Benslimane airport, bringing high-tech jobs to the country and enhancing technical capabilities in Morocco.

It is the first achievement under a new law enabling Morocco to develop an indigenous



military and defence industry.

The partnership is another milestone for the Belgian group, which changed its name from Blueberry this year. It has been operating in Morocco since 2012 through its subsidiary Sabca Morocco.

PARTNERSHIP:
Celebrating the new
joint venture in
Morocco.
PICTURE: MAM

Stéphane Burton, Orizio chief executive, said it will leverage the group's combined know-how and expertise on the Lockheed Martin C-130 and F-16 and world-class service to extend its MRO network in the region.

Danya Trent, Lockheed Martin vice-president, F-16 Programme, said: "The significant cooperation is the result of several years of evaluation and discussion that will ensure the Kingdom of Morocco receives the best possible industrial facility, equipment, training and certification."

Last year, Pilatus and Orizio Group company Sabca signed a contract for the assembly of PC-12 fuselage and wing structures at its new facility in Casablanca. ▲

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WORKHORSE: Israel is keen to receive new Boeing KC-46 tankers.
PICTURE: BOEING

FALSE START FOR PEGASUS

Israel is growing increasingly impatient to receive Boeing KC-46A Pegasus tanker aircraft to replace its fleet of about seven ageing Boeing 707 tankers.

The first two KC-46s, a military derivative of the Model 767 airliner, were to have been delivered "immediately", according to some local sources, with a further two aircraft to follow by 2023.

With delays to the core USAF KC-46 programme, two aircraft are now expected by 2024, though in October 2021, Israel requested that the US increase deliveries to four aircraft by 2024. There were even requests that two

aircraft could be taken from a USAF production lot, that Boeing is in the process of building under contract for the US Air Force.

This Israeli request was reportedly declined during a wide-ranging meeting between US Secretary of State Antony Blinken and Israeli Defense Minister Benny Gantz on December 9 2021, though Israel has continued to push for delivery of the first aircraft during 2022 or 2023.

The Boeing KC-46 Pegasus II has been subject to delays and significant technical problems, which have delayed its entry

into service in the USA and constrained its operational capabilities. In particular, Boeing is working on a new remote viewing system (RVS) used to guide the refuelling boom into the receiver aircraft's receptacle.

Ironically, Israel Aerospace Industries' Bedek division has already developed a multi-mission tanker transport conversion for the B767. The company has delivered a probe-and-drogue conversion of a pre-owned B767-200ER to the Colombian air force, and has flown a boom-equipped demonstrator based on a 767-300ER. ▲

TURKEY IS FIRST OPERATOR TO COMPLETE DELIVERIES OF A400M

The Turkish air force (THK) has received its 10th and final Airbus A400M, completing deliveries of the type to the 12th Air Transport Main Base Command in Erkiyet, Kayseri in Central Anatolia.

The unit, MSN118, is the first Batch 7 aircraft, the final production standard, and the first of nine aircraft expected to be delivered during 2022. It was flown to Turkey by a THK crew after completion of acceptance testing at the Airbus facilities in Seville, Spain.

The aircraft was a replacement for MSN23, written off in a fatal pre-delivery test flight in May 2015. Its crew was honoured at the formal acceptance of MSN118.

The first THK A400M (MSN9) was delivered to Turkey on April 4, 2014, and deliveries were originally scheduled for completion in 2018.

The A400M project was managed by the European Organisation for Joint Armament Cooperation (OCCAR), and is expected to see the delivery of 170 aircraft to seven nations. The A400M customers are France (50),



Left: Turkish and OCCAR teams during the A400M handover.
Above: General Koca (TURAF), Suleyman Mert (SSB), Gursu Karateke (OCCAR), Maria Angeles Marti (Airbus).
PICTURES: JON LAKE

Germany (53), Spain (27), Turkey (10) and the UK (22) with eight for Belgium and Luxembourg.

Turkish Aerospace (TUSAS) forms a vital element in the industrial consortium building the A400M, together with Airbus Defence and Space, BAE Systems, Belgium's Flabel and a host of other companies.

TUSAS is responsible for the front-mid

fuselage, tail cone, and rear fuselage upper panel, fins/speed brakes, paratroop and emergency exit doors, as well as wiring, lighting, and water/waste systems.

Turkey's A400Ms have already been busy, operating a controversial air bridge between Turkey and Libya's Government of National Unity, and airlifting materiel to Ukraine in the run-up to Russia's invasion. ▲



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Business aviation is getting bigger, and so are the flagship models of the future. Jill Stockbridge speaks to specialist Arcosjet about this growing market and why the firm relocated to Dubai.

Challenges of the long good buy

Global aircraft brokerage firm Arcosjet has ceased operations in Russia, and strengthened its team in Dubai, an area it sees as having great prospects for growth.

The company "consciously searched" for a location that could provide it the "most advantageous strategic positions on a global scale", said Mikhail Alenkin, Arcosjet chief executive and founder. "We chose Dubai as a growing international financial and innovation centre.

"We were convinced that we made the right choice when we saw the major transformation that took place at the height of the pandemic. Dubai always was the key to the Middle East market, but then it became a full-fledged hub connecting the Middle East and Africa to Asia."

With the UAE's installed fleet having overtaken Saudi Arabia's as the largest in the Middle East, the migration of ultra high net worth individuals (UHNWIs) to the region and a strong global recovery in oil demand, it would seem the right decision, but it is not without challenges.

"The Middle East is a very interesting market with its own mentality and traditions," said Alenkin. Building relationships required a special approach.



More than half of the estimated 500 business jets operating in the region are long-range and large aircraft, which further increases the importance of this segment in terms of value and turnover.

"This is a feature of the region," said Alenkin. "It's not just about the mentality and personal preferences of the owners: to reach any of the nearest world economic and financial centres you have to spend 5-8 hours inflight. This, as well as the desire to travel in large groups and with a significant amount of luggage, inevitably makes the non-stop flight range, cabin dimensions and luggage compartment volume the key factors when choosing a business jet."

Arcosjet specialises in long-range business jet deals, and has accumulated expertise in that market. Alenkin believes the difference is in the details.

"Our task is not to surprise and impress clients, but to meet their expectations and provide them with exactly what they need. We help the client buy or sell a jet profitably, efficiently, confidentially and conveniently. We use knowledge of the market and constantly monitor and research it.



▼ It's very difficult to find good aircraft at a reasonable price. A significant number of aircraft are traded off-market and pricing goes beyond logic. ▲
MIKHAIL ALENKIN

PICTURE: ARCOSJET

"We also focus on the development of the latest digital technologies and services. We are confident that process automation and Blockchain can make work easier, more transparent and more comfortable for everyone in the market."

The pre-owned business jet segment is currently a seller's market, with average sale prices breaking records and the number of business jets for sale falling to around 4% of the active global fleet. As a result, the price of some later models has increased by an average of 20-30%.

Alenkin said: "In such market conditions, it's very difficult to find good aircraft at a reasonable price. A significant number of aircraft are traded off-market and pricing goes beyond logic. But this situation is temporary."

The company expects to see Middle East market demand in large and long-range business jets to continue growing, driven by new flagship models that manufacturers are preparing to bring to the market, including the recently announced Bombardier Global 8000, the Gulfstream G700 and G800, and the Dassault Falcon 10X.

"We are seeing a demand for new jet showcase formats, to help buyers better understand a particular aircraft and compare it with alternatives," said Alenkin.

"In the longer term, we see the sustainable development and the widespread introduction of green technologies in the industry. New technologies are being created, such as eVTOL, biofuel and others. I believe that as a result of development, the entire industry can be significantly transformed as new aircraft, services and formats emerge, and business processes and approaches change." ▲

DASSAULT EXPANDS MRO OPTIONS IN MIDDLE EAST

With its new ExecuJet service centre in Dubai near completion, Dassault Aviation adds another link in its worldwide MRO network for business aviation. Anuradha Deenapanray reports.



It's no secret that Dassault Aviation is keen to expand its maintenance, repair and overhaul (MRO) capacity – chief executive Eric Trappier said as much when he revealed the group's plans for service centres in Dubai and Kuala Lumpur.

Trappier said the facilities, part of the network of wholly owned subsidiary ExecuJet MRO Services, would allow the group to maintain a high level of support reactivity and spare parts availability.

The new Dubai base, which will also become ExecuJet's new regional headquarters, is expected to open at Al Maktoum International Airport in the last quarter of 2022. It will be capable of C-checks for new generation jets, allowing Dassault to respond quicker and more efficiently to the needs of clients in the region.

The 15,000 m² facility is being built to accommodate 18-24 business jets simultaneously. It has been designed to handle the largest business jets of all types, including the

Falcon 6X – entry into service end-2022 – and the Falcon 10X, which has a projected service entry date of 2025.

“Dubai is a hub for so much global traffic that it merited a large investment in MRO capacity and expertise,” said Nick Weber, regional vice-president Middle East at ExecuJet MRO Services.



ExecuJet has been operating in Dubai for two decades and is certified to handle a range of types. It is a factory service centre for all Dassault Falcon aircraft and provides line and base maintenance for Bombardier, Embraer Executive Jets and most Hawker business jet models.

Dassault's expansion strategy mirrors the boom in business aviation. Demand in the UAE grew 73% in 2021 compared with 2019. At last November's Dubai Airshow, the sector accounted for more than 30% of aircraft on display. ▲

SERVICE ACE: Dassault support expands in Dubai. PICTURE DASSAULT.

EGYPT'S PRESIDENTIAL JET SET TO JOIN THE VIP 747-8 CLUB

The Egyptian Government has acquired a Boeing 747-8 for VIP use. It will replace Egypt's current presidential jet, an Airbus A340-200 (SU-GGG).

The unit, which is being converted by Lufthansa Technik (LHT) in Hamburg, was the first 747-8 passenger aircraft and made its first flight on April 26, 2011.

Designated N6067, it was used for flight test duties by Boeing and later painted in Lufthansa livery for its expected delivery to Lufthansa as D-ABYE.

Those plans were cancelled, and the aircraft went into storage at Marana in 2015, re-registered as N828BA, subsequently moving to San

Antonio/Lackland, and finally to Victorville.

Though the aircraft was 10 years old by the time it was sold to Egypt, it was, to all intents and purposes, a new aircraft, needing only minor work before it could enter service.

The aircraft was registered as SU-EGY with the Egyptian air force on October 13, 2021, moved to Boeing's facilities at Paine Field, Everett, and prepared for the next stage of its journey. This began on November 6, 2021, when the aircraft was ferried to Hamburg Helmut Schmidt Airport, LHT's home.

The 747-8 has become a popular VIP aircraft, especially in the Middle East. The 747-8i prototype

(LN 1434) is today in service with Kuwait as a VIP aircraft, while the Qatar Emiri Flight operates three 747-8s.

Single examples are used by the Royal Flight of Oman and the Government of Turkey. Another was briefly operated by the UAE Presidential Flight before being handed on to Morocco.

Elsewhere, the Brunei Government operates one 747-8, and two more – originally built for the bankrupt Russian airline, Transaero – are undergoing conversion to VC-25B standards to become the US Government's next VVIP 'Air Force One' aircraft. ▲

JON LAKE

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SMART ATTACK

French aviation infrastructure specialist Egis sees many new airport development opportunities in a vibrant and growing Gulf market. **Chloë Greenbank** reports.

The Dubai Airport Show remains the "most important show in the region" for Egis, the aviation consultancy and airport operator, with this year's show marking its 10th appearance. The French company's chief commercial officer, Jacques Khoriaty, told *Arabian Aerospace* that with Egis targeting the airport and air traffic management (ATM) sectors in the Middle East, the airport show delivers on both fronts. In terms of passenger traffic, he noted, the Middle East hadn't been as badly impacted as Europe and other regions by the slowdown in aviation caused by the global pandemic. Highlighting destinations that were recovering well, he said Dubai International Airport had recorded its busiest quarter since 2020 in the first three months of this year with 13.6 million passengers.

"Saudi Arabia is forecasting ambitious growth in its aviation sector over the next five to six years," said Khoriaty. "This growth will generate new opportunities for us, but it will also create the need to find innovative ways to squeeze more capacity into existing infrastructure, as building new facilities is not always the optimum solution."

Egis is currently working with Ras Al Khaimah International Airport, having been awarded a contract during the Dubai Airshow in November 2021. Khoriaty said that as part of the agreement to expand the airport's existing terminal, Egis was

working with the air transport hub in the northern UAE emirate "to establish the best possible solution to give them more capacity in the near term, but we're also exploring a long-term solution to accommodate anticipated growth." Although it's too early to confirm details, Khoriaty suggested the latter could entail either a major revamp of the existing terminal or a completely new facility.

The company also has a strong presence in the Kingdom of Saudi Arabia (KSA), where it is currently supporting a full airspace restructuring programme as part of the Saudi Future Airspace Concept (SFAC). It is also working on the development of Amaala Airport, a greenfield air transport hub on the Kingdom's north-western Red Sea coast, which is due to be completed in 2023.

"Having supported the airport since the beginning with its feasibility, planning and design studies, we're now nearing completion on Phase 1, which has primarily involved construction of the runway," said Khoriaty.

□□□□□

With KSA set to relaunch a privatisation plan for ownership of its airports as part of its economic diversification, Egis also has its eye on some of these airport contracts. In addition, Egis is keen to engage with planning for the new airport at Neom, the new "smart city" being developed in the Kingdom. The airport is expected to be designed to handle up to 25 million passenger a year.

To support continued growth in the cargo sector, Khoriaty referenced Egis's collaboration with Hamad International Airport in Doha on its new cargo terminal. He added: "We are also working with Bahrain Airports Company on the design and construction of a new cargo village, which will be used by the likes of Cargo Express, DHL and FedEx."

In terms of innovations, Khoriaty is keeping a close eye on the wider adoption of biometrics. "We're already seeing the digital transformation of the sector, but ultimately I believe we are heading for a completely 'touchless' airport experience," he said. "It's something we need to embrace and plan for."

To help airports in the Middle East and across the globe adapt more efficiently to this rapidly evolving environment, Egis plans to roll out its digital twin model which it has been developing for airports.

The airport community was now more ready than ever to embrace innovative technologies, Khoriaty said. "As an industry, aviation has been slow at adopting new technologies because of the different regulations and security threats. However, one thing the pandemic has resulted in is the willingness to innovate and move faster."



JACQUES KHORIATY:
"Ultimately I believe we are heading for a completely 'touchless' airport experience."
PICTURE: EGIS

Collins Aerospace is keeping an eye on the adoption of biometrics, as well as cloud-based solutions and sustainability targets, for Middle East airports. **Chloë Greenbank** reports.



PASSport to a biometric future

This year's Dubai Airport Show saw Collins Aerospace generate plenty of exciting new leads with a significant number of visitors from Saudi Arabia – a destination the airport solutions provider is targeting for growth.

"The Middle East is one of the fastest-growing regions and I don't see anything holding it back," said Rakan Khaled, general manager airport systems, Collins Aerospace. He also noted there is a rapidly growing interest in biometrics from stakeholders across the airport sector.

Collins has developed SelfPass to meet demand for a full end-to-end biometric-enabled journey. "It connects to all the touchpoints within the airport environment, handling biometric tokens across all platforms," said Khaled.

SelfPass is already in operation at Haneda Airport in Japan, where it was deployed to coincide with the country hosting the Olympics in 2021 to minimise physical interactions and congestion at the many touch points.

The company is now in discussions with airports across the Middle East to implement a similar solution. "Our end goal for airports within our portfolio is to have a full paperless, biometric-enabled journey," said Khaled.

He also acknowledged that "one of the main challenges with this technology is getting the different regulatory authorities and stakeholders to collaborate more effectively and agree on a universal solution. But we're working on it."

□ □ □ □ □

In the meantime, the company is busy strengthening its presence in Egypt. In December 2021, it was awarded an IT contract by Egyptian Airports Company (EAC) through its subsidiary AVIT, to upgrade eight airports across the country. The system, now up and running, "is our first multi-airport deployed solution where we have a centralised base in Cairo helping manage operations at airports throughout the country, including Sharm El-Sheikh, Hurghada, Luxor and Aswan."

Collins is also engaged, through Turkish contractor Limak, on the new terminal at Kuwait International Airport,

where it has a team deploying a range of airport solutions.

"It's one of our biggest wins in the region and is a hugely exciting project as it is based on a futuristic vision," said Khaled. It is currently due to be completed by mid-2023.

In terms of how Collins is developing tools to enhance airport operations and improve the passenger experience, Khaled said hosting platforms on the cloud was key. "Our cloud-based solutions enable airports to be more flexible and are integral to achieving more sustainable operations, as they mitigate the need for a large data centre, which requires significant power and takes up space."

Sustainability is at the core of Collins' model, with Khaled underlining that the company was committed to helping airports achieve their lower carbon goals too.

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"I've been impressed at how our partners and stakeholders in the Middle East have embraced sustainability," he said. "There is huge awareness and willingness to adopt more sustainable solutions and most of the requests for proposals (RFPs), especially for the bigger air transport hubs, include a requirement to demonstrate how sustainability targets will be met."

Looking ahead, the company is focused on getting airports in the Middle East back to capacity following the setbacks caused by the global pandemic. "Many projects have been on hold for the last two years, so it's about getting our partners back on track and our vision is to create a seamless travel journey for all airports in the Middle East," said Khaled.

"On the airport solutions side, Collins already has a strong presence in the UAE, Kuwait, Qatar and Egypt. Now the focus is on growing our presence throughout the region, especially in countries such as Saudi Arabia. There is plenty of opportunity for us to leverage growth in the Middle East and one thing we pride ourselves on is that once we win a project with a new customer, we are there for the long haul." ▲



Rakan Khaled: "Our cloud-based solutions enable airports to be more flexible." PICTURE: COLLINS AEROSPACE

MENZIES DEAL MAKES A WORLD OF DIFFERENCE

A Kuwaiti company is to combine with a UK counterpart to create the world's largest airport services organisation.

Kuwait's Agility Public Warehousing Company is to acquire John Menzies, whose Menzies Aviation subsidiary is a major player in the ground handling, fuelling and cargo businesses.

Agility is a global supply chain services, infrastructure and innovation company, and Menzies will be combined with Agility subsidiary National Aviation Services (NAS). NAS is one of the fastest-growing regional aviation services providers, operating at more than 55 airports across the Middle East, Africa and South Asia.

The larger Menzies Aviation, meanwhile, operates at more than 200 airports in 37 countries, with a 25,000-strong workforce. In 2020, it handled 500,000 aircraft turnarounds, 1.2 million tonnes of cargo and fuelled 1.9 million aircraft.

The new combined company is expected to be the largest airport services company in the world by the number of countries it operates in, second largest in terms of airports served, and third largest in terms of revenue.

The combined revenues of Menzies and NAS



World beater: Menzies Aviation's acquisition by Agility will make it the largest airport services company in the world. PICTURE: MENZIES

exceeded \$1.5 billion in 2021. The combined group is expected to have around 35,000 employees with a presence at more than 250 airports in 57 countries, handling more than 600,000 aircraft turnarounds per year.

"The NAS-Menzies combination brings

together highly complementary operations and ensures that the combined business has the scale and resources to grow," said Hassan El-Houry, NAS chief executive. "Employees of both companies will benefit from being part of a larger, stronger group that offers more career development and advancement opportunities."

"Menzies is a good fit," added Agility's vice-chairman, Tarek Sultan. "The aviation sector has strong growth potential, and Menzies is one of the most-established providers in the industry, with a sustainability focus we share."

The combined group will unite NAS's operations in fast-growing emerging markets across the Middle East and Africa, with the strong presence of Menzies in Europe, North America and Oceania. It will likely use the globally-recognized Menzies and Menzies Aviation brands following completion of the acquisition.

NAS/Agility intends to retain a corporate hub and significant head office functions in Edinburgh, where the company was founded in 1833, with a new head office in London. ▲

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The Early Warning Radar stands guard

Radar provides 360-degree coverage that never stops

The Early Warning Radar is the cornerstone of missile defense for the U.S. and allies, and it's easy to see why.

The radar, also called EWR, can track more than 1,000 objects at the same time from more than 5,000 kilometers away. It can tell ballistic missile and air-breathing threats from non-threats, and it can deter potential attacks.

Here's why the EWR, built by Raytheon Missiles & Defense, a Raytheon Technologies business, stands apart from other sensors.

The EWR performs four missions.

- **Early warning and attribution:** The EWR can warn of a missile threat and find its launch point up to 20 minutes before it happens. That creates a deterrent effect; adversaries know they are not hidden, even from far away, and that a retaliatory attack is possible.



"The best way to fight a war is never to have one in the first place," said Matt Krempin, director of International Requirements and Capabilities for Air Power at Raytheon Missiles & Defense.

- **Integrated air and missile defense:** The radar provides persistent, 360-degree defense, and gathers precise tracking data and feeds it into integrated air and missile defense systems, improving their effectiveness.

"You want to increase the capability of existing assets by letting them focus on what they do best, which is discrimination," Krempin said, "and letting a heavy lifter like EWR do all of the surveillance and a lot of the tracking."

- **Space situational surveillance:** There are thousands of objects in lower Earth orbit, and their paths make them look like tactical ballistic missiles. The EWR's long range allows horizon-to-horizon tracking to ensure threatening objects are addressed and non-threatening objects are not.

"The radar can tell the difference between satellites and tactical ballistic missiles in the same area, so you're not confusing a satellite with a missile," Krempin said.

With 6,000 satellites in orbit now and that number expected to triple in the next 10 years, keeping satellites safe during commercial flights is also vital.

- **Volume air surveillance and tracking:** Commercial airspace is increasing in density, making it especially important to tell the difference between friendly and adversary aircraft. The EWR makes that distinction, while helping coordinate, communicate and prioritize threats.

It's ideally suited for the Middle East.

The EWR uses the ultra-high frequency band, or UHF, which offers several advantages over S-band radars, including the capability to simultaneously track and classify a greater number of targets. And they require a lot less power to operate.

"It's the perfect complement to existing assets in countries like the United Arab Emirates, where you have great capabilities against current threats. But there are certain gaps, and EWR fills those gaps," Krempin said.

It's modernized to stay ahead of threats.

The EWR has performed missile warning and missile defense missions in the United States for more than 25 years, and the U.S. along with allies have continually invested in the system to keep it ahead of emerging threats.

One of those long-term investments is the solid-state transmit-and-receive module made with the powerful semiconductor gallium nitride, or GaN.

That module delivers more capability and better energy efficiency, lowering operational costs. Other advancements include software updates that improve surveillance, tracking and object classification.

"Today, we bring forth a capability that we've never seen before," Krempin said.

It works well with ground-based sensors.

As a systems integrator, Raytheon Missiles & Defense has ensured EWR is interoperable with the AN/TPY-2 radar, Global Patriot Solutions, Lower Tier Air and Missile Defense Sensor, or LTAMDS, and the Terminal High Altitude Area Defense, or THAAD – and has done so in a cyber-hardened environment.

It operates nonstop.

The EWR operates continuously, even during maintenance.

"It's really a security blanket. You can continue to operate and maintain not only EWR, but also your other radars without sacrificing security," Krempin said. "And adversaries will know that because you're radiating the whole time."





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Julie Dickerson
Chief Executive Officer

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Fly Certain

Airlines want to achieve net zero targets but they cannot do it alone. **Mark Pilling** reports from Doha on how meeting the challenges calls for a joined-up effort throughout the aviation ecosystem.

THE NET COST OF ZERO...

Arab governments need to address reform of the region's air traffic management (ATM) infrastructure and the introduction of strong incentives for sustainable aviation fuel (SAF) production.

These are two clear priorities, in the view of the Arab Air Carriers Organisation (AACO), for the support of industry efforts to reach net zero emissions by 2050.

"Our promise as airlines is to achieve net zero at the best cost possible," said Abdul Wahab Teffaha, AACO secretary general, speaking to *Arabian Aerospace* on the sidelines of the IATA annual general meeting in Doha from 19-21 June. "But it is going to be a substantial cost burden, and this is where governments come in," he said.

AACO has been studying the possible scenarios for Arab carriers to achieve net zero by 2050, said Teffaha.

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A characteristic of Arab carrier operations is that 98.3% of operations are conducted by air and cargo carriers on routes greater than 1,500nm, compared with about 80% for carriers in other regions.

The implication is that SAF, as opposed to alternative fuels such as electricity or hydrogen which will be available first for shorter routes, will be the most important alternative to petroleum-based Jet A/A1 for Arab airlines. "It means the tools to do this, particularly SAF, are going to be paramount," said Teffaha.

"AACO's first message to states is we need a reform of ATM. We need to convince them that the flexible use of airspace between civil and military users, plus the use of more direct routings, must happen.

"This is the No 1

priority. If the infrastructure is not fixed, a large percentage of our efforts to reach net zero will be in vain."

Secondly, SAF is going to be the fuel of the future so governments must incentivise its production and its use, said Teffaha. Countries throughout the Arab region acknowledge that a transition from economies based on fossil fuel production to ones centred around a sustainable energy industry is critical over the coming decades.

Arab states are stepping up and investing in alternative energy sources, such as solar power, said Teffaha. Studies were also under way in Abu Dhabi and Qatar into SAF production opportunities in the Gulf, although the region does not yet have a SAF plant in the works.

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AACO studies into the costs of achieving net zero show airlines have a right to be concerned about the burden it may bring. "Our work shows that if we apply today's price of SAF and the price of offsets, there will be a 27% increase in annual cost for airlines," said Teffaha.

This is not a load that airlines can carry alone, he argued. "If aviation is burdened with too much cost, then travel will be suppressed with the resulting impact on economies and jobs."

In addition to calling on governments to support SAF, Arab carriers called on the oil majors to do more. At the IATA meeting, Qatar Airways chief executive Akbar Al Baker, said: "The pressure on these companies to move to SAF will be immense, they will have no option but to turn to it."

IATA director general Willie Walsh added: "The bottom line is that there is an opportunity here... it is a business opportunity for countries. You no longer need to have oil in the ground to produce fuel. If the oil majors don't do it, they will no longer be the only people [in the fuel supply market]."

Teffaha said: "Critically we must not lose sight of the objective, which is net zero. It is not SAF, not offsets, not hydrogen. We need help to achieve the target."

PICTURE: BILLYPIX

If aviation is burdened with too much cost, then travel will be suppressed with the resulting impact on economies and jobs.

ABDUL WAHAB TEFFAHA

Etihad Airways is serious about its commitments to sustainability through reducing carbon emissions and eliminating waste. Can it achieve its own deadlines?

Marcelle Nethersole reports.



Green light: The Boeing 787 Greenliner, the airline's most sustainable aircraft, cut CO2 emissions by 72% on a flight from London to Abu Dhabi. PICTURE: ETIHAD.

ETIHAD TRAILBLAZES THE ROAD TO NEUTRALITY

Etihad Airways has a goal to be carbon neutral by 2050 and Terry Daly, the carrier's executive director Guest Experience, Brand and Marketing, says it's "definitely on track" to achieving this "by, or even before 2050."

"Sustainability has always been a top priority for Etihad," he said, "and even through the past two years of challenges, we have made great leaps forward."

In 2019, the airline committed to reach 50% of 2019 emissions by 2035 and to achieve net-zero emissions by 2050.

"We have a roadmap of how we will achieve this, with initiatives and partnerships that will provide operational efficiencies along the way," said Daly.

Etihad's most recent eco-flight on October 23, 2021 achieved a 72% reduction in carbon emissions, he noted. "We did this through a close partnership with the industry to optimise every single element of that flight."

These included operating the Boeing 787 Greenliner, the airline's most sustainable aircraft type, incentivising passengers to bring less luggage, working with Eurocontrol to optimise the flight path, and flying a continuous ascent and descent.

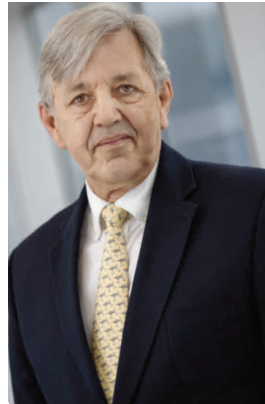
"What's more, we used the maximum amount of SAFs we could acquire – 38%."

Inside the cabin, the airline is reducing single use plastic. It recently unveiled its new economy class soft furnishings and tableware, something Daly is "proud" to be heading up.

"The new products have been designed with sustainability and improved guest experience as primary objectives, and they will be on board later this year," he said.

"Our new dining experience features reusable tableware made from recycled high-quality plastic and eliminates the use of single-use plastic."

"We are effectively moving away from disposable single-use plastic equipment on the main tray and replacing this



Terry Daly: "At the end of their lifecycle, the new products are collected, washed, ground up and reused to make new replacement products, eliminating waste that might end up in landfill."

PICTURE: ETIHAD.

with reusable tableware, including the lids of bowls and casseroles."

Daly said the new products are part of a closed-loop recycling system: at the end of their lifecycle, they are collected, washed, ground up and reused to make new replacement products, eliminating waste that might end up in landfill.

Etihad is also introducing quality stainless-steel cutlery into the economy cabin. "The cutlery is smartly packed in quality premium paper napkins without any plastic packaging," said Daly.

"The second/mid-flight service on longer flights will no longer be served in a disposable paper bag," he said. Instead, it will be served on the new dining equipment on a new Café Platter, enhancing the service and product while reducing the amount of disposables and waste.



Etihad is also tackling the problem of food waste with an initiative that helps people in need.

"With proper food menu planning, we have reduced food waste and are constantly looking at how we can do better," said Daly. "We've also been able to donate unused meals to people in need, through the support of the Emirati Red Crescent."

The airline is not overlooking finer details inside the cabin, including cushion covers.

"The new cushion cover is made of 200 thread count cotton to improve the rest and sleep experience on board in Economy," said Daly. "This reusable high-quality cushion cover replaces the current disposable non-woven material" which is plastic-based. The new cushion cover and pillows are produced locally in the UAE, supporting our drive to reduce carbon emissions and support 'Made in the UAE' products where possible."

Daly said Etihad was "trailblazing" when it came to sustainability. "We constantly look at weight reduction of each product on board to support reduction of carbon emissions. Where possible, we source products and food items locally and streamline the number of products we carry on board to be more efficient."



Pioneering innovation for sustainable flight



The Rolls-Royce Trent engine family is already making a substantial contribution to sustainable aviation by maximising efficiency on every single flight.

All Trent engines can be operated on blended fuel with up to 50% Sustainable Aviation Fuel (SAF) content, enabling lower carbon flying. By 2023, all Trent engines will be compatible with 100% SAF.

#FlyNetZero #PowerOfTrent
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GREEN LIGHT?
A decision on whether to formally launch the 70 to 90-seat turboprop, which will be capable of running on 100% sustainable aviation fuel (SAF), is expected in early 2023.
PICTURE: EMBRAER



Flexible: The KC-390 is a military transport aircraft developed to establish new capacity and performance standards in its category, delivering at the same time the lowest life-cycle cost in the market.
PICTURE: EMBRAER

Embraer propels into the regional market

Brazilian aircraft manufacturer Embraer has unveiled its plans for the future, including its hopes for the Middle East commercial and military markets. **Alan Dron reports.**

The Middle East has always been a difficult area for regional jet sales. Few airlines use them. One of those that does is Royal Jordanian, which operates four Embraer 175s and 195s. Israel's Arkia operates a handful, as does Petro Air in Libya. However, the Brazilian type has been phased out in recent years by both EgyptAir Express and Oman Air. "It has always been a distinct, different market from the rest of the world. It's mainly long-haul to long-haul transit [traffic]," noted Arjan Meijer, Embraer Commercial president and CEO, at a briefing at the company's Sao Jose dos Campos site in late May. Regional connectivity in the area remained important, said Meijer, and discussions were ongoing with several potential Middle East customers. The scale of business remained different compared to other regions of the world, but Embraer continued to believe that there was "real opportunity in the Middle East to feed wide-bodied aircraft" operating out of the region's major hubs. The Middle East – and particularly the Gulf – is also not a happy hunting ground for turboprop manufacturers. The type has long been

disdained by consumers in the region, some of whom regard them as too small to be credible, noisy and slow. Embraer hopes to dispel these impressions with its new 70 to 90-seat turboprop. The aircraft has been significantly changed during the design process, with the engines moved from the wings to the rear fuselage. This will enable it to use jetways at airports, as well as significantly reducing noise in the cabin, Embraer says. It will also use the same cabin cross-section as the E-Jets. These factors, says the Brazilian airframer, will make the aircraft look and feel very different to passengers from today's turboprops and the new design is aimed at replacing both current models and older regional jets. Whether this will be enough to sway customers remains to be seen. A decision on whether to formally launch the aircraft, which will be capable of running on 100% sustainable aviation fuel (SAF), is expected in early 2023. Looking further to the future, Embraer is planning a family of aircraft under the Energia

banner that will take advantage of new propulsion systems. The company's intention is to gradually work its way up in both size and complexity of new engines, starting with a nine-seat electrically powered platform with a 200-mile range by 2035, with a hybrid-electric model in the 10 to 19-seat category, possibly leading to as many as 50 seats. However, believes Embraer, that is probably the viable limit for electrically powered aircraft, given the weight of batteries that they will need to carry. Beyond that, the industry is looking at hydrogen for its power source – either in the form of a hydrogen fuel cell in which the gas is burned to power an electric motor, or through a hydrogen-powered gas turbine. The last of these, the company believes, could power a 150-seat aircraft. It reckons that the industry is looking at the 2045-2050 timeframe for the replacement of engines with completely new powerplants. On the military front, Embraer is pinning its hopes on its C-390 Millennium multi-role transport (the aircraft's original designation was KC-390, reflecting its air-to-air refuelling role, but acting as a tanker is now considered to be just one of the duties that the aircraft will be capable of performing). The aircraft recently embarked on an eight-nation Middle East tour to drum up interest. The company believes that with the average age of the world's medium transport fleet being a

remarkable 31.2 years, replacements for many of these aircraft cannot be delayed for much longer and it hopes to tap into this forthcoming demand. Jackson Schneider, president of Embraer Defense and Security, said that demand has been greatly heightened by recent conflicts that have pointed up the importance of logistic back-up for combat troops. The war in Ukraine has seen Nato nations shuttling weapons into airfields in Poland, for example, for onward transmission to Ukraine, while last August's chaotic withdrawal of western forces from Afghanistan highlighted the critical role that transport aircraft play in troop movements and evacuations.

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In the light of these events, many countries have realised that their current logistic set-ups are not up to the required standard and they are actively looking around for new transport aircraft, said Schneider. Embraer hopes to take a share of any new orders for medium transports. There are around 1,500 in the medium transport category currently in service, the company estimates. By far the largest number of aircraft in the category are variants of Lockheed Martin's legendary C-130 Hercules. Many countries may well see the best replacement for a C-130 as a new (or newer) C-130 and there are likely to be some bargains around. The UK, for example, is retiring around 10 of its fleet of 25 C-130Js and

stretched C-130J-30s earlier than planned and these are likely to be sold off. Bahrain has already acquired two, for example. The British examples were heavily used in the UK's involvement in Afghanistan but have been well maintained and will give several years' more service to new owners, especially if they fly the aircraft at a lower tempo than in recent years. And they will be much cheaper than buying new aircraft such as the C-390. However, Embraer believes that the price tag of the C-390 will be lower than that of a new C-130J. Schneider said during the briefing that Embraer respected the C-130J-30 as a "great product" but that the C-390 represented a new generation of equipment. The two aircraft's cargo compartments are roughly similar in size. The C-390's is slightly larger in all three dimensions and Embraer says that the C-390 will carry 26 tonnes, compared to the C-130J-30's 20 tonnes. Following its Middle East tour, the aircraft was scheduled to tour Asia-Pacific and, in early June, Embraer announced that it was in talks with India over the aircraft. Commentators have estimated that India requires 25-30 aircraft in the medium transport category, following the 2017 ending of the Indo-Russian Medium Transport Aircraft project. India is facing increasing pressure from China on its north-eastern border, with austere airfields in the region requiring rugged transporters. The Indian Air Force operates both C-130s and C-17 Globemaster strategic

transports, but observers believe the C-390 could add useful capacity. Closer to home for Embraer, the Força Aérea Brasileira ordered 28 C-390s, with the first being delivered in 2019, but the Service has cut back its order for the type from 28 to 22. A decrease or increase of up to 25% of the initial 28-strong order was allowed by the terms of the contract. However earlier this year, the FAB said it wanted to cut the order further, to only 15, with a senior officer citing budget unpredictability as the reason for being unable to afford more, at least in the short term. The eventual outcome remains uncertain, but Embraer says it still retains a contract for 22 of the twin-turboprop aircraft. A further five have been ordered by Portugal to replace its C-130s – the first of these was on the final assembly line at Gavião Peixoto in late May – together with two examples from Hungary. Argentina has said it plans to order four, but that country's ongoing severe economic problems have prevented it from signing a firm order and there is, as yet, no indication as to when this will happen. The aircraft has also been shortlisted by the Netherlands to replace its existing C-130s. Overall, Embraer believes that it has a range of platforms in both the civil and military sectors that can help propel its fortunes in an upward trajectory over coming years.

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EXPANDING HORIZONS FOR ISRAEL AND MOROCCO

A recent agreement between Israel Aerospace Industries (IAI) and Morocco opens the door for 'win-win' cooperation in the aerospace sector. **Anuradha Deenapanray** reports.

A new research and development (R&D) and engineering centre is on the cards for Morocco's aviation industry under terms of a memorandum of agreement (MoU) between the North African country and Israel Aerospace Industries (IAI).

It is part of a wide-ranging strategic partnership and follows the 2020 Abraham Accords under which Morocco and Israel agreed to promote bilateral economic cooperation and innovation in investment and technology.

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Ryad Mezzour, Minister of Industry and Trade, said the MoU responds to national priorities in advanced training, employment and local manufacturing, as well as R&D and innovation.

"The partnership leverages IAI's aviation expertise and the technological capabilities of our aerospace platform and its positioning as a growth driver for the investment and development in advanced industrial and



GROWTH DRIVER: IAI and Morocco collaborate.
PICTURE: VINCENT CHAPPARD

aeronautical services sectors," he said.

For IAI, Moroccan-born chairman Amir Peretz said it is an "additional step" in building the relationship between IAI and Morocco's aviation and space industries. "I am aware of the incredible potential that exists in Morocco," he said. "This is just the beginning."

Boaz Levy, IAI president and chief executive, said the MoU offers the Israeli aerospace and defence group new opportunities to access new markets for the advancement of the global aviation industry.

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The partners have identified investment opportunities focusing on 3D printing, the manufacture of cabin interiors, engine parts and aerostructures, and the development of an 'ecosystem' of local suppliers through sourcing partnerships with IAI.

Since the historic Abraham Accords, IAI has taken cautious steps to share its 70 years of expertise with new partners in the Middle East through participation in trade shows and strategic collaboration in the region, including passenger-to-freight (P2F) conversions with the UAE's Etihad Engineering and line maintenance with Gulf Air of Bahrain. ▲



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With training activities in the helicopter sector picking up again as the industry climbs out of the trough caused by Covid-19, the Gulf Helicopters Training Academy in Doha is looking to the future.

Alan Dron reports.

Academy takes off post-Covid



DUAL PURPOSE:
Gulf Helicopters in action
for both land and sea.
PICTURES: GULF HELICOPTERS
TRAINING ACADEMY

Rising demand for its courses has prompted the Gulf Helicopters

Training Academy to look into upgrading one of its simulators, and even consider the possibility of branching out into fixed-wing training.

With the oil and gas sector steadily increasing its output to cope with the reviving global economy and to offset oil shortages caused by the Russia-Ukraine conflict, the academy is seeing growth in the number of personnel it enrolls.

The academy was originally set up to cater for the training needs and requirements of Gulf Helicopters' own staff, but this has gradually broadened into providing courses for third parties. The primary customer remains the parent company, but pilot, engineering and administrative training is now handled for a range of other operators.

The academy does not provide ab initio training, but specialises in type rating courses, as well as rating renewals. Close to 250 pilots pass through the academy each year for type rating and retaining their existing ratings.

One of the knock-on effects of layoffs during the pandemic is the current bow wave of demand. "Right now, we're in the post-coronavirus phase, so we're basically managing the renewal of pilots' and engineers' licences," said head of

training Capt Claudio Fenley. Slowly and surely, enrolment for initial type rating courses was picking up too.

As well as engineering, the facility offers training in areas including safety management systems, handling dangerous goods, security and human factors.

Given Qatar's huge offshore oil and gas reserves, training for pilots serving offshore platforms – particularly the procedures necessary for take-offs and landings – are high on the agenda.

Training is provided for a range of helicopters, particularly those widely used for the offshore oil and gas sector, such as the AgustaWestland 139 and 189, the stalwart Bell 212 and 412, and the Bell 206. The academy can make use of any of the parent company's aircraft when they are required for training. Effectively, the aircraft are dry-leased from Gulf Helicopters, with an academy instructor undertaking the training.

The academy has simulators for both the AW139 and 189. "We provide training for customers from Europe, Africa and Asia – as far east as Thailand," said Fenley. "We always want to expand."

Africa – particularly Nigeria, with its large oil sector – is a particularly strong source of pupils, noted Fenley. Indeed, he added, such was the popularity of the courses that, for a period, the academy was providing more training hours for Nigerian pilots than for Gulf Helicopters itself.

"Our facilities are not that fancy. We don't go for that too much. But the whole package here in Qatar is so welcoming and Qatar Airways provides

links with virtually anywhere in the world."

If necessary, expansion of the academy's facilities could be undertaken swiftly, said Fenley; a new building could be erected in around three months. "But the priority right now is to look into upgrading the AW139 simulator, so we can cater for more customers. That's the initial plan."

However, the academy is also looking at the possibility of growing its activities into fixed-wing training. "We're thinking of expanding into this in the near future," Fenley said. In particular, the academy is looking into providing training on smaller turboprops, as well as on executive jets. Private jets could be chartered out to academy clients when not required for training sorties, providing another revenue stream.

With few turboprops operating in the Gulf, this would suggest that the source of pilots undergoing training on them would again come from regions such as Africa, where they are ubiquitous. ▲



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Thales plots the route to improved fuel efficiency

Thales Avionics sees next-gen flight management systems (FMS) as an integral part of greener, more economical flights, writes **Steve Nichols**.

People may think that demands for greener flights are a relatively new phenomenon, but in reality, they have always been there.

"Airlines have always wanted to cut fuel consumption to improve their bottom lines," said Yannick Assouad, executive vice-president, Thales Avionics. Reducing CO2 emissions is just an added bonus in an environmentally-aware world.

A number of trends for more efficient operations are emerging.

"We see replacing older aircraft within fleets as key," she said. "Newer, leaner, more fuel-efficient aircraft can make a big difference to operating



Yannick Assouad: Data will help the FMS choose the most efficient route. PICTURE: THALES

costs with up to 50% less fuel burn."

She also expects to see a big increase in the development of synthetic fuels. "But it may be 10-15 years before we see aircraft powered differently, by using hydrogen or battery/fuel-cell-powered electric motors," she said.

Meanwhile, Thales thinks there are easier ways for airlines to save

fuel. One of them is a more modern approach to flight management.

"Existing flight management systems (FMS) use old technology and there is no easy and quick way to change your route," Assouad said. "But by

making it a fully connected FMS you can bring in a lot more data to help the FMS choose the most efficient route.

"For example, by taking advantage of tailwinds at a different altitude, significant cost savings can be made."

Thales was recently selected by Airbus to equip its commercial airliners with a new innovative FMS. The new system, which is based on the Thales PureFlyt product, is being designed in particular for the A320, A330 and A350, significant numbers of which are operated by airlines in the Middle East and subcontinent, including the world's biggest fleets of A330s (Turkish Airlines) and A350s (Qatar Airways).

Entry into service is planned for the end of 2026.

The new system will optimise flight paths to help reduce the carbon footprint of airline operations. Thales says it is specifically designed to efficiently manage aircraft in a connected aerospace ecosystem and in increasingly crowded skies.



Route optimisation: The new system based on Thales' PureFlyt product will help airlines reduce their carbon footprint. PICTURE: THALES

The FMS is the 'brain' of the aircraft and is used to prepare flights, set flight parameters and ensure aircraft guidance throughout the flight, including approach and landing procedures.

Designed from the outset to be connected and cybersecure, the system maximises the benefits of access to data including real-time weather information.

By linking the new FMS with non-avionics systems — such as the pilot's Electronic Flight Bag (EFB) and airline operational control centres — the solution will make it quicker and easier to analyse flight plan revisions, providing the pilot with the best route and simplifying interaction with air traffic control (ATC).

Interconnecting the FMS with AvioBook, Thales' EFB application suite, will give flightdeck crews access to an intuitive graphical user interface (GUI) allowing them to quickly and accurately respond to dynamically changing conditions.

This relieves crew of the tedious, distracting and time-consuming task of manually updating the flight plan through a complex sequence of FMS button-presses. Instead, the pilots use the intuitive EFB GUI and then verify the changes on the new FMS before committing the changes to the active flight plan.

□ □ □ □ □

Thales says it will help to ease airport congestion, cut fuel consumption, decrease noise pollution and reduce pilot workload.

The company is drawing on experience gained on more than 100 million flight hours with Thales' current generation of FMS systems, enabling airlines to benefit from an optimal combination of flight safety, operational efficiency and fuel savings.

It includes navigation and performance databases for the precise calculation of optimal flight paths and flight times. The plan is to make the FMS available for both new aircraft and retrofit.

Airbus's choice of a system that is compatible with all its aircraft will enhance fleet interoperability

for airlines and make it easier for pilots to make the transition from one Airbus aircraft type to another.

Typically, pilots only get up-to-date weather information from any on-board weather radar system. But any weather feature may be out of its range. Traditionally, EFBs only know about weather from out-of-date forecasts, but now they will be able to get up-to-date weather information while in flight.

The system can then suggest alternative routes to avoid thunderstorms or other adverse weather, complete with an updated estimated arrival time and any additional fuel burn.

This means pilots know what they are selecting from the outset.

For example, your original flight plan might be for flying at flight level 340, but the FMS might suggest flight level 375 to save fuel. If ATC agrees, you can then transfer to the new suggested routing and save the airline money.

Thales calls this trajectory management. Sometimes the pilot may have to deviate from the planned path. The new FMS will always calculate how to get back on track with a valid plan and it can do this 5-10 times faster than current systems.

Another new feature is vertical profiling on the EFB, showing the actual flight profile in a graphical display.

Thales thinks its new FMS, when introduced, could save 13 million tonnes of fuel and 40 million tonnes of CO2 per year.

By combining the integrity of the FMS and the agility and power of the EFB, the aircraft trajectory can be permanently controlled, adapted and enhanced, resulting in optimised flight, decreased fuel consumption and improved passenger comfort.

At the end of a flight, the updated flight plan from the EFB is ready to be sent to the company at the touch of a button.

A team of 400 engineers at Thales' operations in Toulouse and Bordeaux, along with commercial airline pilots, have been working on the new FMS. ▲

STUDENT DISENFECTION ELIMINATES COVID VIRUS IN 30 SECONDS

Necessity proved the mother of invention for a Saudi Arabia-based team whose pandemic-inspired detour brought a new disinfection product to market.

Jill Stockbridge checks out Wayakit.

In 2018, Luisa Javier and Sandra Medina, PhD students at King Abdullah University of Science and Technology in Saudi Arabia, developed a laundry spray, aimed at the travel sector, that removed stains and odours from clothes without water.

When their potential market collapsed due to the pandemic, the team switched focus and developed a new market in aviation disinfection.

Mauricio Zavaleta, co-founder and chief commercial officer of Wayakit, explained: "We had not previously looked at the disinfectant properties, but our researchers investigated and proved that our product eliminates the Covid virus up to 99.999% in just 30 seconds, making it one of the fastest disinfectants in the world."

Wayakit is also a green triumph. "Our product is based on citric acid," said Zavaleta, "which makes it harmless to the environment, with 95-98% biodegradability." It's designed not to stain, corrode, remove sealants or cause cracks — key criteria for aviation.



CLEANING UP: Luisa Javier and Sandra Medina.

"This product offers a sustainable, ecofriendly product with reduced CO2 emissions and no need for water, yet without affecting cost or compromising quality, and covering a broad spectrum in stain removal," said Zavaleta.

"We have a high material compatibility, which is essential when it comes to aircraft interiors, and it is safe for the skin of the people that come into contact with it."

The company now has teams in four countries, and is developing business in the Middle East, having signed a memorandum of understanding (MoU) with Aviation Business Consulting in Kuwait, to become supplier there for National Aviation Services (NAS), the Royal Terminal and the airport.

Zavaleta said: "We have also finally concluded the last test that Saudia requested from us, which was the BSS7438, so we are in position to begin the testing phase within their aircraft." The company was awaiting confirmation to begin this process.

The team also has hosted Saudi Royal Fleet and Saudi Catering in its plant and facilities and discussed the possibility of becoming a supplier for both. ▲



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The travel and tourism industry is recovering: international travel this year is expected to see strong growth, with the Middle East making its mark. **Marcelle Nethersole** reports.



Surge in visitors spices up the travel market

Hot spot: The Dubai spice souk is a big attraction for travellers.
PICTURE: ALLSORTZ

It's official: travel is back in business. For graphic proof, look no further than this year's Arabian Travel Market (ATM) that took place in Dubai in May and featured 1,500 exhibitors and representatives from 112 destinations.

ATM exhibition director Danielle Curtis said: "These figures are especially impressive given lockdowns were still taking place in China and other destinations.

"What's more, the development of the travel and tourism sector throughout the Middle East region shows no signs of abating," she added, pointing out that Gulf Cooperation Council (GCC) countries expected a 16% rise this year in the number of contracts awarded for hotel construction.

Despite restrictions on movement in China, the war between Ukraine and Russia – whose citizens have contributed to the numbers of tourists frequenting the Middle East – the region saw more than 44 million visitors in 2020.

Regional airlines are also now expanding their routes domestically and internationally,



On show: The Arabian Travel Market (ATM) took place in Dubai in May. PICTURE: ARABIAN TRAVEL MARKET

responding to growing demand in the face of economic pressures such as the cost of fuel.

Scott Livermore, chief economist of Oxford Economics, said during the opening of the ATM: "We expect oil prices to remain above US\$100 a barrel for most of the year.

"This clearly pushes up the cost for all airlines and can translate into higher airfares, especially for long-haul flights.

"However, during the Covid-19 crises, people couldn't spend but households built up excess savings, which could cushion the impact of rising oil prices and also generate the ability for them to spend on travel."

The UAE still ranks as one of the top Middle East destinations internationally, with **Dubai** being the most popular due to its array of hotels, beaches and fine restaurants, plus reliable sunshine. And the emirate always has something new popping up to lure the tourist.

However, up the coast, the emirate of **Ras Al Khaimah (RAK)** is also proving a popular destination. RAK Tourism Development Authority has unveiled new offerings which will focus on sustainability, wellness and adventure. Over the next year the emirate will expand on its 6,700 hotel rooms, adding 2,000 more, including 100 on Jebel Jais, at almost 1,900m the highest point in the UAE.

Meanwhile, **Qatar** – which welcomed 2.1 million visitors in 2019 – has been busy building new hotels to deal with the expected surge

Continued on Page 58

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Desert dream: Saudi Arabia plans to turn Wadi Hanifa, near Riyadh, into a nature-based escape from the city.
PICTURE: SAUDI TOURISM AUTHORITY

CONTINUED FROM PAGE 56

in visitor numbers this November as the FIFA World Cup Qatar 2022 kicks off. FIFA said 17 million ticket requests have been received as of early summer.

Qatar's authorities are also adding new attractions and activities to what is already on offer, from galleries and markets to desert safaris and UNESCO-listed sites such as Al Zubarah Fort.

However, other Middle Eastern countries are popping up as popular destinations with something for everyone, from beach and city holidays to religious, ecotourism and wellness travel.

The **Kingdom of Saudi Arabia** is making a big impact after it opened to tourism in 2019, offering a diverse travel experience.

"Last year was remarkable for us," said Fahd Hamidaddin, chief executive of the Saudi Tourism Authority. "We hit a record high in domestic visits. We had 62 million visits in 2021 and funded more than US\$8.4 billion in new projects from the Saudi Tourism Development Fund.

"We have also allocated 30% of Saudi land to be reserves and are committed to rewilding 21 species. Our target for this year is to reach more than 70 million visits."



Wellness and ecotourism are high on the Saudi agenda. The Diriyah Gate Development Authority (DGDA) announced its plans to transform Wadi Hanifa, near Riyadh and one of Saudi Arabia's most iconic oases, into a nature-based escape from the city.

Plans outline the restoration of two square kilometres of palm groves containing hundreds of thousands of trees from species native to the wadi. The redevelopment will feature new parks with walking trails, and biking tracks. Wellness spaces, activity zones and ecotourism attractions will be at the heart of its enhancement which aims to improve the quality of life.

The city of Diriyah is also set to become a 'foodies'

delight' as Bujairi Terrace, part of DGDA, is developing a zone featuring 21 brands ranging from fine dining – with Michelin-starred restaurants including Hakkasan, Chez Bruno, Long Chim and Tatel – to local authentic Saudi cuisine.

Of course, religious tourism makes up a large part of the Kingdom's tourism figures with Mecca, Islam's holiest city, welcoming millions of pilgrims for the annual Hajj, which this year fell in July, or for Umrah, which can be undertaken at any time.

Aviation Source said Saudia, which has a dedicated Hajj business unit, was expected to operate a fleet of 14 aircraft, a mix of Airbus and Boeing types, on 268 international and 32 domestic flights to accommodate about 12% of the expected traffic.



After two "muted" Hajj seasons due to pandemic restrictions, authorities expected a rebound this year to around a million pilgrims.

Another country keen to promote its religious tourism, as well as put itself on the map as a 'new destination in the Middle East', is **Iraq**.

"Around 70% of our tourism is religious, with many visitors from Kuwait, Qatar, Saudi in particular," said Qaiser Tareq, chief executive of Orchid, the meetings, incentives, conferences and exhibitions (MICE) and tourism group.

Iraq is home to five cities considered holy by Sunni and Shi'a Muslims, including Najaf and Karbala. Said Tareq: "It's estimated that only Mecca and Medina in Saudi Arabia have more pilgrims than Najaf, one of the holy cities for the Shi'a."

Iraq has also seen an increase in general tourists, particularly from Europe and the USA, he said. "Iraq has been steeped in history for millions of years with sites such as the Hanging Gardens of Babylon."

Tareq said Iraq was now a safe country to visit; hotels were dropping the heavy security they once had as it was considered a "waste of money". ▲

"As we all know, Iraq used to always be in the news for all the wrong reasons, but we really would not be promoting the country if it was not safe," he said.

The country is also developing more hotels to meet travel demand. Setting the standard is the five-star Baron in the heart of Karbala and near the holy shrines of Hazrat Imam Al-Hussain and Hazrat Imam Al-Abbas.

Imtiaz Muslim, vice-president and managing director of Dreshak Group, describes it as "one of the best hotels in the country as well as the region." He added: "Other hotels across Iraq are being developed, including in Baghdad – a city with great nightlife."

Tourism comes in all forms and that includes medical tourism and spa retreats. And while the Middle East and North Africa have many good facilities, Middle Eastern tourists like to head to the cooler climes of Europe, especially in summer.

Among their options is **Poland**, currently promoting its 49 health resorts.

"Medical tourism develops dynamically," said Mariusz Arent, chief executive of the Proturmed Foundation and a Polish Tourism Organisation representative.

"In 2018, Poland received 182,000 foreign patients who came over for either dentistry, cosmetic surgery or plastic surgery. Foreign patients choose Poland due to professionalism of our medics and staff, as well as competitive prices. Even during the pandemic, this tourism sector was popular."

Asked why Middle Eastern travellers would choose a Polish clinic over their own, Arent said: "While the Middle East has these facilities, they're not as established as ones in Europe or the USA. Turkey offers good medical tourism as its government strongly supports it – like in Poland."

Comfort while recuperating away from the "stifling" weather of the Middle East is also a draw. With its mountains, forests, urban sanctuaries and natural-healing hot springs, Poland "is perfect for the Middle East patient or tourist." ▲

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Osama Nawayseh

Can you tell me about Vision-Box?

Vision-Box is a world leader in biometric seamless travel, automated border management and electronic identity management solutions. We are a multinational company, with our technology in more than 100 airports worldwide. More than one billion people use our digital identity solutions.

Vision-Box is responsible for the most relevant advances in the use of biometrics, allowing for a streamlined passenger experience and increased efficiency of public services to ensure safety, security and performance.

Headquartered in Lisbon, Portugal, we have 12 offices around the world including the UAE, UK, USA, and India.

Contactless biometric-based technologies are key. Why?

Airlines can enhance their passenger experience with the introduction of biometric and contactless technologies at check-in desks, lounges and gates.

Once you opt into the biometric and contactless path, you are no longer required to exchange any physical travel documents. Your face becomes your passport or boarding pass. You simply show your face to the smart device for identification to get cleared at the respective touch point. Immigration procedures can take as little as 10 seconds. This helps fast-track passengers and manage the crowd.

Today, if you are flying on Emirates, you can walk into Terminal 3 at Dubai International Airport and have a seamless experience from check-in to boarding – eliminating the need for physical contact and reducing queue times.

Where are Vision-Box contactless technologies in the Middle East?

Emirates and Vision-Box reaffirmed their mutual commitment by signing a long-term agreement to deploy and advance a digital shift in passenger operations at Dubai airport and beyond, aimed at keeping travellers and staff safe using the technology I mentioned beforehand.

The collaboration with Emirates is the result of a successful four-year trial of digital identification technology when a leading airline selected Vision-Box as the key technology provider and partner for a One-ID end-to-end biometric solution that complies with all international security and privacy standards.

We are also working in Qatar and Bahrain with

Marcelle Nethersole
speaks to the Middle East sales manager of Vision-Box.

border control smart gates and in the Kingdom of Saudi Arabia across multiple airports, providing border control smart gates, security check points and boarding gates in addition to seamless technology at Aramco.

How do you see the future of technology at airports?

The airport of the future will be powered by biometric and contactless technologies that prioritise the passenger experience through minimal interventions.

It is far too cumbersome and expensive to continue to expand airports indefinitely.

Instead we can optimise the processes within existing infrastructure and create an efficient system.

What technology is next for Vision-Box?

In June, we launched the Seamless Kiosk – The New Generation of Biometric Technology.

It has been developed to provide an exceptional user experience through its biometric and biographic capture performance, increasing the passenger handling process speed with an accessible design and a smart passenger guide system.

It's based on artificial intelligence (AI) that better helps any user follow the instructions intuitively with a new immersive camera system.

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

My day is often defined by scouting new opportunities for growth and expansion in the Middle East region as well as overseeing ongoing and imminent projects.

At Vision-Box we are a people-orientated company and place a high emphasis on staff collaboration, so it is common for us to connect and share new ideas with meetings throughout the day.

We encourage creativity and freedom among employees to present new ideas and solutions, but also to raise challenges and work together to overcome them.

PICTURE: VISION-BOX



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