



ARABIAN AEROSPACE

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

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AACO FACES UP TO THE BIG ISSUES

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Iran's door has always been open

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Riding the wave...

The rolling wave of success for business aviation in the Middle East may be flattening as the industry faces a whole series of challenges. Concerns are unlikely to dampen enthusiasm for the Middle East Business Aviation (MEBA) show at Dubai World Central in December, but the region's industry association is working hard to keep buoyant.

At the MEBA conference in Amman in October, which I was delighted to chair, we talked about the threat of pilot shortage; about reduced traffic because of conflict in the region; and of the lack of understanding by many regulators of the difference between the business aviation world and that of air transport.

One civil aviation authority that "gets it" is Jordan, and its CEO introduced a number of encouraging initiatives to tackle both the illegal charter market and training needs.

The conflicts in Syria, Iraq and Libya continue to take their toll and in this issue we look at how Arab nations have reacted to the call to arms.

The impact is also being felt by the air transport industry and the region's airlines will converge on Dubai in November for the AACO annual general meeting. We talk to the secretary general, Abdul Wahab Teffaha, about the challenges the national carriers are facing.

No company is being affected more than Iran Air and, in an exclusive interview with the Tehran carrier's CEO, we go behind the scenes to understand just what is happening there.



Turkey continues to surge forward and the country hosted a successful air show – but its industry grows amid claims of protectionism from nearby Jordan.

In the newspaper world we often talk about the "silly season" when it is usually quiet and real news is hard to find. We have just gone through that normally quiet period of summer and Ramadan and yet the MENA aerospace world has been busier than ever before, as this issue shows.

With new aircraft delivered, new events and new defence strategies it is time to fasten your seatbelts, we are riding the wave!

Safe landings.

Alan Peaford, editor-in-chief
Arabian Aerospace

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COVER: Abdul Wahab Teffaha, director general AACO - Picture by Billypix

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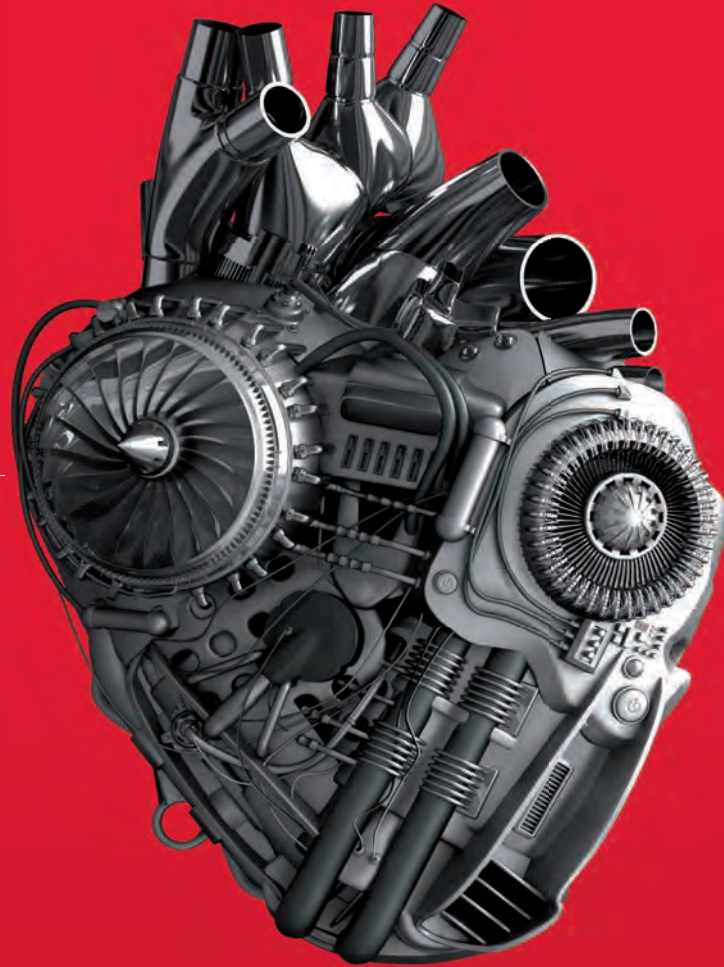
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It was show time in Istanbul for the Turkish Air Show where technology was taking centre stage.



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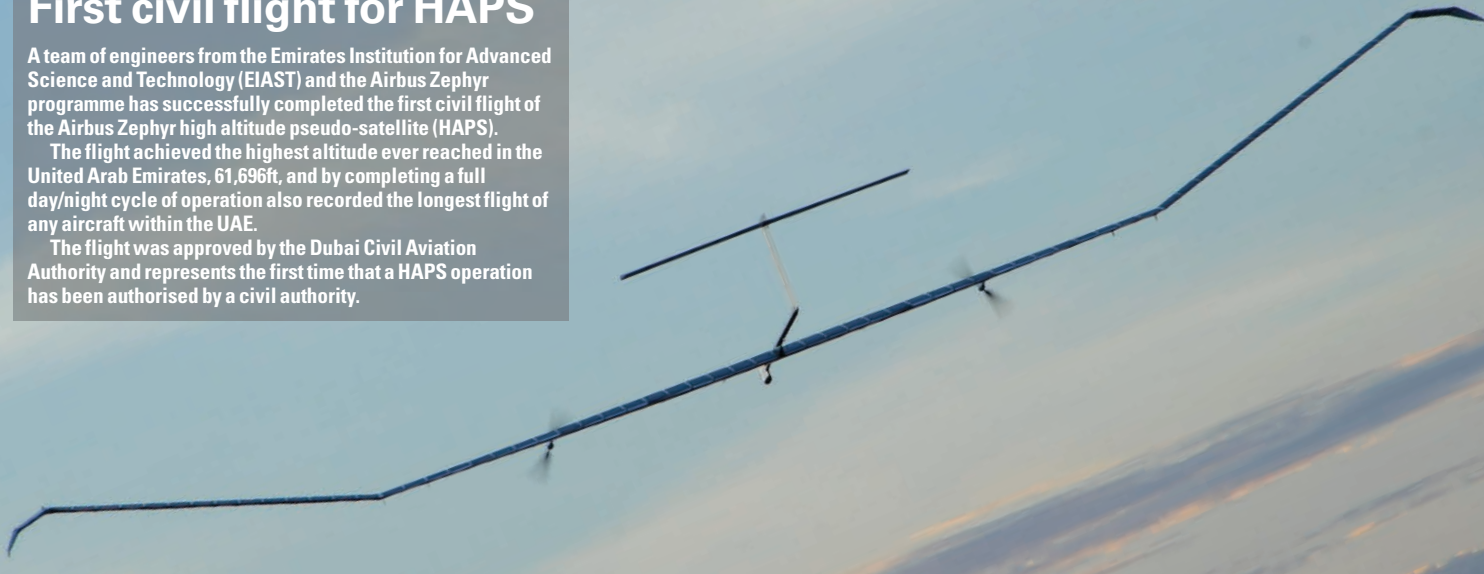


First civil flight for HAPS

A team of engineers from the Emirates Institution for Advanced Science and Technology (EIAST) and the Airbus Zephyr programme has successfully completed the first civil flight of the Airbus Zephyr high altitude pseudo-satellite (HAPS).

The flight achieved the highest altitude ever reached in the United Arab Emirates, 61,696ft, and by completing a full day/night cycle of operation also recorded the longest flight of any aircraft within the UAE.

The flight was approved by the Dubai Civil Aviation Authority and represents the first time that a HAPS operation has been authorised by a civil authority.



Ajman airport gets the go-ahead

The Crown Prince of Ajman, Sheikh Ammar bin Humaid Al Nuaimi, has cleared the way for Ajman's proposed airport to go ahead and be operational in 2018.

The project was originally launched in 2004 with plans to begin operations in 2006 but stalled. Then again it was launched in 2008 but was halted because of the global economic downturn that severely affected parts of the UAE.

Basic groundwork had already begun on the six million square metre site in the Al Manama area of the emirate – some 55km east of Ajman city.

It is planned to cater for up to a million passengers a year – primarily aiming at low-cost carriers and cargo operations – with plans for a minimum of 400,000 tonnes of freight per year. More than 60% of movements are likely to be freight.

TAI delivers first Bombardier C Series

Turkish Aerospace Industries delivered its first C Series fixed trailing edge

(FTE) to Bombardier at TAI's facilities in Ankara, Turkey in August.

The TAI-assembled FTE will be integrated into the wing in Belfast and delivered to the final assembly line in Montreal, Canada.

Once the programme reaches full rate production, TAI will support Bombardier wing assembly lines in Belfast by shipping ten FTEs per month.

Saudi air show postponed until 2015

The Saudi air show has been postponed until March 22-26 2015.

A statement released by the first Saudi International Civil Aviation Exhibition organisers said: "In an effort to secure high level royal patronage for the Saudi air show and, thus, dramatically increase VIP visits, the show has been postponed from November."

Etihad launches arrivals lounge

Etihad Airways opened a new arrivals lounge at Abu Dhabi International Airport – the first such facility to be

operated by the carrier anywhere in the world.

The lounge offers a stylish and modern environment for the exclusive use of the airline's first and business class guests.

Turkey receives third Peace Eagle

Turkey has taken delivery of its third Peace Eagle airborne early warning and control (AEW&C) aircraft from Boeing.

It was delivered at Konya Air Base, the fleet's main operating base.

Boeing is scheduled to deliver the fourth aircraft for the programme in 2015.

In addition to the four aircraft, the Peace Eagle programme includes ground support segments for mission crew training, mission support and system maintenance.

Abu Dhabi epic role

Abu Dhabi will be the start and finish of the first solar-powered flight around the world, which Bertrand Piccard and André Borschberg are planning to undertake in March 2015 with Solar Impulse 2 (Si2).



Done deal: Mohamad El-Hout (left) with Nasser Lozi.

Jordan and Lebanon crack the codeshare cost-saver

Royal Jordanian (RJ) and Middle East Airlines - Air Liban have concluded a new free sale codeshare agreement.

MEA chairman Mohamad El-Hout said: "This codeshare emanates from the deep and brotherly relationship between the Kingdom of Jordan and the Republic of Lebanon, as well as between Middle East Airlines and Royal Jordanian, whereby the two airlines, although members of different alliances, complement each other to develop further the existing cultural, business and tourist ties between the two countries."

Royal Jordanian has cancelled two of its four daily flights to Beirut. RJ's president, Nasser Lozi, said the re-routing of the service to avoid flying over Syrian airspace, had added to the cost of the route.

"The flight from Amman to Beirut now goes toward south Jordan, then into Egyptian airspace and over the Mediterranean Sea before landing in Beirut. As a result, the duration of the flight between Amman and Beirut increased from one hour to one hour and 45 minutes, both ways," Lozi said.



Emirates takes giant step to develop Angolan airline

Emirates airline is to work with the Republic of Angola to develop a "world-class" carrier.

The Dubai airline signed a concession agreement to take a role in the management of national carrier TAAG, which has the Angolan Government as a majority shareholder.

The agreement lays the foundation for both airlines to jointly leverage commercial opportunities in Africa and beyond.

The 10-year deal was signed by Emirates chairman Sheikh Ahmed bin Saeed Al Maktoum and Augusto da Silva Tomás, Angola's

Minister of Transport.

Emirates will not contribute equity under the agreement but will appoint four senior managers to work for TAAG.

The two airlines will cooperate across a wide range of areas, including bilateral code-sharing on cargo and passenger services, participation of customers in both airlines' frequent flyer programmes, and passenger and cargo handling.

Emirates has also committed to allocate its resources to staff and crew training on best-in-class business and operational processes and systems.

Dubai confident of 70m-passengers

The head of Dubai's aviation industry, Sheikh Ahmed bin Saeed Al Maktoum, president of DCAA, chairman of Dubai Airports and chief executive of Emirates Airline, said he is confident that, despite the three-month closure of one of Dubai International's two runways, the airport will hit its 70 million passenger target this year.

The resurfaced runways reopened on July 21 and Al Maktoum said: "We are confident about the airport handling more than 70 million passengers in 2014, which will bring us closer to becoming the world's number one airport for international passengers."

Ramco wins Falcon order

Ramco Systems, the global aviation software provider on cloud, mobile and tablets, has announced Middle East-based Falcon Aviation Services as its 65th aviation customer.

Captain Mahmoud Ismael, COO, Falcon Aviation Services, said: "From using multiple

disparate systems, we will be moving to a single integrated offering from Ramco. We are confident of improving our operational efficiency and enhancing the overall performance of our fleet."

Egypt training boost for Iraqi Airways

Maintenance engineers from Iraqi Airways have begun A320 training provided by the EgyptAir Training Center (ETC) – the training arm of the Egyptian carrier.

According to ETC, the course includes the latest training programmes in the field of aviation maintenance on the Airbus A320.

Iraqi Airways pilots have already been trained in EgyptAir Training Center on simulators using Airbus types A320/A330-340 and Boeing B777/B737-800.

Qatar's Vueling deal

Qatar Airways and Vueling have signed an interline agreement that will enable Qatar's five-star national airline to increase the number of passengers to Europe, while strengthening Vueling's hubs in Rome and Barcelona.



Little Engineer gets UAE's youth moving

The UAE's Ministry of Education and General Civil Aviation Authority (GCAA) has joined forces with Airbus Middle East to roll out a series of three-day robotics workshops.

Designed by The Little Engineer (TLE) in partnership with Airbus Middle East, the programme is designed to promote science and technology among the UAE's youth.

The Airbus TLE workshops focus on developing technical and soft skills in the fields of science and technology. They introduce students to key components, such as sensors and motors, enabling them to discover how machines operate in the real world. Students learn to be team players, working to reach a common goal by using their creativity and imagination to solve problems and celebrate their achievements.

Etihad completes AI Ain contact centre

Etihad Airways has completed the final phase in the development of its AI Ain contact centre facility. This brings to three the number of centres within the UAE, and a total of four worldwide. The centre will operate 24/7, with a desk capacity for 70 agents providing bilingual Arabic and English assistance to the airline's guests.

EASA certification for Challenger 350

Bombardier announced in September that the Challenger 350 aircraft has received full type certification from the European Aviation Safety Agency (EASA).

Speeches in safe hands

Richard Hill, COO at Etihad Airways, will deliver the opening keynote speech at the Flight Safety Foundation's 67th annual International Air Safety Summit, which is being held in Abu Dhabi from November 11-15.

Abdullah Al-Sayed, president and CEO at Nexus Flight Operations Services, will also give a keynote address.

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\$2bn AWACS modernisation

The US State Department has approved a possible foreign military sale (FMS) to Saudi Arabia for an airborne warning and control system (AWACS) modernisation programme and associated equipment, parts, training and logistical support.

The estimated cost is \$2 billion.

Saudi Arabia has requested a sale of five AWACS Block 40/45 mission computing upgrade systems, 20 next generation identification friend or foe (NG IFF) AN/UPX-40, communication equipment, provisioning, spare and repair parts, support equipment, mission planning system, repair and return, publications and technical documentation, personnel training and training equipment, US Government and contractor logistics and technical support services, and other related elements of logistics and programme support.

Patriots set for Saudi role

Saudi Arabia has requested a US Patriot Air Defence System with PAC-3 enhancement and associated equipment, parts, training and logistical

Ethiad cadet pilots start training in Dublin



A group of 36 Etihad Airways UAE national cadet pilots have started a specialised aviation-training programme in Dublin, Ireland.

The programme, at College Ireland Aviation Services in Weston Airport, will provide aviation-focused English language training to 36 cadet pilots. During the three-month course the cadet pilots will also be living with Irish host families.

Ray Gammell, Etihad Airways' chief people and performance officer, said: "Etihad Airways continually identifies world-class training and education opportunities to develop our aviation professionals. This partnership with College Ireland Aviation Services will help to grow and empower our Emirati cadet pilots, who will play an important role in our business."

support for an estimated cost of \$1.750 billion.

The order consists of 202 Patriot advanced capability (PAC), three missiles with containers and one guidance enhanced missile (GEM) flight test target/Patriot as a target.

Royal Jordanian lives the Dreamliner

Royal Jordanian is operating the Boeing 787 Dreamliner after receiving its first of the type in August.

The launch plays a central role in the Amman-based airline's strategic plan for fleet modernisation.

The airline acquired the aircraft through leasing company AerCap.

"We are delighted to receive our first B787, which will not only revolutionise the in-flight experience for our

passengers but also help Royal Jordanian increase its competitiveness, both regionally and internationally," said Royal Jordanian CEO Nasser Lozi.

"Our decision to invest in this game-changing aircraft reflects our firm belief in its unrivalled capabilities and will allow us to offer passengers an unmatched level of comfort, on both short and long-haul flights."

Emirates signs Arik Air partnership deal

Emirates has signed a memorandum of understanding (MoU) with Nigerian airline Arik Air to develop and expand the existing commercial relationship and explore

further areas of cooperation, including seamless connectivity, with the potential of codeshare arrangements as passenger traffic flows mature.

Aircell rebrands as Gogo

Business aviation connectivity specialist, Aircell, has rebranded as Gogo Business Aviation.

"Gogo's mission is to advance aviation by connecting every aircraft with the most trusted communications services on and above our planet. Having our commercial and business aviation divisions share a brand will make more people aware of the full breadth of our business," said Michael Small, Gogo's president and CEO.

Sharjah signs up SITA for five years

Sharjah International Airport has selected SITA to provide its AirportConnect Open passenger processing technology for five more years. AirportConnect Open is the only platform capable of providing an integrated approach to common-use terminal equipment, common-use passenger processing systems and common-use self-service kiosks, hosted on one platform. This allows airlines to use any self-service kiosk, agent desk or gate position for passenger check-in, bag drop, and boarding.

SITA is supplying 230 workstations for check-in and boarding, double the airport's number when it first introduced common-use.

Well connected

Etihad Airways reached a milestone with the deployment of mobile and internet connectivity across its entire fleet of 24 Boeing 777 passenger aircraft.

Lucky 13 for BA

British Airways' line maintenance has won the contract to provide technical handling for Qatar Airways' 787 flights to Edinburgh. This brings the number of airports where BA supports the Gulf carrier to 13.

Egyptians on display at Malta

Aircraft from the Egyptian Air Force drew in the crowds at the Malta Airshow when they formed part of a display of more than 100 aircraft from 10 different countries.

Egypt chose to participate at the show by displaying a K-8E training aircraft and a C-130H transport aircraft.

Flying all the way from Alexandria and night stopping in Heraklion, the K-8 was prominently displayed with a range of weaponry normally fitted on this aircraft while flying training missions.

Egyptian flight crew members enjoyed showing off their aircraft, while having friendly chats with the public and handing out caps and posters.





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Airways Aviation buys AFT

The Airways Aviation Group, which has offices in Dubai, Amman and Beirut, has announced the acquisition of the renowned Coventry UK-based Atlantic Flight Training (AFT) from its Jordanian neighbour, Ayla Aviation Academy.

The expanded group now boasts bases in Coventry and Bournemouth in the UK, the Gold Coast and Caloundra in Australia, and Podgorica in Montenegro, along with first-class facilities in Aqaba, Jordan via the continuing strategic partnership with Ayla.

It is planning to introduce a rotary-wing training arm to its current fixed-wing operations at AFT.

Dubai plans for Airport Show 2015

The 15th edition of Airport Show will be held at the Dubai International Convention and Exhibition Centre from May 10-12.

Daniyal Qureshi, group exhibition director, Reed Exhibitions Middle East, organisers of Airport Show, said: "We are delighted about the show's progress over the years and the growth potential for next year's edition.

"Airport Show 2015 will be the strongest on several fronts and will deliver the global expertise and innovation that the region's aviation leaders are looking to reflect in their mega-airport developments."

RAK manufacturer's cabin trainer deal

Ras Al Khaimah cabin trainer manufacturer, Spatial Composite Solutions, has been awarded a \$14million contract by the UAE's national airline, Etihad, to build and deliver 14 cabin

Air BP completes first fuelling at HeliDubai Festival City



Air BP continues to grow its business in the Middle East with the successful inauguration of its first off-airport site in the region.

The new location, at the HeliDubai Festival City (DFC) heli-pad, was the venue for the test refuelling of HeliDubai's Augusta 109 by the Air BP operations team.

Following the successful test, complete control of HeliDubai's fuelling operations was handed over as it became the first Air BP customer in the Middle East to sign up to the operations manual for external general aviation (OMEGA) fuel-handling programme.



Qatar's first A380 heads to London

Qatar Airways began revenue flights on its first A380 in October with its maiden flight to London. This is the first of its 10 on order.

It will accommodate a total of 517 people – 461 in economy, 48 in business and eight in first class, featuring what it claims are the widest first-class seats in the industry.

The aircraft has two full-length passenger decks. First and business class cabins will both be located on the upper deck, along with a special lounge area for premium passengers.

trainers.

The crew training devices cover both Airbus A380 and Boeing 787 Dreamliner models and will be installed at the new Etihad Innovation Training Academy in Abu Dhabi.

Morocco airport upgrades scanner

Smiths Detection has been awarded a contract by the Moroccan Civil Aviation Authority (ONDA) to install a revolutionary high-speed hold baggage explosives detection system.

The HiScan 10080 XCT will go into the new passenger terminal at Marrakech's Menara Airport. It provides screening of up to 1,800 bags per hour.

Qatar Airways' piece of eight

Qatar Airways has signed for eight more Airbus A320s, according to the latest numbers released by the European manufacturer.

In the same set of figures it was shown that Air Algerie has ordered three Airbus A330-200s.

RJ wings it in New York

A Royal Jordanian (RJ) flight to New York was involved in an incident at JFK Airport when the Airbus A340 aircraft – Flight 261 from Amman to New York – had a minor collision. The aircraft's wing hit the tail of a plane belonging to Delta Airlines.

In a statement, the Jordanian carrier said: "All aircraft are usually guided upon touchdown by the control tower toward the gates where they are finally meant to park."

WSP wins Oman contract

WSP has been appointed by international contractor, J&P Overseas Ltd, to work on two major airport facilities in Oman. WSP is providing detailed design on maintenance and cargo facilities at Muscat Airport and a cargo facility at Salalah Airport.

The Muscat maintenance hangar is sized to accommodate an Airbus A380 and two code C aircraft simultaneously.

WSP is providing civil, structural, building services and specialist support services including fire, acoustics and security.

Etihad scheme for Emirati trainees

Etihad Airways has welcomed the first class of Emirati trainees to its graduate finance development programme, the latest scheme to be launched as part of the airline's growing UAE national development efforts.

The programme, launched in partnership with Phoenix Financial Training, will aim at developing and preparing UAE nationals for a rewarding career in financial accounting in the aviation industry.

Thales wins Saudi National Guard deal

Thales has been awarded a foreign military sales (FMS) contract by the US Air Force to provide the Saudi Arabia National Guard with navigation aids and air traffic control tower equipment.

The technology will support visual and instrument flight rules for fixed and rotary-wing aircraft at two new Saudi Arabian airfields – Khashm al-An, east of Riyadh, and Dirab, south west of Riyadh.

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Qatar Airways a step closer to A350

The world's latest generation commercial airliner, the A350-900, received its type certification from the European Aviation Safety Agency (EASA) on September 30. The certified aircraft is powered by Rolls-Royce Trent XWB engines. Federal Aviation Administration (FAA) certification will follow shortly.

This opens the way towards first delivery to launch customer Qatar Airways on schedule for entry into service before the year-end.

Gulf Air launches on-board channel

Gulf Air has launched a new on-board channel called 'Helwa Ya Bahrain' that will showcase Bahraini productions and will feature the popular TV show Sawalef Tafash and Bahrain Health, a programme with a variety of instructional features, including a first aid video on CPR procedures that was produced by RCSI Bahrain.

Afghanistan deal

MD Helicopters has been awarded a contract for the integration, testing, procurement, modification



Qatar first in for new Gulfstream family

Qatar Executive is to be one of the launch customers for the new Gulfstream G500/G600 family of business jets, which was introduced in October. Qatar Airways has signed a memorandum of understanding (MoU) for up to 20 Gulfstream aircraft, including firm orders and options for the all-new, wide-cabin G500 and the flagship G650ER.

Previously, Qatar Executive had been an exclusive Bombardier operator.

The first flight of the G500 is scheduled for 2015 and Gulfstream expects to receive type certification from the Federal Aviation Authority (FAA) and European Aviation Safety Agency (EASA) in 2017.

and installation of a weapon system on to Afghanistan's 17 MD 530F helicopters.

Play it again MEBAA

Reflecting the growing importance of North Africa as a business aviation base, the Middle East and North Africa Business Aviation Association is hosting its first dedicated event for North Africa, the MEBAA Morocco show, in September 2015.

San Marino boost

San Marino has ratified the Cape Town Convention, which will give banks and

financial institutions greater confidence in financing aircraft under the registry. The agreement begins on January 1, 2015.

Training boost for Abu Dhabi

FlightSafety International and Abu Dhabi Aviation have signed a memorandum of understanding to establish a world-class learning centre in Abu Dhabi in a move that FlightSafety president & CEO Bruce Whitman described as "creating a new standard of excellence for aviation training in the Middle East."

The first phase of the centre is scheduled to open in September 2015 and will accommodate eight full flight simulators and feature classrooms equipped with advanced technology training systems.

It will offer training for a wide variety of helicopters and fixed-wing aircraft and serve operators of business, commercial and military aircraft. Phase two will increase the overall size of the complex by 6,800 square meters, and the number of flight simulators to 17.

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Wyvern joins Nexus family

Aviation risk management and safety auditing company Wyvern Consulting has become part of the Saudi Arabian-based Nexus group through its US subsidiary Nexus Services America.

Perfect Ten for Titan

Dubai-based Titan Aviation, is marking its 10th year of operations by adding new aircraft to its existing fleet of privately managed aircraft. The company has inducted a Hawker 900XP, Learjet 60XR and Embraer Legacy 650 to the managed fleet.

Turkish rings for SITA

Turkish Airlines has selected SITA, to provide telecommunications services for 120 outstations around the world in a multi-million dollar renewal deal. SITA will act as the airline's sole network services provider globally for seven more years, connecting the airline's outstations, departure control systems and passenger service systems to facilitate efficient passenger processing and on-time departures.



Emirates SkyCargo keeps its cool

Emirates SkyCargo has launched an internally developed and cost-effective LD3 container that keeps temperature-sensitive cargo cool when transported on the ground and in the air.

Called the 'white container', it's the latest addition to Emirates SkyCargo's cool chain portfolio, and has been designed specifically as an intermediate temperature control solution, which is ideal for generic healthcare products and food perishables.

The inside of the container is coated with thermal insulators, which prevents outside heat being transferred into it. The container also uses coolant trays, allowing handlers to add or replenish dry ice or coolants without disturbing the packaging.



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*Member airlines will have plenty on their mind as the Arab Air Carriers Organisation (AACO) convenes its annual meeting in Dubai this November. Secretary general Abdul Wahab Teffaha discusses the big issues with **Martin Rivers**.*

CORRIDORS OF UNCERTAINTY

Whatever AACO's executive committee was planning for this year's annual general meeting (AGM), their agenda has been torn asunder by two catastrophic events still gripping the airline industry.

Malaysia Airlines cruelly bore the brunt of both disasters – the loss, literally, of MH370 in March, and the shooting down of MH17 in July – but all aviation stakeholders now face the grave responsibility of plugging safety gaps and improving regulatory protocols. No region is more burdened with this collective duty than the Middle East, whose fast-expanding airlines operate in the most volatile of neighbourhoods.

At the same time, though, more familiar concerns still weigh heavily on the region's airlines. In European capitals, increasingly protectionist measures are being called on to fight Gulf competition; in Arab capitals, the 2004 Damascus Convention is falling well short of its promise to liberalise Middle Eastern skies.

For Abdul Wahab Teffaha, the long-standing secretary general of AACO, cramming everything into three days of meetings will be no easy task. But one starting point for the discussions, which begin on November 18, could be separating the commercial interests of AACO's members from the overarching responsibilities of regional governments.

"We cannot deny the sovereignty of countries to rule their airspace. This is one of the fundamental pillars of the Chicago Convention," Teffaha said, diving headfirst into the

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debate over aviation security in conflict zones. "Airspace is part and parcel of the sovereignty of countries."

Although the precise circumstances of the MH17 disaster are contested by some, there is widespread acceptance that, on July 17, the aircraft was downed by a surface-to-air missile fired from rebel-held territory in eastern Ukraine.

MH17's pilots were flying through a busy commercial air corridor not subject to restrictions, operating in full compliance with international law and placing faith in the safety assessments of Ukraine's aviation authorities. In hindsight, their blind trust now seems misguided. About 10 military aircraft had been shot down over the preceding weeks, and several Asian and European carriers were already avoiding the region's airspace.

Without seeking to apportion blame, it is apparent that the regulatory protocols, which allowed MH17 to embark on its fateful journey, were not mature enough to heed these warning signs. That situation, Teffaha said, cannot be allowed to recur; the bolts must be tightened.

"Perhaps – I don't know for sure – but perhaps, this whole tragedy could have been avoided," he speculated. "There is no fool-proof solution, but at least there are steps which stakeholders can take to improve the situation, and to minimise the risk of having such a tragedy happen again."

Exchange of information

"Governments are the ones that declare airspace unsafe. Associations like AACO will never be able to recommend that airlines use a certain corridor or not. However, what associations can do is promote exchange of information."

"What we lack today is a mechanism to exchange information about the perception of threat, and the level of risk that is viewed by one airline. Other airlines are entitled to have that information, in order to assess whether the threat is real or not."

Calling for "some sort of a central repository that would shoot out notices to airmen (NOTAMs) to all operators", he endorsed efforts by the International Civil Aviation Organisation (ICAO) and the International Air Transport Association (IATA) to reform airspace information sharing processes.

Together with other industry groups, ICAO and IATA have established a task force to investigate whether the current protocols, whereby airlines are essentially fed regurgitated intelligence assessment by their domestic civil aviation authorities, are fit for purpose.

In the case of MH17, this existing framework resulted in the same air corridor being deemed safe by Malaysia Airlines but dangerous by, for example, British Airways. Did Britain's intelligence agencies know something the Malaysians did not? ICAO and IATA must answer that question as they work towards a mechanism that collects, sanitises and disseminates classified intelligence reports.



It is apparent that the regulatory protocols, which allowed MH17 to embark on its fateful journey, were not mature enough to heed these warning signs. That situation cannot be allowed to recur; the bolts must be tightened.

ABDUL WAHAB TEFFAHA

"Airlines need to have full visibility of the information coming from any source, to be able to determine the level of risk," Teffaha reiterated. "I cannot say what kind of format this [new regulatory landscape] has to take. I'm sure IATA is capable of doing this if they have the mandate."

It may well be true that, blindsided by the prospect of over-flight revenues, Ukrainian authorities threw caution to the wind and left their airspace open, despite the clear and present danger of missile attacks.

Similar conflicts of interest could conceivably arise in war-ravaged Middle Eastern nations. Such concerns were likely to have motivated the decision by Sir Tim Clark, president of Emirates Airline and chairman of this year's AGM, to swiftly re-route his European flights away from Iraqi airspace in July.

MH17 was struck by an advanced BUK missile system while flying at 33,000 feet. Could the ultra-extremist terror group IS pose a comparable threat to aircraft at cruising altitude?

"Iraqi airspace is under the sovereignty of Iraq, so Iraq must declare its airspace open or closed," Teffaha responded. "For all intents and purposes, they have not closed their airspace. Some airlines decided on their own that they want to avoid it. That's their decision. AACO would not interfere with that."

Instead of worrying about governmental protocols that fall outside the industry's purview, Teffaha is focusing on tangible, actionable measures that will improve information sharing between airlines. AACO, therefore, supports ICAO and IATA in their on-going efforts.

Exchange of information

Just as the murder of 298 civilians in eastern Europe has propelled the industry to act, so another human tragedy that befell Malaysia Airlines this year is spurring calls for change.

On March 8, during a routine flight from Kuala Lumpur, Malaysia to Beijing, China MH370 seemingly disappeared into thin air. Some 239 passengers and crew, all now presumed dead, were aboard the Boeing 777-200ER – the same aircraft type that would later fall out of the sky in Ukraine.

Although "human intervention" was initially suspected, no wreckage has been found and the location of the oceanic crash site remains disputed. The aircraft quite simply vanished.

"It's extremely frustrating. It's already been six months and there is absolutely nothing to indicate what was the cause of this disappearance," Teffaha sighed. "Unless you believe in aliens or

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cross-dimensional universes, then it's really important we solve this mystery."

The investigation immediately focused on a series of automatic pings broadcast by MH370 in its final hours. Based on an experimental type of analysis by British satellite firm Inmarsat, investigators were able to map two arcs – indicating the radius of possible crash sites – that stretched from the aircraft's last known location to Kazakhstan in the north and the Indian Ocean in the south. Further analysis of the satellite handshake data appeared to rule out the northern trajectory.

At the time of writing, the Australian Transport Safety Bureau, the agency overseeing the multinational search effort, voiced renewed optimism that three-dimensional mapping of the seabed would eventually locate the doomed jet. Search vessels have been methodically scouring a 23,000 square mile primary area.

But, irrespective of these on-going efforts, the loss of a wide-body aircraft carrying hundreds of passengers is an unforgivable stain on the industry's reputation. In response, ICAO and IATA have again set up a task force to evaluate mandatory real-time flight tracking solutions – something that AACO is throwing its weight behind, with one caveat.

"Nowadays, any individual can be tracked through his mobile phone, so it's really amazing that this technology is not being used and enforced [in the airline industry]," Teffaha said. "We should not wait until governments agree on something. I believe if we work together with governments, other stakeholders, manufacturers and technology providers, we can move this at a faster pace."

Competitive analyses

Despite insisting that cost is no obstacle, Teffaha urged IATA to conduct detailed competitive analyses of the more than 30 proposals it has received from flight monitoring companies. Industry-agreed standards must extend to a wide range of manufacturers, he stressed, in order to "make sure that certain stakeholders will not take advantage of the situation".

"My heart goes out to the families of the disappeared ones. Just imagine being in their shoes," the secretary general added. "This tragedy should not be repeated, and it should not be forgotten."

Amid all the talk of catastrophic hull losses, it is easy to forget that AACO already had its hands full with more mundane – but nonetheless pernicious – regulatory problems. Europe, as always, will feature prominently at the AGM.

Global carriers scored a significant victory in April, when the European Union (EU) extended until the end of 2016 the exemption of non-EU flights from its controversial emissions trading system (ETS).

Brussels had previously "stopped the clock" on overseas implementation of the green tax in 2012, buckling to threats of a global trade war. The new



Abdul Wahab Teffaha

After completing his postgraduate studies in socioeconomic development and political sociology, Teffaha joined AACO as an assistant tariff analyst and gradually rose through the ranks to become assistant secretary general in 1992.

He was promoted to secretary general in June 1996 and still serves the association in this capacity today.

Throughout his tenure at AACO, Teffaha's strategy has focused on the delivery of specific, measurable, attainable, relevant and time-bound goals for member airlines. He has spearheaded joint initiatives in the fields of distribution, ground handling, fuel, training and maintenance.

Teffaha also leads AACO on all industry-related issues.

implementation date coincides with the deadline for IATA to finalise details of its own market-based carbon offsetting mechanism.

But other worrying signs are emerging from the continent. Last year, the European Commission published a consultation paper advocating the resurrection of Regulation 868/2004. That legislation was originally designed to shield European carriers from alleged "subsidisation and unfair pricing practices" by foreign rivals, but was never implemented due to the difficulty of proving malpractice. It could now make a comeback.

"We see a lot of protectionist ideas in this consultation paper. We have made our feelings known to the EU," Teffaha said. "It's not only the Arab world which is concerned with this consultation paper.

"These ideas would be putting the EU in a place where it will be confronting the sovereignty of other countries. There is no legal entity in the world that holds the moral high ground for aviation, and can give itself the right to dictate to others what to do. We hope that these ideas do not become part of the revamped 868. I am sure that regulators will see reason not to create an unnecessary dispute with other countries."

A new investigation by the European Commission into foreign aviation investments – including Etihad Airways' 33% stake in Switzerland's Darwin Airline – also risks becoming politicised. Regulation 1008/2008 prohibits foreign entities from wielding "effective control" over EU air operators, but defining such control is a subjective process.

Economic role for aviation

And traffic rights are yet another bugbear for AACO. Teffaha dismissed EU complaints about capacity dumping as grossly exaggerated, noting that Arab airlines account for less than 4% of overall seat capacity in Europe. Accusing European carriers of scapegoating Gulf rivals, the secretary general said their problems are "home-grown" and that conditions will improve if EU capitals "embrace an active economic role for aviation, rather than taxing it".

"The malaise in Europe is because of certain policies that are employed by governments," he continued. "The only thing Arab airlines are doing is following in the footsteps of KLM, Air France, Swissair, Lufthansa, British Airways, and many, many more. They use their main base as a hub for international travel. They created that model, and we are following in their footsteps."

Likewise, Europe's success in creating continent-wide open skies is another positive example for the Middle East to follow, though on this front expectations are muted. Despite laying down the framework for liberalisation in the Arab world, the 2004 Damascus Convention has yet to usher in significant change.

The convention came into force in 2007 after being ratified by eight states – Jordan, Lebanon, Morocco, Oman, Palestine, Syria, Yemen and the

UAE – but there have been few noteworthy developments ever since. Bilateral restrictions remain the norm in the Arab world, particularly where local airlines are ill-equipped to fend off regional competition. For this reason, AACO mainly sees the convention as a “template” or “moral tool” that can guide states along the path of liberalisation.

Teffaha praised those countries that have made open skies declarations, singling out the UAE, Qatar, Kuwait, Oman and Bahrain. Other states are experimenting with measures that go beyond the convention, he noted, citing Saudi Arabia’s decision to allow foreign ownership of new operators.

Regulatory reform is always a major theme at AACO annual meetings, and this year will be no different. As the fastest-growing aviation market on the planet, the Middle East needs to ensure that its processes and protocols are maturing in step with its traffic growth. The benefits of deregulation, liberalisation and harmonised air traffic management must not be overlooked.

But, in a year dominated by two heart-wrenching wide-body disasters, AACO’s 47th AGM will prioritise more urgent matters. Preventing any recurrence of MH17 and MH370 is the highest form of respect the industry can pay to the 537 victims.

Teffaha’s talking points

■ AVIATION SECURITY:

“It is high time now that we have some kind of system for exchanging information in real-time; information which can enable airlines to decide by themselves whether they want to fly over certain airspace, or avoid it – irrespective of their governments’ official positions. The first step that was taken by IATA and ICAO is definitely in the right direction, but there needs to be more industry-led movement.”

■ ARAB LIBERALISATION:

“The Damascus Convention represents a moral obligation to states, [showing them] that this is where the region is heading. We are much better off trying to expand the potential of the region, rather than laying down obstacles to market access and strangling the market for short-term gain. The future is liberalisation.”

■ EUROPEAN RELATIONS:

“Being neighbours, the norm is to be cooperative. There are hiccups, of course, but I am sure that wisdom will prevail. Europe and the Middle East have a lot of things to exchange – we are exchanging cultures, we are exchanging trade – so there is more to gain from being close, rather than from employing short-sighted policies. If the wings of the Middle East’s expanding airlines are clipped, how will that benefit Europe?”



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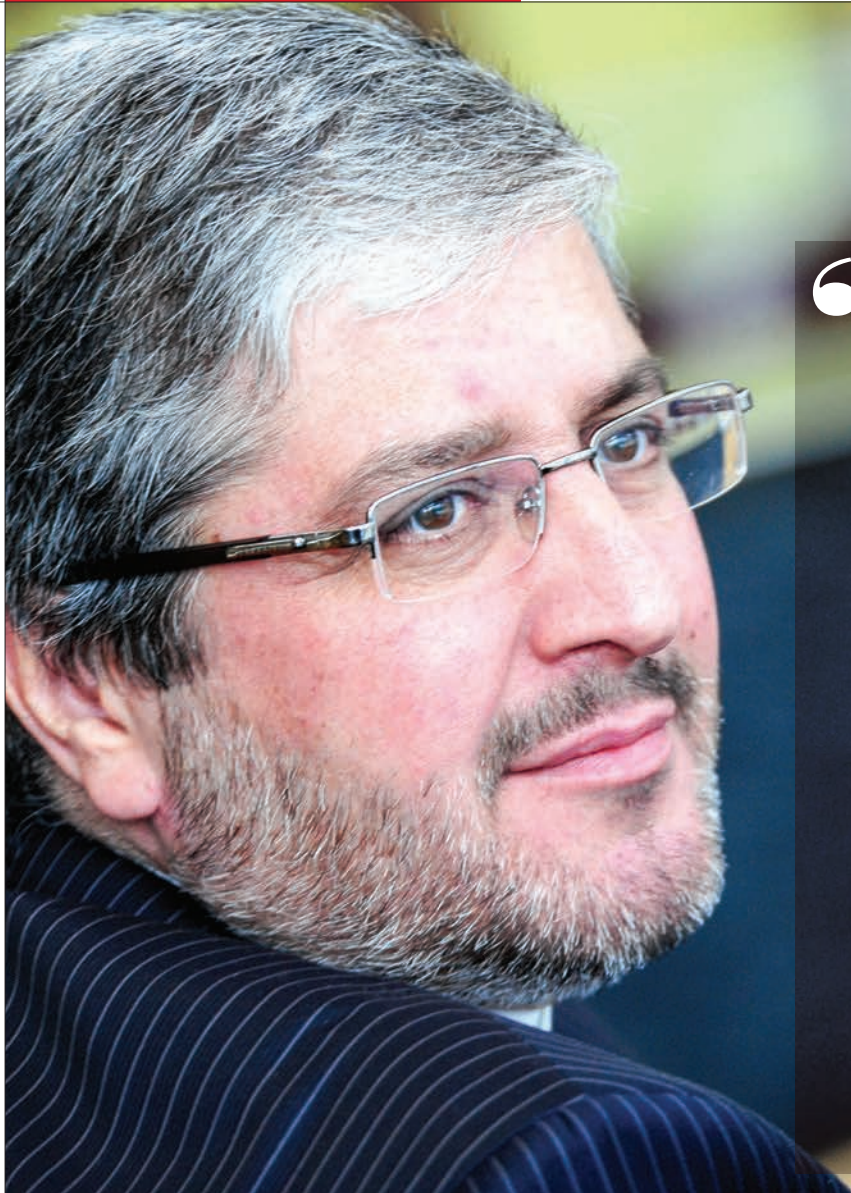
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‘Iran’s door was always open. Now it’s more open.’

With the deadline for a political deal between Tehran and Washington looming, Iran Air chairman Farhad Parvaresh gives Martin Rivers his take on the Geneva agreement.

On November 24 2014, exactly one year after the signing of the historic Geneva Interim Agreement on Iran’s nuclear ambitions, talks between Tehran and the P5+1 countries (America, Russia, China, the United Kingdom, France and Germany) will formally come to a close.

The dream of a comprehensive deal that normalises relations between Iran and the west still faces immense challenges, weighed down as it is by three decades of open hostilities. Public opinion on both sides remains divided and the backdrop of a deepening security crisis in the Middle East has injected new complexities.

The original, mutually postponed deadline of July 20 passed without apparent progress.

But, if rapprochement prevails, Iranian president Hassan Rouhani and US president Barack Obama will leave a legacy of renewed economic cooperation between the two countries. Iran’s civil aviation sector and America’s aerospace manufacturing industries stand to be among the main beneficiaries.

Iran Air, the Islamic Republic’s 68-year-old flag-carrier, has already enjoyed a tantalising taste of normalisation.

On January 20, the implementation of the Geneva agreement began six months of temporary sanctions relief targeted at specific Iranian sectors, including civil aviation. The relief was later extended by four months. Western spare parts suppliers and maintenance, repair and overhaul (MRO) firms – long prohibited from doing business with Iran – were at liberty to initiate commercial discussions.

“The Geneva agreement approved exactly two sentences and two lines [with relevance to Iran’s aviation sector],” said Farhad Parvaresh, Iran Air’s chairman. “One was licensing parts related to safety; the other was licensing inspection for Iranian civil aviation where necessary.

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“I read one article saying that Iran Air pilots are military pilots from the Revolutionary Guard. We don’t have any pilots like that.”

FARHAD PARVARESH



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“Some MROs are now able to work under these special conditions, providing associated services related to what has been agreed, like transferring money, issuing airway bills, insurance for the parts, and so on.”

The development marked an extraordinary reversal of fortunes for Iran Air, which had previously been labelled a specially designated entity by America’s Office of Foreign Assets Control (OFAC), the government agency responsible for enforcing sanctions. Under this designation, western firms were blocked from selling or leasing aircraft, or even assisting with the repair of Iran Air’s ageing fleet. This, in turn, prompted suspicions that America was punishing Iranian civilians – particularly given the country’s above-average accident rate – and civil aviation became a rancorous subject in the stand-off with Washington.

For its part, OFAC maintained that obstructing the airworthiness of passenger jets was justifiable because Iran, allegedly, misappropriates its flag-carrier for military purposes – an accusation that Parvaresh vociferously denies.

“I read one article saying that Iran Air pilots are military pilots from the Revolutionary Guard (a branch of Iran’s military),” he recalled. “We don’t have any pilots like that. You can check the names. Some of our pilots have been with us for 20, 30 years, even before the [1979 Islamic] revolution. Many of them were trained in the US, so this [accusation] doesn’t make sense.”

Sanctions relief

In July, following the temporary extension of sanctions relief, US aircraft manufacturer Boeing confirmed that it had reached an agreement with Iran Air covering the “potential sale of certain goods and services related to the safety of flight”. These included spare parts, operating manuals, service bulletins and navigation charts.

Several other American and European companies have also secured temporary OFAC licences, including Connecticut-based engine manufacturer General Electric. But Parvaresh said that some firms “were not fast enough or could not provide enough documents” to process their applications during the window of opportunity. Others are likely waiting in the

wings, he conjectured, delaying formal approaches until a permanent solution to the sanctions issue is reached.

Mid-way through our interview, held on the sidelines of an industry conference, an executive from one of Europe’s largest spare parts suppliers approached Parvaresh to request a meeting in Tehran. “Of course. The door was always open; now it’s more open,” the Iran Air boss said with a smile.

While any form of sanctions relief is welcome news to the flag-carrier, significant day-to-day operational challenges persist. Western companies are still barred from re-fuelling its planes, for example, because the wording of the Geneva agreement focused solely on matters relating to the “safety of flight” and “safety-related inspections and repairs”.

If a more permanent deal is to be secured by November 24, Iran and the P5+1 countries will need to overcome differences of opinion about the permissible scale of Tehran’s uranium enrichment programme. Iran says its scientists are solely interested in peaceful energy production, while

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America fears a possible military component to the nuclear programme. Arbitration efforts by the International Atomic Energy Agency (IAEA), the world's nuclear watchdog, have yet to deliver a breakthrough. Unless Tehran and Washington can hammer out a compromise, the best short-term outcome for Iran Air could be another temporary extension.

"Some topics have been raised which, to our understanding, are not related to the talks," Parvaresh said, when asked to characterise how the negotiations have progressed.

He quickly added, however: "The information that I have is that the talks are going in a positive direction.

"I think all parties have some opposition – in Iran, in the US, and maybe some in Europe – but, in general, I think the majority of the people in Iran and the majority in the US are very much hopeful that the talks will end favourably."

Although it would be wrong to downplay the difficulty of reconciliation, the fact remains that both Iran and America would benefit immensely from ending their long-running animosity. Even setting aside the massive geopolitical spoils for Washington, commercial dealings alone would run to the tens of billions of dollars.

"We need at least 100 aircraft," Parvaresh confirmed, shifting the conversation on to Iran Air's long-overdue fleet renewal. "We have been a Boeing operator since before the Revolution and we are still a Boeing operator. There are many types of Boeing aircraft that would meet our demand."

Suitable aircraft

The chairman proceeded to rattle off a list of aircraft types under evaluation, singling out the 777 and 787 as the most suitable American-made models. He left open the possibility of a 747-8 order – something Boeing sorely needs, having sold just 120 of the type – describing it as a "suitable aircraft" which his pilots and engineers "would prefer to have".

Iran Air currently has nine older 747s. But he admitted that fuel efficiency is a concern with four-engine aircraft.

Among Airbus models, Parvaresh praised the A350 as being "a very suitable and good aircraft" for Iran Air's European network, while domestically he saw potential in adding more A320-family jets. The A350 "might also be good", he said, though feasibility studies have not been conducted.

Ali Reza Jahangirian, the head of Iran's Civil Aviation Authority (CAA), has talked up even grander, nationwide requirements. Speaking to the Tehran-based *Ettala'* newspaper in May, he said Iran "will be ready to buy 40 passenger planes every year for 10 years if sanctions are lifted".

Yet aircraft orders are not the only aviation-related benefits seen emanating from a political thaw; route development could also create lucrative opportunities for both sides.



“IATA is a non-governmental organisation which has been created by the airlines, and which is supposed to protect its members. We were expecting them to show more support for Iran Air. We have been a member for more than five decades.”

FARHAD PARVARESH

Since last year, Iranian media outlets have repeatedly suggested that flights between Tehran and New York – once a mainstay of Iran Air's network – could be on the horizon. Parvaresh said there is no question that Iran Air wants to restore its US routes, but he cautioned that progress will be contingent on external factors.

"Before our president attended the UN assembly in New York [in September 2013], he had a meeting with some Iranian people who live in the US," the chairman recalled. "There are many of them – about two million – and as American citizens, as green card holders, as students, they mentioned how they need a direct flight to Tehran. So our president said he is willing to do this, if the permission is there [from America's CAA].

"Beside Iran Air, there are two other airlines that have aircraft that can fly directly to the US – Iran Aseman and Mahan Air – so the potential is there. We have the capabilities and the demand. But I don't think it will happen in the near future."

Whereas Iran's CAA has already cleared US airlines to launch Iranian flights, Parvaresh predicted that political sensitivities could obstruct US authorities from reciprocating.

Potent symbol

But such considerations do not always have a counter-productive impact on the industry. Should Iran Air be allowed to place western aircraft orders, for example, the government in Tehran will have a potent symbol of how negotiating with Washington has improved the lives of ordinary Iranians – a message that is harder to convey in other sanctions-hit sectors like finance or energy. Likewise, the introduction of non-stop flights from New York will be an instant vote-winner among the Iranian diaspora in America.

Even so, when it comes to politics, Parvaresh believes lessons must be learned from Iran Air's recent history. "We have experienced sanctions in aviation and it does not work," he insisted. "Civil aviation carries innocent people from all nationalities. This industry should be free of politics."

The chairman also rebuked the International Air Transport Association (IATA), the airline industry's main trade body. In October 2011, IATA caved in to pressure from OFAC and suspended Iran Air from its clearing house, billing and settlement plan, and cargo accounts settlement systems.

"IATA is a non-governmental organisation which has been created by the airlines, and which is supposed to protect its members," Parvaresh concluded.

"We were expecting them to show more support for Iran Air. We have been a member for more than five decades.

"A united approach is needed to remove all the effects of political decisions from the industry. Today it was Iran's turn; tomorrow it will be somebody else's turn."



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*Respected aviation analyst
Saj Ahmad looks back 11
years and charts, from the
very beginning, the Etihad
success story.*

ETIHAD FOLLOWS ITS NOSE FOR BUSINESS...

Flicking through a calendar the summer of 2003, in the grand scheme of things, doesn't appear be that long ago when you think about it.

However, in the airline business, even 12 months can mean the difference between fighting for survival or looking ahead at your next phase of growth and profitability.

So, when the decree by Abu Dhabi to set up a new national airline in June 2003 was announced, the post 9/11 era was arguably sceptical of another new market entrant from the Middle East region – especially at a time when many full-service airlines around the world were re-evaluating their operations, downsizing and culling staff and overheads.

Welcome to the Etihad Airways story.

If there is one apt way to sum up Etihad, its history and performance, then the buzzword must be numbers.

From its inaugural flight to Beirut in November 2003, Etihad has become one of the world's fastest-growing full-service airlines. With more than 120 global destinations under its belt and nine more due to start in 2015, and with a fleet of more than 101 aircraft, Etihad's success is no fluke.

Its first profit – around \$14 million – was achieved in 2011. In 2012, this rocketed to \$42 million, a whopping 200% more than the previous year. In 2013 the figure was \$62 million on

revenues of \$6.1 billion, representing a 27% rise over its 2012 earnings.

It is evident that the financial discipline of Etihad has found maturity during the post-9/11 era and in the wake of the global financial crisis from 2008 onwards.

Navigating through two challenging periods within the space of just five or six years demonstrates the due diligence that the Etihad management team conducted to get beyond the tough times, stick to the game plan and deliver meaningful financial results on a consistent basis.

Fuel hedging strategy

Add in the backdrop of the record-breaking but crushing \$147 per barrel oil price of 2008, and Etihad equally demonstrated its prowess in its fuel hedging strategy that allowed it to expand, induct new jets and still offset the high oil price which, incidentally, killed off a string of poorly-run airlines like Skybus, MaxJet, EOS and others, while forcing many other operators to stand down jets and trim staff levels in a desperate bid to save money.

Neighbouring Qatar Airways became the first of the 'Arab big three' to enter an airline alliance by joining Oneworld. Over time, Qatar Airways will be able to leverage the strength of its Oneworld partners and connect passengers to destinations that would otherwise not have been on its immediate radar.

Down the road in Dubai, Emirates has opted to use its financial muscle and Goliath-like size to expand organically.

Utilising a vast (wide-body-only) fleet of Boeing 777-300ERs and higher capacity Airbus A380-800s across its network, it is carrying and transferring passengers through its ever-busy airport, which by the end of the first quarter in 2015 will cement its place as the world's busiest international airport and stay in that prime spot for years to come (unless of course it is eclipsed by its sibling neighbour at Al-Maktoum International Airport at Dubai World Central).

These developments will not have gone unnoticed by Etihad.

CEO James Hogan is widely regarded as one of the best in the airline world and his deliberate and focused approach on expansion has always been to maximise the assets at hand to derive strength for the business, while delivering connectivity for customers.

In bringing this ethos to Etihad, Hogan has surely been aware that competition – wherever it takes place – can be as beneficial as it can be daunting.

Even before Etihad came into being, murmurs about the frenetic pace of Emirates' growth had caused a few airlines in Europe and Asia to rankle with worry. Dubai's government, under the wider auspices of the UAE Government, had developed a

Alitalia is such a poorly run airline that Etihad could only make its equity infusion work with a big chunk of the business stake in its hands in order to enable fundamental and wholesale changes to take place.



progressive aviation policy that has today centralised the country as a true global hub for one-stop connections to any city on Earth.

Critics and sceptics that worry about a mythical bubble-burst scenario fail to understand the logic and reasoning behind, not just the birth and existence of Etihad, but also its importance as part of the wider picture.

Remember that buzzword “numbers”?

A mere five-to-six hour flight radius beyond either Abu Dhabi or Dubai puts you under the umbrella of around 2.7 billion people. That’s more than a third of the Earth’s population.

In the same way that the runaway sales numbers for the Airbus A320neo and Boeing 737 MAX have taken the market by storm, airlines know that neither Airbus nor Boeing have the capacity, individually, to placate airline demands for new jets.

To this end, Dubai International Airport and Al-Maktoum International Airport will eventually have capacity to handle up to 250 million passengers a year between them. But they can’t handle every piece of traffic out there.

The royal decree in the summer of 2003 had a very decisive and clear vision and knew that setting up Etihad Airways would be a smart move, because the co-existence of competition is beneficial for the wider UAE. Dubai on its own could never fulfil demand when you have that

much human presence in such a short radius around the UAE.

More recently, with the decision to expand Abu Dhabi International Airport by creating the Midfield Terminal – a facility designed to cater for up to 20 million passengers a year – Etihad will have at its disposal a key piece of airport infrastructure.

This will help it cater for the continued rise in passenger traffic and seamlessly integrate it with its new generation of Airbus A350s, A380s, Boeing 787s and 777X aircraft, where it has combined orders and options for more than 300.

Standard-bearer

Looking back over the last 11 years it is evident that, while risk is an ever-present shadow in the airline industry, Etihad has not been afraid to become the standard-bearer in battle internationally.

After ditching its stake in Sri Lankan Airlines, Emirates has for now discarded any possibility of equity infusion anywhere else. More recently, Qatar Airways’ 35% stake of Cargolux was a union that lasted just 18 months before it was sold back to the Luxembourg Government.

Is Etihad afraid that its policy of buying minority stakes could backfire, like they had for its Arab neighbours?

Absolutely not.

Unlike the airlines in the USA, Asia or Europe that seem to spend a vast amount of time (and money) orchestrating a chorus of boring literary odes about how they can’t (or more likely won’t) compete with the fast-growing Arab big three, Etihad has – for all intents and purposes – put its money where its mouth is and invested in a string of airlines right across the globe.

Etihad’s Equity Alliance brings together direct financial investment in a string of airlines, while allowing the Abu Dhabi-based airline to coalesce these links into a hybrid-alliance format that hones in on a traditional alliance partnership while keeping a lid on costs between the parties involved.

Since 2011, Etihad has made some very big buys.

The first came with a 29% stake in Airberlin. Other equity stakes taken out by Etihad include Aer Lingus (4.9%), Air Serbia (49%), Air Seychelles (40%), Darwin Airline (34%, rebranded Etihad Regional), Jet Airways (24%), Virgin Australia (19%) and also in Alitalia (49%).

Aside from these direct investments, Etihad has strong codeshare pacts with around another 36 international airlines – nearly all of them top tier industry players in their own right.

The investment in Alitalia has

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been Etihad's biggest investment to date and is seen by many, including myself, as one of the most risky and challenging.

Like many European airlines saddled with high labour costs and an unwillingness to take the axe to parts of its loss-making business, Alitalia has been flying, almost literally, on air. Had Etihad not stepped in, then the collapse of the Italian airline would have been imminent.

Etihad has taken its time to finally get Airberlin to post some cash-positive earnings, but every investment it has made in differing airlines has with it a different set of problems that Etihad is working with its partners to overcome.

Alitalia is such a poorly-run airline that Etihad could only make its equity infusion work with a big chunk of the business stake in its hands in order to enable fundamental and wholesale changes to take place.

Investing €560 million (\$710 million) in Alitalia, while assisting in providing up to a further €900m in bank loans and debt restructuring, will alleviate near-term cash flow problems with a view to linking into Etihad's international network and leveraging its strength in contracts for airport and other procurement activities.

New routes

Etihad's purchase and lease back to Alitalia of five slots at Heathrow will further bolster the Italian carrier, thus enabling it to launch new routes from Milan and Rome.

Alitalia, for all its woes, has a significant transatlantic market presence that it relies on and Etihad will be keen to exploit and promote this as a way for Alitalia to become a more effective competitor.

Notwithstanding the potential ruling for Emirates on the Milan-New York run, Alitalia and Etihad will be able to provide customers from the USA with double connectivity in and out of Milan to Abu Dhabi and beyond – particularly to the southern hemisphere. This is important for Alitalia since it has next to no coverage or access to growing markets in Asia or beyond.

Given that Alitalia and Etihad have very little overlap, the potential synergies they can create from dual linkage using their current networks allows for good integration from a customer's perspective.

Etihad benefits from additional US traffic in both directions and does so without having to put up any extra capital outlay for this. In the same way, Alitalia can harness the Abu Dhabi-based traffic and use its big European network to fly passengers more effectively, given that it will complement and not compete with Etihad.

This reduction on competition will serve Alitalia well because it will help drive up system-wide economies of scale.

Etihad's stake in Darwin Airline (rebranded as Etihad Regional) can also feature in salvaging a core business for Alitalia. Etihad Regional had to withdraw from a number of routes from Rome

James Hogan faces the world media in Rome to announce plans for the Alitalia rescue.



Alitalia, for all its woes, has a significant transatlantic market presence that it relies on and Etihad will be keen to exploit and promote this as a way for Alitalia to become a more effective competitor.

and this vacated space would allow Alitalia to step in and reinstate services between Italian towns and cities.

These are money-spinning routes that have a large concentration of affluent travellers, often paying a premium price. It is this sort of high-yield traffic that Alitalia ultimately needs to focus on while establishing and developing links to Etihad's other European partners.

Alitalia has very little direct competition with Etihad Regional so, again, the potential for cooperation and cost reductions will feature heavily as Alitalia changes its business model.

Etihad, however, will have one eye on getting assimilation between Airberlin and Alitalia.

With Ryanair recently launching the high-capacity 737 MAX 200 and EasyJet firming up yet more A320neos, the competitive threat from low-cost carriers in Europe is pilfering traffic away from many legacy airlines.

Iberia has been a big struggling giant, although its connections to Vueling have helped stem the loss of traffic to other low-cost airlines.

Airberlin is finally starting to see green shoots of

recovery.

Etihad has been diligent in taking its time in changing the airline for the good and, while the investment and analyst world wants to see results "immediately", Airberlin's second quarter rise in income of €8.6 million (\$10.9 million) against a loss of €38 million (\$48 million) for the same period a year ago, proves that Etihad's strategy is working.

Once Airberlin and Etihad get their fleet of 787s, the immense fuel burn reduction and lower operational cost of the aircraft will slash costs in a way that no other jet in history has been able to do.

Other 787 operators like LOT Polish, Norwegian and Ethiopian Airlines, continuously laud the 787s financial boost to their businesses – Airberlin and Etihad will be looking for similar results, given the rapid and increased maturity of the 787 fleet now that it's been in service for around three years with dispatch reliability at or above 99% on average.

Second decade

On the surface, it does look like Etihad has a lot of its fingers in an array of different pies.

It is, however, pertinent to remember that this airline has only just started its second decade and will be operating the finest and best twin-engine jets by the time it reaches its 20th anniversary in 2023.

Remember that buzzword again?

Etihad's big numbers and its investments today will deliver the results and performance through its adept management team led by Hogan.

Etihad is not immune to risk. However, its dual organic and inorganic growth policy is complemented by a de-risked strategy, which pulls together partners in the Etihad Equity Alliance who collectively have the same aim in delivering strong financial results.

Rome wasn't built in a day. Etihad is aware of this.

Now it's time for the rest of the world to acknowledge Etihad's strategy too.

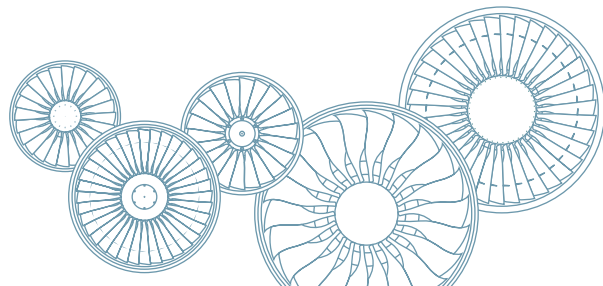


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Etihad takes the wraps off its new livery

UAE national carrier Etihad revealed a new corporate branding and livery to the world when its first A380 was rolled out at Airbus' Finkenwerder plant in Hamburg. Ian Sheppard was at the event.

The new Etihad livery sports a sober new look featuring brown and yellow shaded triangles intended to reflect desert landscapes and cultures.

On a windy evening at the dock-side plant, Etihad CEO James Hogan addressed VIP guests seated in a temporary stand opposite the Airbus paint hangar, saying: "We celebrate two significant milestones tonight; our first A380 and the official new corporate livery. Tonight is an important statement for Abu Dhabi."

Airbus president and CEO Fabrice Bregier told guests: "The new livery and corporate design looks just stunning. "Etihad was founded as recently as 2003 and is now a truly global force in the industry, famous for its revolutionary business model with a network of alliances."

Bregier told Hogan: "We look forward to delivering the first A380 to you before the end of the year.

"We will deliver a total of 10 A380s [to you] over the next three years and, in 2017, Etihad will receive one of the first A350-1000s."

The airline has already been inventive with liveries, having one of its Airbus A340s painted in a Formula 1 livery (it sponsors the Grand Prix in Abu Dhabi), and having an Airbus A330 painted in Manchester City Football Club colours (the team being owned by Abu Dhabi investors).

Inspired by desert landscapes

The new livery was created by brand consultants Landor Associates in partnership with Etihad. It is "inspired by traditional Emirati design patterns, the landscapes of the desert and the geometric shapes found in the modern architecture of Abu Dhabi".

The airline said it believed the result was a "unique livery design".

Named 'facets of Abu Dhabi' it "uses a colour palette which reflects the varying hues of landscape of the UAE, from the darker sands of Liwa to the lighter colours of the northern Emirates".

The design development involved researching options amongst Emiratis and international travellers to help select the 'winning' livery.

Etihad went on to say that the UAE national emblem is given prominence along the fuselage and the national flag is near the cockpit. The livery is a move away from using the national colours featured in the flag and, as such, makes Etihad more distinct from Emirates.

The roll-out came a few months after Etihad unveiled its new cabin interiors for the A380, which will enter service on the Abu Dhabi to London Heathrow service on December 27.

Hogan said four more A380s would join the fleet in 2015 and the other five in 2016-18. Those first two in 2015 would also service the Heathrow route, with New York and Sydney being the destinations for the fourth and fifth aircraft.

The airline's A380s and Boeing 787s will both feature the new design pattern, as will all its other corporate branding – lounges, brochures, uniforms etc. Re-painting the fleet of more than 100 aircraft will take time. "Within three years every aircraft in the fleet will wear the new colours," said Hogan.

Details of the Etihad A380 interior were first revealed at the Arabian Travel Market in Dubai earlier this year.

The Residence, by Etihad, will be located on the forward upper deck, complete with living room, separate double bedroom and en-suite shower room "making it the first three-room luxury suite in the history of commercial aviation", said the airline, which added that the one or two guests accommodated would have a personal butler trained by the Savoy Butler Academy in London.

The "Apartments" will be private suites with a separate reclining lounge seat and full-length bed.

"The A380 will be used to provide additional seats on existing routes where there is a need for increased capacity, and in particular, high demand for first and business class travel," said Etihad's chief commercial officer, Peter Baumgartner.

In late September, just after the corporate livery unveiling in Hamburg on its first A380, Etihad was in Seattle to celebrate the roll-out of its first 787-9 Dreamliner. It, too, has the airline's new "facets of Abu Dhabi" livery.

Etihad has firm orders for more than 100 Boeing wide-bodies, including 41 787-9s and 30 787-10s.

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Air power's big hand in Arabian ambitions

Evidence of the economic leverage imparted by aviation can be seen all over the Gulf, Air Arabia's CEO, Adel Ali, told the Arab Aviation and Media Summit in Ras Al Khaimah.

This year's conference – the fourth – discussed the symbiotic relationship between tourism and aviation, as well as its impact on the social and economic growth of the Arab world. "What was Dubai 30 years ago before Emirates Airline started?" asked Ali. Abu Dhabi and Doha had also seen a huge growth in economic influence that had marched hand-in-hand with the rise of Etihad and Qatar Airways respectively.

Even Sharjah – traditionally something of a backwater in the UAE – had experienced the benefits of airline power through Air Arabia, whose hub had transformed the previously slightly sleepy airport there over the past decade.

Aviation not only allowed people to fly but also drove economies, Ali told his audience.

The conference heard that there were two weaknesses in the Gulf aviation scene – a looming lack of skilled technical personnel and the rapidly growing problem of air traffic congestion.

"Throughout the Arab world we have a lot of PhD pilots, but what we don't have is a lot of engineers," said Ali.

Abdul Wahab Teffaha, secretary-general of the Arab Air Carriers Organization (AACO), took up that point in the conference's keynote address.

There had to be a change in the perception of Arab families about the careers they wanted their children to enter, he said. As in many western countries, there remained a prejudice against jobs that involved people getting their hands dirty. "We need families to start focusing

and not think, 'We want our child to be a doctor'. You want him to be a mechanic."

Teffaha gave an overview of the airline industry's strengths, weaknesses, opportunities and threats.

Strengths included the fortunate geographic position of the Middle East, which sat at the crossroads between Europe, Africa and Asia and had helped enable the major Gulf carriers to create their huge hubs.

The Middle East's culture of hospitality also gave the region's airlines and tourism facilities an edge over other regions of the world, where looking after travellers was regarded as no more than a job.

Finally, the attitude of Gulf governments that aviation was a boon and not a nuisance that should be heavily taxed, was a great strength compared to many other regions.

Substantial problems

As for weaknesses, Teffaha said that substantial problems remained with air traffic management in the Gulf: "This is our Achilles heel," he commented. "If it is not fixed we will not grow."

Measures to ease the situation were being introduced, said Hussein Dabbas, the International Air Transport Association (IATA) regional vice-president, Africa and Middle East. These included areas like reducing the separation between aircraft.

So should the process of improving ATC management become faster? "Yes, but at least it's going in the right direction," he said.

Earlier this year, a senior western air traffic control manager suggested that the technical problems behind air traffic congestion in the Gulf could be fixed in six months; what was far more difficult to solve was the reluctance of the

region's nations to cede control of their airspace to one or more regional ATC centres, whose remit would cross national boundaries.

Several speakers echoed Dabbas's comment that the ATC issue was being addressed, but not quickly enough. Dabbas asked what could be learned from the single European sky (SES) project, which also sought to ease the problems of heavily-fragmented air traffic regions. SES has been underway for years and progress has been slow. "With SES you're dealing with 28 sovereign countries. Air traffic management is never something that's going to be solved overnight; there are a lot of government jurisdictions to be tackled," he said.

"Eventually, the way out of the [Gulf's] problems will be a 'single sky' in the Arab world, but it's not going to be easy."

Other weaknesses, said Teffaha, included what he described as the "archaic regional regulatory regime", where some countries remained overly protective of their national carriers; and visa problems.

He noted that he had a Schengen area visa, valid for multiple entries over five years for most European nations, and a 10-year visa for the US. Why was a similar facility not available in the Arab world, he asked?

The reason given by some nations for not easing visa restrictions was security: "Well, it's not prevented trouble," he noted. "Visas are a problem and if we don't deal with that, they will be a hindrance to our growth."

As for airlines, he said that the IT and communications revolutions meant that physical borders between nations were collapsing and, with them, the concept of flag-carriers. This, he said, was where Air Arabia had been so successful, by building a brand that was not



Adel Ali: Even Sharjah – traditionally something of a backwater in the UAE – had experienced the benefits of airline power through Air Arabia, whose hub had transformed the previously slightly sleepy airport there over the past decade. Insets: Steve Rice (left) and Hussein Dabbas.

closely associated with an individual nation. “Brands will be the norm. Emirates, Etihad and Qatar Airways are not recognised as flag-carriers, they’re recognised as brands.”

He was critical of some – not all – European airlines and airports that claimed they were being harmed by the rapid expansion of Arabian Gulf carriers and airports. “This is protectionism. If you’re being harmed by competition, what you need to do is become more competitive, not more protectionist.

“Some European airlines complain about ‘subsidies’ to Arab airlines, but many of them have been subsidised for years.

“I feel some sympathy with European airlines because they are operating in an environment that is not favourable to them, created by their own governments. They need to go to their governments and say, ‘We need better infrastructure, better taxation policies and stop looking at us as a cash cow’.”

The tourism aspect of the conference focused partly on the host emirate’s attractions. Ras Al Khaimah, 20 years ago a remote and little-

frequented tourism location, is rapidly building hotel accommodation and is aiming for the ‘affordable luxury’ niche, said Steven Rice, CEO of the RAK Tourism & Development Authority.

Apart from Gulf nationals, the three nations that contribute most to RAK’s tourist industry were Russia, Germany and – some distance behind – the UK. Chinese tourists, who were already making their presence felt in Abu Dhabi and Dubai, were “clearly a future target”.

Boost inbound traffic

To boost inbound traffic, the promotion of the meetings, incentives, conferencing and exhibitions (MICE) sector was high on the emirate’s agenda. History, heritage and archaeological monuments formed another string to the emirate’s bow, together with the more traditional attractions of 65km of beach and what Rice described as its tranquil, relaxing atmosphere.

RAK International Airport is currently under-used but its 3760 metre runway makes it capable of accepting large, twin-aisle airliners and allows direct access for inbound tourists who want to

avoid the road transfer from Abu Dhabi or Dubai.

Several speakers were enthusiastic proponents of the theory that ‘If you build it, they will come’. If good facilities, good air connections and easy visa arrangements were put in place, they would attract tourists.

And, despite the proliferation of airlines in the region over the past decade or so, they had not cannibalised each other’s traffic. The ‘cake’ had grown, as more people were encouraged to fly.

“For people who had never flown, it’s become a normal way of travelling,” said Air Arabia’s Ali.

He said he would never forget an incident on the second day of the low-cost airline’s operations in 2003. He had bumped into an elderly lady getting out of a taxi outside the airline’s Sharjah HQ. She had travelled from Abu Dhabi because “they told me I could buy a ticket here to go back to Lebanon to see my family, who I’ve not seen for 15 years”.

That, he said, illustrated how airlines could draw in people who had never previously seen them as a mode of travel that they could use.

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Aftermath of the attack at Tripoli.

Tripoli terror confirms the Arab Spring has gone cold

In early 2012, shortly after Libyan dictator Muammar Gaddafi was overthrown by an alliance of tribal militias, Libyan Airlines chief executive Khaled Taynaz spoke to *Arabian Aerospace* about the prospects for the war-weary country and its well-developed civil aviation sector.

Though careful not to downplay the challenges ahead, Taynaz painted an overwhelmingly positive picture for the future. His mood matched the broader sentiment sweeping across the Middle East and north Africa during the Arab Spring.

Just two years on, however, events on the ground seem anything but upbeat. The revolutions that engulfed the region have largely evolved into new dictatorships or entrenched civil warfare; many of the militias that united against despots are now turning their guns on each other; and the worrisome security climate has struck fear in the hearts of western governments, which are now mobilising their own forces for potential conflict.

Painful though it may be to accept, the Arab Spring has simply not delivered on its promises. Many commentators would go further, describing it as an abject failure.

Yet the desire for self-determination, prosperity and peace lives on. There is still hope

The world watched in horror this summer as militias laid waste to Tripoli International Airport. With the capital and its gateway in new hands, the recovery effort got under way, as Martin Rivers reports.

that each country's own political machinations can slowly but surely deliver progress for Arab populations. Civil aviation, with its unique ability to promote freedom of movement, international trade and diplomatic cooperation, lies at the heart of such grand aspirations.

And that made it all the more depressing when, for six weeks this summer, Tripoli International Airport became the main battleground for control of the country.

Having initially been spared the kind of violence that has crippled Benghazi in the east, Tripoli erupted into an all-out war between the government-allied Zintan militia – until then

tasked with protecting the airport – and the Fajr Libya (Libya Dawn) alliance of mostly Islamist fighters hailing from Misrata.

"It came out of the blue. Nobody knew when the war is going to start," Taynaz, who is now chairman of Libyan Airlines, said shortly after the gateway and the rest of the capital fell under the control of Fajr Libya.

"When we first had the warning we made a quick response plan to evacuate the aircraft from the airport. But the time was too short. We tried, but people were evacuating from the airport so that they didn't get hit by missiles. It's better to save lives rather than save aeroplanes."

The assault on the airport was sustained and overwhelming. The first wave began on July 13, when shelling knocked out the air traffic control tower and damaged at least six aircraft. Sensing what was to come, the UN evacuated its staff and a Government spokesman urged "international forces" to intervene.

On July 20, another volley of missiles, mortars and anti-aircraft cannons struck terminal buildings and damaged more aircraft, including an Airbus A330-200 (5A-ONF) operated by Afriqiyah Airways, Libya's second flag-carrier, which was completely incinerated.

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The fighting raged on for another month and culminated in the eventual capture of the airport on August 24. More than 200 people lost their lives over the course of the battle for Tripoli, with hundreds more injured. In scenes that are still hard to comprehend, some Fajr Libya fighters celebrated their victory by setting fire to yet more buildings. Others posed for photos as they clambered over aircraft wings.

Footage of the burning Afriqiyah A330 seemed harrowingly reminiscent of Libya's 2011 uprising, when the two flag-carriers each lost an A300 to fire at Tripoli Airport. Once again, the country's aviation assets were going up in flames.

Although the intensity and indiscriminate nature of the violence surprised many, there had been warning signs that Libya's airport infrastructure was vulnerable. On March 21, long before the latest wave of unrest, a bomb was detonated on the runway of Tripoli Airport. The security breach was likely intended to weaken confidence in the Zintan militia rather than to claim lives, occurring at about 05:30 local time before flights got under way. It prompted Lufthansa and Austrian Airlines to permanently withdraw from the country.

Forced at gunpoint

Air traffic controllers in Tripoli had also been targeted the previous August, when they were forced at gunpoint to refuse a Qatar Airways flight permission to land. That was one of a series of security incidents aimed at the tiny Gulf state, which some militias have accused of meddling in Libya's affairs.

Benghazi's Benina International Airport had, meanwhile, been closed since the bombardment of the city in May by Khalifa Hifter, a renegade general who is leading the charge against Islamist militias in the east.

With the entire country now teetering on the brink of civil war, Libya's aviation officials can do nothing except count the cost of the destruction and try their best to avoid further losses.

The first step is to fully assess the damage at Tripoli Airport. Engineers from Libyan Airlines were granted access to the facility about a week after its seizure, Taynaz said, and at the time of writing they were close to finalising their damage report. Initial findings suggest that 13 of the 19 aircraft parked at the gateway by the two flag-carriers will not fly again – either because they are too badly damaged, or because it would be more economical to scrap them for spare parts.

"They said all the aircraft have been hit," Taynaz confirmed. "Some of them with anti-aircraft missiles, and most of them with Kalashnikov bullets. We had one Airbus 320 in the hangar, which we thought might be ok, but unfortunately it was also hit by Kalashnikov bullets.

"None of them can be flown straight away but at least we've got high-speed tape for the bullet holes... If the damage is not inside the aircraft itself, we're thinking of taking them to Djerba or to Malta for maintenance."

Taynaz said two Libyan Airlines aircraft could be confirmed as write-offs simply by looking at the video footage. One A320 (5A-LAI) lost its auxiliary power unit, horizontal stabiliser and part of the rear fuselage after being struck by heavy artillery. One Bombardier CRJ-900 (5A-LAL) succumbed to flames and was completely incinerated.

Afriqiyah chairman Abdulhakim Fares also confirmed that every single one of his aircraft on the ground in Tripoli was damaged. Like Taynaz, he is waiting for the engineers' final report before confirming any losses beyond 5A-ONE.

"All the aircraft have been hit by bullets, at least by one or two shots," Fares said. "From a technical point of view you cannot determine the size of the damage until you open the aircraft from the inside. The final report will be given after we open up the aircraft and do the damage assessment.

"For Afriqiyah's aircraft, we believe most of them can be repaired. But some of them will be a little costly. It is covered by the insurance, but they

storage facility in the airport may also slow progress.

Although both flag-carriers are now caught up in the gravest of national crises, their employees are keeping Libya connected to the outside world. Emergency repatriation flights got under way almost immediately from Misrata International Airport, 200km east of the capital, and services have since resumed at Mitiga International Airport, a former US Air Force base north-east of Tripoli's city centre. Labraq International Airport in Bayda was already being used as a replacement gateway for Benghazi's Benina Airport.

Four Libyan Airlines jets – which were positioned outside of Tripoli during the assault – three A320s and one A330, are now being deployed on ad hoc repatriation and medical evacuation flights. The wide-body and one of the narrow-bodies are operating out of Mitiga, while the other two aircraft are based at Labraq.

Flights to Alexandria, Amman and Istanbul are being operated from both bases, along with Tunisian routes from Labraq. Underscoring the



Abdulhakim Fares: Every single one of his aircraft on the ground in Tripoli was damaged.

have a ceiling for the coverage. I believe the rest of our costs will be paid by the government."

Afriqiyah had all three of its A330s at the airport at the time of the initial attack and one source within Tripoli indicated that the surviving two units are likely to be scrapped. This was not, however, confirmed by Fares.

Early media reports claimed that a total of 31 aircraft were parked at the airport on July 13. Libyan Air Cargo, the freighter subsidiary of Libyan Airlines, lost an Ilyushin Il-76 (5A-DNG), while aircraft operated by Malta's Medavia, Air Libya and Buraq Air may also have been damaged.

Describing the terminal as "almost completely burnt", Taynaz speculated that commercial services are unlikely to resume within the next year. Repair efforts could be hampered by the reluctance of foreign experts to visit Tripoli, he predicted, while the destruction of a spare parts

deep distrust between Libya's neighbours and its new Islamist authorities, all air routes to Cairo have been closed and Tunisian flights are not being permitted from Tripoli. On-going skirmishes in the capital are also disrupting operations at the secondary airport.

"We are not 100% sure if the battle is going to reach Mitiga or not," Taynaz admitted. "Twice in the past two or three weeks we diverted two aircraft [bound for Mitiga] to Djerba for the night stop, and then we resumed normal operations. Safety measures have to be taken first."

Afriqiyah was marginally more fortunate on the day of the initial assault, having six aircraft positioned outside of the capital. They included two Irish-registered A320s subject to a wet-lease agreement with Air Contractors – a deal which had, briefly, secured the airline access to Europe with its own metal. Those aircraft have since been spirited away to Malta for safekeeping, while the

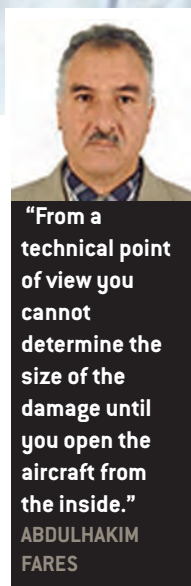


other four units are plying routes from Mitiga, Misrata and Labraq to Alexandria, Casablanca, Dubai and Istanbul.

Rebuilding the combined route networks to anything resembling their former glory will be a slow, difficult and costly task that hinges on political developments at home, so both flag-carriers are downplaying near-term expectations.

"Of course the European routes have been stopped totally for now," Fares confirmed, referring to a handful of destinations on the continent served by Afriqiyah's wet-lease partners. Libyan carriers have been banned from European skies since 2012 due to concerns about the country's post-war oversight capabilities.

Asked about the most recent Air Contractors



"From a technical point of view you cannot determine the size of the damage until you open the aircraft from the inside."
 ABDULHAKIM
 FARES

flag of convenience, Fares said the deal has not been nullified and could be resumed later. "We are still working on that issue," he insisted. "We are trying to bring back our operations to Paris, Dusseldorf and London."

Taynaz suggested that a gradual resumption of services, if at all possible, would likely have to rely on regional partners. "At the moment, I don't think any European company would fly to Libya. The insurance companies will not allow their aircraft to fly here," he admitted. "Maybe Tunisian [partnerships are more realistic], because they're in touch with the Libyans more than anybody else."

Indeed, he was speaking shortly after signing a charter contract with Tunisia's Syphax Airlines, which agreed to deploy its A330 on flights from

"They said all the aircraft have been hit. Some of them with anti-aircraft missiles, and most of them with Kalashnikov bullets. We had one Airbus 320 in the hangar which we thought might be ok, but unfortunately it was also hit by Kalashnikov bullets."

KHALED TAYNAZ

Tripoli to Istanbul, Jeddah for the Hajj pilgrimage, and Asian repatriation services.

Just as route development will be piecemeal until the political landscape is clearer, so any talk of fleet procurement must be tempered at this stage.

Two brand new Libyan Airlines A330s – originally scheduled for delivery in July and October – are "ready and waiting" in Toulouse, Taynaz said, pending final payments to Airbus.

Fares added that Afriqiyah's order for two A330s also remains active. But other near-term deliveries will probably be off-balance-sheet. "We'll still be short of aircraft, and we'll have to go towards leasing rather than buying," Taynaz confirmed.

Concerned but optimistic

Two weeks before the battle for Tripoli, in an interview with Hisham Souli, Afriqiyah's UK station manager, at London Gatwick Airport, he said he was concerned but optimistic about Libya's prospects, arguing that the pockets of militia violence across the country "could be much worse" given the wider regional unrest. In the UK, he said, Afriqiyah's brand was gaining favour not just with Libyans but also British business travellers.

"When British Airways stopped operating to Tripoli for security reasons [after the March runway bombing], several British nationals started travelling with us," Souli recalled. "And now we see some of them again every one or two months, even though BA resumed flying. They liked Afriqiyah."

It is a testament to the resilience of the Libyan people that, despite facing repeated hardships, they seek out positives and focus on building a better future. There are many unanswered questions about the path that Libya's rival militias are taking the country down. But no one has any serious doubts about the competence and dedication of its civil aviation professionals.

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Expanding Air Arabia happy to be on the RAK

Air Arabia Group CEO, Adel Ali, talks to Alan Dron about the airline becoming the national carrier of Ras Al Khaimah, prospects for updating the fleet and the importance of Russia.

If the traffic is not too heavy on the E11 highway, it only takes about 45 minutes to drive the 70km from Air Arabia's Sharjah home base to its latest hub in Ras Al Khaimah (RAK), the most northerly emirate of the UAE.

The low-cost carrier (LCC) opened for business in RAK in May, having been invited by the emirate's Department of Civil Aviation (DCA) to become its new national carrier following the demise, at the turn of the year, of RAK Airways.

The latter airline decided to suspend its operations on the last day of 2013. Its aim, it said, was to "take this time to re-evaluate the best options available for RAK Airways' future". However, in late January, local media quoted Saif Mohammad Al Suwaidi, director-general of the UAE's General Civil Aviation Authority, as saying bluntly that the airline would "not be coming back".

But why was Air Arabia so keen to open its fourth hub so close to its main base?

"Obviously there was an opportunity and RAK-Air Arabia relations go back a very long way," said Air Arabia Group CEO Adel Ali.

Speaking at the Arab Aviation and Media Summit in RAK in late September he said: "The idea [of operations in RAK] was always there, it was a question of how best to tackle it.

"RAK's interest is to make sure they have an air operation into the airport there, to develop their city. We wanted the expansion."

RAK, Um Al Quwain and Fujairah welcomed services from another airport in the northern emirates, he added. "This region was undergoing a lot of tourism development. If we plant the seed now, tourism will grow and, as it grows, we will grow with it."

RAK has been pumping investment into improving its tourism facilities and when Air Arabia started its RAK operations, the chairman of RAK DCA, Sheikh Salem Bin Sultan Al Qasimi, noted: "Our partnership with Air Arabia will allow us to increase the accessibility of Ras Al Khaimah to international passengers, while also increasing the flow of tourism to the Emirates, which will have a direct effect on the local economy."

Ali believed that one of the factors behind the failure of RAK Airways had been its small size – the airline operated a small fleet of

"This region was undergoing a lot of tourism development. If we plant the seed now, tourism will grow and, as it grows, we will grow with it."

ADEL ALI



CONTINUED FROM PAGE 45

leased Airbus A320s. "In the airline industry you need economies of scale. If you don't have that in a very competitive market such as here, it's difficult."

RAK Airways began operations in 2007 and had already suspended operations once, between 2009-10. It was notable for having had at least seven CEOs in its short lifespan.

Air Arabia has based two A320s at RAK and operates to eight destinations in the region and the Indian sub-continent, including Cairo, Muscat and Islamabad, with Chittagong being added in early September.

Traffic rights are available for services from RAK to Doha, but the Qatari authorities have yet to finalise the paperwork to allow services to start.

Given the increasing air traffic congestion in the Gulf, September's decision by the Emirate of Ajman, just a few kilometres from Air Arabia's

In 2013, the airline reported a net profit of AED 435 million (\$118 million). This was a modest increase of just 2% compared to 2012, but turnover was up 14% at AED 3.2 billion, while more than 6.1 million passengers flew with Air Arabia in 2013, a 15% increase compared to 2012's 5.3 million.

Its figures for the first half of 2014 exceeded analysts' expectations, with a net profit of AED 248 million compared to AED 134 million in the corresponding period of 2013, a jump of 85%. Turnover for the first half of 2014 stood at AED 1.74 billion, an increase of 15% compared to the same period of 2013, while passenger numbers were up 11% at 3.4 million passengers. The average seat load factor for the first half of this year stood at 83%, well up with western LCCs.

Numbers are being boosted by Air Arabia's new destinations, such as the Armenian capital of Yerevan, which Ali said was "doing extremely

suspend services to Kharkiv in neighbouring Ukraine and severely cut its flights to Kiev from 14 to three weekly. "Russia will be one of the biggest markets for us."

Air Arabia aims to keep its flights to a maximum of around four hours, which means that large areas of Africa currently remain beyond its reach. The situation on the continent is not helped by many African nations retaining a very conservative aero-political stance. Like many, Ali believes that there is potential in Africa, but aviation in much of the continent remains subject to taxes and high fuel charges.

Just on the four-hour limit, however, are several destinations in western China. Air Arabia has been granted licences for three as yet unnamed routes and these are due to be announced around the time this issue of *Arabian Aerospace* is published.

Earlier this year, Air Arabia took delivery of the 6,000th Airbus A320 off the production line, part of its steady fleet expansion. By the end of the year it will have received 10 of the type, taking the fleet to around 40. A further eight will follow in 2015, with six more "pencilled in" for the following year, all part of the order for 44 placed in 2007.

The latest A320s are arriving with sharklet wingtip devices that are delivering about 3% fuel burn improvements on longer routes.

The company is continuing to examine contenders for a new order that will cater for the carrier's growth beyond 2016. Ali has previously said that he is not wedded to the idea of a single-type fleet. "We've had a lot of dialogue with Airbus and Boeing and interesting discussions [with Bombardier] over the CSeries."

Unfazed by the problems

Ali has mentioned the new Canadian twinjet in the past and seemed unfazed by the problems it had encountered over the summer following an uncontained engine failure during ground testing.

The programme encountered some challenges but Bombardier seemed to have overcome them and was offering "an excellent proposition" he said. However, he is wary of being one of the first in the queue for any new model.

"One learns it's not necessarily good to be one of the launch customers for anything. It's better to order something that has been tested and everyone else has dealt with the problems." Whether that will count against the CSeries remains to be seen.

Nor was it essential to buy aircraft, he added: "If we need more, we can always lease them. It's not going to restrict the expansion of our business."

The decision on whatever type is chosen has been awaited for some time and the dynamic nature of aircraft manufacturing at present meant there was always something new to consider, he said. The most recent product to potentially merit consideration is the new Boeing 737 MAX 200, developed for Irish LCC Ryanair, which adds around 10 seats to the standard aircraft's layout, giving a capacity of 199 passengers.



Work is under way to identify the next aircraft that will supplement the fleet.

Sharjah base, to begin construction of yet another new airport seems unlikely to improve the situation.

Costing around \$570 million, the new airport will be relatively small, with an estimated initial capacity of one million passengers a year. Like RAK, Ajman hopes to boost tourist traffic and the new facility is due to be operational by 2018.

Asked if this was likely to be 'an airport too far' for the area, Ali was noncommittal: "I don't know much about it. It will be quite a while before it happens, if it happens."

The airline has also been considering opening a hub in Amman, Jordan. The geopolitical situation in the area, with civil wars raging in both neighbouring Syria and Iraq, meant that the situation remained under review, with progress likely to be delayed until the situation improved, he said.

Despite the region's political problems, Air Arabia has continued to prosper.

well". He added: "It's not a city into which you put a massive capacity, but three to four flights a week do well."

It was too early to say how another new destination, Shymkent in Kazakhstan, was doing, he said. "We'll address that in six months." However, traffic from Air Arabia's other two Kazakhstan destinations, Almaty and Astana, was very healthy.

Also providing strong traffic flows are the Russian destinations on the carrier's route network. Like several Middle Eastern carriers, Air Arabia is increasingly pushing northwards and now flies to seven points there. "I had no doubt about Russia," said Ali. Its sheer volume, economy and harsh winters that make an escape to the warmth of the Gulf for a week or two so welcoming will continue to see passenger figures increase, he said.

Despite the current geopolitical challenges that the country was facing, which has seen the carrier

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Mohamed Frikha ruffled feathers when he launched Syphax Airlines two years ago and, as Martin Rivers discovers, the chairman is intent on shaking up the Tunisian market further.

Syphax figures out the way ahead

In an aviation market as heavily regulated as Tunisia, Mohamed Frikha, the founder and chairman of Syphax Airlines, fully anticipated that his start-up would encounter push-back from existing players when it launched in April 2012.

Sure enough, on the very first day of operations at Tunis Carthage International Airport, Syphax's passengers were turned away by staff from the ground-handling division of flag-carrier Tunisair.

The debacle marked a rocky start for the fledgling privately owned airline, and it was not to be an isolated occurrence.

Over the months that followed Tunisair's former chief executive, Rabah Jrad, repeatedly accused his competitor of "illegal and unfair" business practices. Though undoubtedly a headache, this opposition ultimately failed to deter Frikha from injecting competition into the sector.

Syphax's fleet now stands at three aircraft (two Airbus A319s and one A330), and it has orders for three current-generation A320neos plus three under-development A320neos.

The airline operates scheduled flights from four Tunisian cities – mainly Tunis and Sfax, but also Monastir and Djerba – to Istanbul, Jeddah, Tripoli, Sabha, Paris and Montreal.

An extensive charter network also keeps utilisation high, but Frikha said the carrier's existing operations barely scratch the surface of its long-term vision.

"Our target is to arrive at 15 aircraft around 2018, [serving] two million passengers," said the chairman, who became one of Tunisia's best-known businessmen after founding the multi-sector IT firm Telnet Group in 1994. "We will take two of the [current generation] A320s in 2015, and another in 2016. We will lease a second A330 in 2015. Then we will lease more A320neos after that."

Asked about future network growth, he said the airline would develop in three regions: "Africa – [both] north Africa and the sub-Saharan countries; Europe; and long-haul – Asia, North America and South America."

Expansion will initially be focused on Europe,



"I hope that we are complementary to Tunisair. It depends on them. On some routes there is not a lot of demand, so you need only one company. But there are also larger routes where I think we can work together."

MOHAMED FRIKHA

where Syphax's varied charter operations have continuously been put to work testing market potential.

Non-scheduled services to cities like London, Brussels, Lyon and Zagreb have already proven popular with customers, but Frikha said no firm decisions have been made and evaluations were on-going across the continent.

"We want to work on Germany, Belgium, Italy, Spain, England," he noted. "Our project is to transfer these charter flights into regular flights, so we are looking at many different network scenarios, and we will soon announce our new network for the next three years."

A more complicated picture emerges in Africa, where Tunisia's own experience of protectionism is a continent-wide problem.

Although west Africa has always been in the business plan – Frikha singled out Côte d'Ivoire, Gabon and Nigeria as the prime targets – securing designations on both ends may not be straightforward.

Air Arabia chief executive Adel Ali has long complained of regulatory intransigence over his efforts to link up Morocco with west Africa, and the Tunisian Government is likely to be just as uncooperative – especially since Tunisair serves five points in the sub-region. Nonetheless, Frikha is focused on the long-term and sees clear potential in connecting west Africa with Europe via Tunisia.

"In the beginning, it [west Africa] will be point-to-point," he explained. "But our strategy is to develop the three regions – Africa, Europe and long-haul – [so that they are] all feeding into Tunisia."

For North Africa, charter services have again been used to test the water before rolling out regular flights. Casablanca in Morocco continues to be operated on an ad hoc basis, while the Libyan cities of Tripoli, Benghazi and Sabha quickly matured into scheduled points. Unfortunately civil unrest across the border has since grounded those services, with both of Libya's main international gateways closed due to fighting.

Frikha stressed that Tunisia's neighbour to the east is a "very important market" for Syphax – as evidenced by its earlier decision to serve the capital from all four bases – but Libya's volatile and unpredictable security situation remains an operational challenge.

"If we can fly, we fly," he said. "Sometimes we have to cancel flights. We always make sure there is contact there and we watch the situation. We coordinate with the Tunisian Civil Aviation Authority, and if it is necessary we stop temporarily."

Further afield, the long-haul side of the business is also beginning to take shape. In April, Syphax launched weekly flights from Tunis to Montreal. Load factors on the route started at about 50% but were forecast to reach 80-85% this summer, so Frikha was eager to add more points. Beijing will become the next long-



haul destination in November, he confirmed, followed by New York in 2015 and then either Rio de Janeiro or Sao Paolo in 2016.

The arrival of the second A330 next year will enable much of this growth, with Syphax leasing the aircraft for five years from Airbus. But further antagonism by Tunisair cannot be ruled out.

Asked about Irad's claim that Syphax enjoys anti-competitive advantages, Frikha chose his words judiciously. He had previously accused the flag-carrier of hypocrisy, telling local media that state-owned entities were far more likely than private companies to benefit from special privileges. But on this occasion the chairman opted for a more conciliatory tone.

"I hope that we are complementary to Tunisair. It depends on them," he insisted. "On some routes there is not a lot of demand, so you need only one company. But there are also larger routes where I think we can work together."

Protectionism for loss-making Tunisair remains a potent threat to Syphax, manifesting itself in several different ways. As well as facing difficulty in securing route designations, the start-up must contend with restrictions over the types of aircraft it can legally deploy.

"Right now we are not allowed to do regional [aircraft] flights," Frikha complained, noting that Tunisair Express has a monopoly on such services with its mixed ATR and Bombardier fleet. "I think it is very important for us to do regional flights to feed our international flights. If the law changes and we have the capability to do this, we can purchase other kinds of aircraft."

Forced at gunpoint

Syphax has approached the government about the subject, but Frikha predicted that any talks would fall under the wider banner of open skies – a line of discussion that has failed to gain traction in recent years. Although in theory open skies should promote traffic growth, the government is understandably reluctant to take steps that might hasten the demise of its struggling flag-carrier.

Overtaking the restriction on regional aircraft, therefore, might not be a priority for Frikha, who also has his eye on mutually beneficial goals, such as securing infrastructure upgrades.

Enfidha Hammamet International Airport stands out as one target for lobbying. The gateway, opened in 2009, is currently used by

Syphax for charter flights. Although Frikha described it as a "very nice airport", he warned that communication systems were "a problem" at the base and further investment was needed before its full potential could be realised.

Partnerships make up the final piece of the puzzle.

Syphax is already seeking an interline or codeshare deal for its Canadian route, and Frikha hopes to unlock synergies elsewhere in his fast-expanding network.

The chairman gave his interview at the International Air Transport Association (IATA) annual meeting in Doha – the first time the industry group's AGM had been held in the Gulf. Asked if Syphax is ultimately pursuing the same mega-hub strategy as Qatar Airways, Frikha stressed that a region like north Africa was better suited to a cooperative model.

"I think we should speak about the Maghreb, not just Tunisia," he responded. "In the Gulf, you have Emirates, Etihad, Qatar. In Europe, there are also big companies. So I think the airlines of the Maghreb should make an alliance – RAM, Algeria, Afriqiyah – and that will be very good for the region. With an alliance, we will all be stronger."

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*Having tailored its low-cost business model to Istanbul's hub-and-spoke network, Pegasus Airlines is on the march for traffic rights. Chief commercial officer Güliz Ozturk outlines the strategy to **Martin Rivers**.*

Pegasus harnesses the best of both worlds

When Pegasus Airlines was acquired by ESAS Holdings and rebranded as a low-cost carrier (LCC) in 2005, the airline's incoming management team was faced with an immediate strategic dilemma.

On the one hand, their home nation of Turkey was poised to embark on a decade of break-neck civil aviation growth matched in scale and ambition only by the Gulf mega-hubs. Istanbul's geographical location at the crossroads of three continents was enabling Turkish Airlines (THY), the country's flag-carrier, to transform Istanbul Atatürk Airport into one of the world's pre-eminent intercontinental hub-and-spoke networks.

On the other hand, across Turkey's western border with Europe, LCC giants Ryanair and EasyJet were perfecting the art of ultra-low-cost travel, tearing up the rulebook for hub economics and unlocking the full potential of the point-to-point business model.

Just as Istanbul straddles east and west, so Pegasus found itself balancing two competing and seemingly incompatible schools of thought for airline management: full-service hub connectivity versus no-frills A-to-B travel.

Less than a decade on, having grown its fleet from 14 to 54 aircraft and secured the title of Europe's second most profitable carrier, the company seems to have found a sweet-spot.

"We call it 'low-cost network carrier', because we also carry connecting traffic," said Güliz Ozturk, Pegasus's chief commercial officer. "Istanbul is

Continued
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"Istanbul is located in such a way that east and west is a natural combination. So if you don't use this connectivity, then you lose an advantage."
GÜLİZ OZTURK



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located in such a way that east and west is a natural combination. So if you don't use this connectivity, then you lose an advantage."

Being an LCC inevitably starts with stripping your cost-base to the bare bones. The airline's Boeing 737-800s have an all-economy, maximum-density configuration of 189 seats; its in-flight products are unbundled, requiring customers to pay extra for ancillary services; and Turkey's low labour costs ensure cheap human resources. Crediting the 2005 re-launch of Pegasus with introducing "the first and only low-cost product of Turkey", Ozturk stressed: "Cost management is in the DNA of the company."

But abiding religiously to the ultra LCC model would mean ignoring some of the unique characteristics of the Turkish market. Istanbul, like Dubai or Doha, lends itself perfectly to transit traffic. With about one in four Pegasus customers using the city as a stopover, the airline has to look beyond simple origin-and-destination flows. Its passengers take a wider array of routings than in Europe, encompassing myriad different travel purposes.

"We are a very cost-conscious company but at the same time we have designed the model in a way that would serve the needs of different customer segments," Ozturk explained. "The customer is not actually interested in having your costs low. He's interested in having the lowest fare available."

Recent years have, therefore, seen Pegasus selectively hybridise some elements of the business, signing up to Global Distribution System (GDS) channels and rolling out a loyalty programme. As long as the associated costs are shouldered by the customer using those services, Ozturk said, the underlying cost-base remains optimal. "If the airline manages its costs well enough, then you will still have the cheapest fare in the market," she insisted.

Second gateway

Pegasus operates from Istanbul's second gateway, Sabiha Gökçen International Airport, on the Anatolian side of the city, so options for connecting with THY are limited. The airline must rely on its own self-sufficient network, currently offering 56 international and 30 domestic points across 36 countries.

Excluding domestic flights, which account for three quarters of its operations, Europe is by far the largest market. About 20.5% of Pegasus flights serve the continent, giving the rest of the world a market share of just 4.5%. Trunk routes to the UK, Germany and Switzerland are being targeted for higher frequencies, while new destinations in France, Italy and Scandinavia are also under evaluation.

But a more complicated picture emerges elsewhere in the network. Russia, Asia, the Middle East and north Africa all have the potential to be major markets for Pegasus, yet bilateral restrictions have stymied progress.

Moscow is cited by Ozturk as the clearest example. According to the bilateral air services



agreement signed by Russia and Turkey, the second carrier designated on either side is permitted up to seven weekly frequencies between Istanbul and Moscow. Despite securing this designation, however, Pegasus is allocated just three of the available Turkish slots. The other four were initially given to THY – bolstering its already sizable 28 weekly services – until Russia objected. They have since been revoked and are not being used.

Other Russian cities are, meanwhile, limited to a single designation on either side, meaning that Pegasus serves just three more points from Istanbul (Krasnodar, Omsk and Mineralnye Vody) compared with THY's nine (St Petersburg, Kazan, Ufa, Yekaterinburg, Novosibirsk, Rostov, Stavropol, Astrakhan and Sochi).

"There's huge traffic between Turkey and Russia, so why not liberalise it? The two countries will benefit from this," Ozturk complained. "Wherever they give to us [in Russia], we will fly. Wherever. It is very valuable."

Despite praising Turkey's civil aviation authority for "working hard for us", she admitted that securing designations is a constant headache. In the Middle East, the airline lacks any presence in Saudi Arabia and Jordan, and would like greater access to Iran. In north Africa, Pegasus may be launching new routes to Egypt's Sinai Peninsula this year, but it continues to face hurdles in Cairo, Algeria and Tunisia.

The bilateral issue has proved so troublesome that, in 2012, after trying in vain to secure traffic rights between Istanbul and Bishkek, Kyrgyzstan's capital, Pegasus went down the joint-venture route. Pegasus Asia deploys a single 737-400 on mostly Russian routes, and is working with authorities to expand to India, China and the United Arab Emirates. A second aircraft was due to be added as *Arabian Aerospace* was going to press, potentially followed by a third in 2015. It is a model that Ozturk can see being pursued elsewhere.

"There may be others. There are countries we are working on," she said, singling out Kazakhstan as one market where talks are under way. "As long as it is a country where the [low-cost] penetration is low, as long as it is a feasible project, and that country will be supportive in terms of bilateral traffic rights, then why not?"

Overseas joint ventures are also being pursued by Turkish rival Atlasjet, which stole a march on

Pegasus last year by launching Iraqi subsidiary Zagrosjet.

Pegasus had been looking to establish its own offshoot in the country, Ozturk confirmed, but those talks have now been abandoned. The airline continues to "receive lots of requests" from foreign operators, and will consider each proposal on its own merits.

Back in Istanbul, Sabiha Gökçen Airport recorded 28% passenger growth last year with overall footfall of 18.8 million. The gateway is planning to open a second runway by 2016, lifting annual capacity to about 50 million.

The city's hotly anticipated third airport – mooted to have a capacity of 150 million, rivalling even Dubai World Central – could one day become a second base for Pegasus. "It's an opportunity for us to start a new hub if we want to do so," Ozturk speculated, noting that the airline would gain exposure to a "different catchment area" on the European side of the city. But no decision has been taken, and the project still has environmental hurdles to clear. Pegasus cannot base aircraft at Atatürk Airport due to slot constraints.

Upcoming delivery

For now the company is focused on its upcoming delivery of 75 Airbus A320-family neos plus 25 options. The deal, Turkey's largest-ever single aircraft order, was announced in December 2012 following years of tough negotiations.

Proving once again that it will not be constrained by traditional LCC theory, Pegasus plans to operate a mixed fleet for at least the duration of the deliveries between 2016 and 2022. Indeed, the Boeing operator has already leased four A320s to kick-start this "smooth and soft diversification".

Asked whether it will eventually transition fully to Airbus, Ozturk responded: "It's a flexible fleet plan. Either we may replace all the current aircraft with the new ones, or we may keep them and also add the new ones."

With Pegasus expanding at 1.5 times the rate of Turkey's aviation market this year – a market that has seen average annual passenger growth of 14% since 2003 – management are wise to keep all options open. This is one airline that, pending further bilateral progress, probably needs all the planes it can get.

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Air Algerie has had a whirlwind year, hitting the heights with a raft of new aircraft orders, followed by the tragic loss of flight AH5017 over Mali in July. But, as Victoria Moores discovered, the airline is showing its fighting spirit.

ALGERIE TURNS UP THE HEAT

Algeria is the largest country in Africa, a title it gained in 2011 when South Sudan separated from Sudan. But the Sahara Desert covers more than 90% of this vast country; so only 12% of the total land area is inhabited. And with that much desert, it can be really, really hot.

The official hottest temperature ever recorded in the country was 50.6°C (123.1°F), in the oasis town of In Salah.

Zohir Houaoui, head of Air Algerie's commercial department, has worked at the airline for 20 years, including a three-year stint in the UK and nearly two years as head of cargo. But his loyalty dates back to long before he joined the company. "My father was a catering manager at Air Algerie for 30 years. When I was young, I used

to listen to him speaking about Air Algerie's projects."

Now Houaoui, himself, is one of the executives behind Air Algerie's five-year strategy aiming to restore the airline's competitiveness by 2017.

"I joined the company by accident. I studied maths; they were looking for someone to do a study into the airline's profitability and how to evaluate the cost of routes. I stayed because I like the airline industry."

Government-owned Air Algerie is doing well financially, but – like many other African airlines – is facing stiff competition from Emirates Airline and Qatar Airways, which offer low fares and a very high-quality service. This has triggered Air Algerie to revamp its fleet, which today comprises 12 ATR 72s, five Boeing 737-600s, 17 737-800s,

three 767-300s, five Airbus A330-200s and a single Lockheed C-130 freighter.

"The most important thing at the moment is that Air Algerie should return to being a market leader," said Houaoui. With this in mind, over the last 12 months, the north African carrier has ordered three ATR 72-600s, eight 737-800s and three A330-200s for its passenger fleet, as well as two 737-700 Combis to replace its aging freighter and support passenger growth.

As the new aircraft arrive, between 2014 and 2017, the cabins of Air Algerie's existing fleet will be upgraded to a similar standard.

"We will retrofit some of our other aircraft with the new design, connectivity and in-flight entertainment (IFE). When we bought the previous aircraft there was no need for IFE

Algerie scarred by the tragic loss of 116 lives

Sadly, 2014 has been a year of tragedy for Air Algerie, scarred by a fatal accident on July 24, which claimed the lives of all 110 passengers and six crew members on board.

The aircraft, a McDonnell Douglas MD-83 on wet lease from Spanish company Swiftair, was operating flight AH5017 from Ouagadougou in Burkina Faso to Algiers when contact was lost. The disintegrated wreckage was found in the Gao region of Mali.

The aircraft, a 1996 example with the serial number MSN53190 and registration EC-LTV, took off from Ouagadougou in the early hours and was expected to land in Algiers four hours later. Weather conditions at the time were poor.

While the Republic of Mali is leading the investigation, it is being assisted by France's Bureau d'Enquêtes et d'Analyses (BEA). The team comprises 20 air accident investigators from Algeria, Burkina Faso, France, Mali, Spain, and the USA.

"The aeroplane's flight path as it was reconstituted from the flight data recorder (FDR), superimposed over a satellite image of the cloud mass present on the day of the accident, shows a normal climb and start of cruise, with some

moderate route changes that are typical of a strategy to avoid any stormy developments," said BEA in a statement.

Three working groups have been formed to investigate the crash: the aircraft group, systems group and operations group.

The first will use information from the wreckage to calculate the angle and attitude on impact. Meanwhile, the systems group is reconstructing the history of the ill-fated aircraft, based on flight data, communications and weather information. Finally, the operations team will gather ATC data – including radar, radio communication and weather information – along with material from the Ouagadougou flight departure dossier.

The FDR and cockpit voice recorder (CVR) were both recovered from the scene and sent for analysis in France, but BEA said the CVR recording was unusable "due apparently to a recorder malfunction, with no link to the damage that resulted from the accident".

BEA is continuing with its attempts to extract the information and is stressing the importance of all other ground and aircraft-to-aircraft communications to its inquiry.

In its initial reconstruction of events, BEA said the aircraft departed and climbed to flight level (FL) 310, stabilising at a cruise speed of around 280kt. However, about two minutes after the start of cruise, the speed dropped progressively to about 160kt and the aircraft started to descend.

"The aeroplane then turned left and quickly lost altitude, with large changes in pitch and bank. The rotation to the left continued until the end of the recording. The last recorded point, 1hr 47mn 15s, corresponds to an altitude of 1,600ft, a speed of about 380kt and an extremely high descent speed," said BEA. It is hoping to piece together the end of the flight using calculations based on aircraft performance data.

Swiftair, which owned and operated the aircraft, was created in 1986 and employs more than 400 staff. Based in Madrid, it performs passenger, charter and cargo operations in Europe, the Middle East and Africa, using its fleet of more than 30 aircraft, including Metroliners, Embraer 120s, ATR 42/72s, and Boeing 727s and 737s and MD-83s.

An interim report will be published in mid-September by the president of the Mali Commission of Inquiry.



because we used them on short-haul routes, to Paris and other European countries. Now IFE is an obligation. If we want to fight these airlines [Gulf carriers], we have to offer at least the same level of service on these routes," said Houaoui.

Air Algerie is planning to overcome the threat of the Gulf carriers by using its new capacity for growth and to tap the potential for sixth freedom flights. "The problem has been that we don't have enough aircraft to meet demand. With the purchase of 16 aircraft for delivery over the next three years, I don't think we will buy more aircraft," said Houaoui.

With the new aircraft now in the pipeline, Air Algerie is looking to add a swathe of African routes – including Addis Ababa in Ethiopia, Lagos in Nigeria, N'Djamena in Chad and possibly other destinations in southern Africa – as well as new European services to Vienna and Lisbon.

Long-haul routes

"We plan to open new long-haul routes, including New York JFK. At the moment we have two long-haul services, Beijing and Montreal. We are mainly looking at the USA and Asia," said Houaoui, adding that frequencies have already been boosted on Beijing and Montreal.

In keeping with the AFRAA working together theme, alliance membership is also firmly on Air Algerie's agenda. "This is what we are looking for," said Houaoui. "One of the first objectives of Air Algerie is to secure an association with an alliance."

He said 2014 would be spent preparing the airline so it meets the strict alliance criteria, with a view to joining one of the global groups by 2017.

Internally, Air Algerie is also rolling out some changes. It is likely to remain government-owned, but there is a project under way to spin off a number of its activity areas – such as cargo, catering and ground handling – into wholly owned subsidiaries.

"Air Algerie is making some changes to its

organisation to become more profitable and improve performance. It needs to focus on its core passenger business and to give these services [cargo, catering and ground handling] a chance to develop, because there is a good market in Algeria.

"Initially, they will be subsidiaries, but they could be moved to partnerships," said Houaoui.

One item, which is not on the agenda, is job cuts and, against the backdrop of a bright business climate, Air Algerie is expecting to swell its

passenger numbers to five million by 2015 and boost its west African flights.

Just as the five-year strategic plan draws to a close, in 2017, a new terminal will be opened at Air Algerie's Algiers home base. "I believe there is a very positive and important event, which may help us to assert our African hub strategy," said Houaoui. In the meantime, the current plan is on track and work has already begun on the airline's strategy for 2017 and beyond.

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Air Express Algeria is expanding its fleet of Let L-410s to service increasing aviation demand in Algeria's oil and gas fields.

Dave Calderwood reports.



EXPRESS DELIVERY

AEA describes the Czech-built Let 410 turboprop as "tough, robust and efficient." The operator is the first in Africa with the latest UVP variant (UVP designates 'short takeoff and landing' in Russian).

The first operator in Africa to use the upgraded and modernised Let L-410 UVP E-20 is Air Express Algeria (AEA) – and what a baptism of fire it's been for the Czech turboprop twin.

AEA operates in the tough conditions of the north African desert, amid temperatures of up to 50°C and with "sand everywhere", landing and taking off from rough strips near to oil and gas installations.

It's a demanding environment, which places emphasis on safety and flexibility, says AEA marketing manager Djebri Belleili.

This year, as well as taking delivery of three of the new Let L-410 aircraft, adding to its existing L-410 fleet, AEA has added Part 145 maintenance approval from the European Aviation Safety Agency (EASA) and also from the South African Civil Aviation Authority (SACAA).

"The market of oil and gas in Algeria is expanding and, as a consequence, the demand for air transport increases," said Djebri.

"Customers request tailored and safe transport for their staff. They need to get on remote oilfields and they need to get there fast. Because of the distances and the climate, taking the road is not an option. Aviation is the most adequate means of transport for

them. It meets their safety requirements and offers speed for travel between sites that are distant by hundreds of kilometres.

"In this context, I think that AEA meets the needs of the oil and gas companies," continued Djebri. "We adapt to customers' needs and, at the same time, we guarantee a high level of safety and quality. The approval of our maintenance by SACAA and EASA, in addition to that from the authorities in Algeria, is an important step for AEA and shows our dedication to safety and quality by international standards."

AEA was founded in 2002 by Chakib Belleili, who remains the main shareholder. Belleili is a graduate engineer from Ecole Nationale d'Aviation Civile (ENAC) -Toulouse and steeped in Algeria's aviation industry. From 1984-88 he was the director of Algeria's Civil Aviation Authority, going on to become general manager of Air Algérie until 1995.

AEA is based at Hassi Messaoud, which is in the east of Algeria and is considered the capital of the country's oil and gas industry. AEA flies all over Algeria, mostly to the oilfields in the south of the country but also to the country's main airports – Algiers, Oran and Constantine.

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For longer routes, AEA uses a fleet of Beech 1900Ds similar to the one shown here (an aircraft that once operated in Gabon).

CONTINUED FROM PAGE 57

“Our customers are mainly joint ventures between Sonatrach, the Algerian state-owned oil and gas company, and international oil companies,” explained Djebbrine. They include the big names in drilling – BP, Statoil, Total, Agip – as well as some less familiar ones.

“These customers have very high safety and quality requirements and all contracts are attributed after a tender and auditing process,” added Djebbrine.

“We operate in a very rough environment. Temperatures can go above 50°C during summer and sand is everywhere! Sometimes pilots have to land on unpaved airstrips and maintenance is a daily challenge.

“That’s why AEA has developed a strong safety and quality policy. Airstrips are monitored through numerous audits. Hazards are reported to all operational structures and our staff receive special training to face the conditions. By sharing the information, we have developed a high level of collaboration with our customers and authorities to avoid any incident. We also choose the right aircraft to do the job.”

Brilliant aircraft for the job

And that’s where the two types of aircraft operated by AEA come in. The Let L-410 UVP-E-20 may not have a title that rolls off the tongue but it’s a brilliant aircraft for the job. The Let 410 airframe dates back to 1969 and, with its squat stance and durable landing gear, it’s a proven operator on many unpaved surfaces from rain-soaked grass to sand, snow and even slush.

The latest version has been thoroughly modernised with new GE engines, has more range, a better cabin and a semi-glass cockpit comprising of Universal, Honeywell and Garmin equipment.

The L-410 has been equipped with the latest GE H80-200 turboprop engines – a development

AEA FLEET AIRCRAFT

LET L-410 UVP E-20

PERFORMANCE

Max cruise speed:
219ktas (405 km/h)
Max range:
810nm (1500km)
Ceiling:
14,000ft (4200metres)
Climb rate:
1673ft/min (8.5m/s)
Single engine climb rate:
354ft/min (1.8m/s)
Take-off dist to clear 35ft:
1,673ft (510m)
Landing dist to clear 50ft:
1,640ft (500m)

WEIGHTS

MTOW:
14,550lb (6,600kg)
Max payload:
3,968lb (1,800kg)

DIMENSIONS

Wingspan: 65.55ft (20m)
Overall length:
47.23ft (14.4m)
Overall height:
19.12ft (5.8m)
Cabin height:
65.4in (1.66m)
Cabin width:
76.8in (1.95m)
Max pax: 19

ENGINES

2 x GE H80-200 producing
800shp, fitted with Avia 5-
blade propellers

BEECHCRAFT 1900D

PERFORMANCE

Max cruise speed:
280kt (518km/h)
Max range:
1439nm (2665km)
Ceiling: 25,000ft (7,620m)
Climb rate:
2615ft/min (13.3m/s)
Single engine climb rate:
590ft/min (3m/s)
Take-off dist:
3,728ft (1136m)
Landing dist: 2,350ft
(716m)

WEIGHTS

MTOW: 17,230lb (7,765kg)
Useful load:
6,440lb (2,882kg)

DIMENSIONS

Wingspan:
57ft 9in (17.64m)
Overall length:
57ft 8in (17.62m)
Overall height:
15ft 5in (4.72m)
Cabin height:
5.9ft (1.80m)
Cabin width:
4.5ft (1.37m)
Max pax: 19

ENGINES

2 x Pratt & Whitney
PT6A-67D turboprops,
each producing
1,279shp (955 kW)

of the earlier Walter M601 engines. GE bought the Czech engine maker in 2008 to help it compete with Pratt & Whitney in the business and corporate aviation market.

The H80 turboprop engine develops 800shp maximum continuous power, also available for take-off, giving it significantly better hot and high performance. The H80s are equipped with steel Avia AV-725 5-blade propellers intended for the harsh desert conditions.

AEA’s fleet of 15 aircraft also includes several Beechcraft 1900D 19-seaters. The 1900D has a longer range than the Let and is faster, so better for the longer routes.

Face our environment

“We chose those aircraft because they offer the best characteristics to face our environment and to meet our customers’ demand for safety and quality,” said Djebbrine.

“We knew the Let L-410 UVP-E-20 would be a hit in Algeria due to its capability. It’s fast, robust and efficient. It is particularly suitable for rough terrain and the climatic conditions of the Sahara Desert, and opens up new possibilities for the transport of personnel in our country.

“The Beechcraft 1900D is a long-time worldwide success,” he continued. “It’s like having a ‘mini airliner’ at your disposal. It is ideal for long flights in Algeria and our customers use it a lot for north-south flights.

“Our partnership with the South African company, Solenta, is very fruitful on this B1900D segment. Their dedication to offering a high level of maintenance allows our B1900D fleet to face the conditions of southern Algeria.”

AEA’s plans for the future include expanding its medevac operations – it already runs ‘mercy’ flights. It also plans to grow the fleet of L-410s, further improve safety and quality, and, most importantly, develop training and hiring to bring more young Algerians into aviation.



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WAR ON TERROR

ARAB COALITION HITS ISLAMIC STATE TARGETS



*When the US-led coalition fighting against the jihadist Islamic State (IS) group expanded the scope of its operations to hit terrorist targets in Syria, Arab nations contributed about one third of the attacking air component, decisively demonstrating their commitment to combating Islamist extremism and showing off the military capabilities that they have built up in recent years. **Jon Lake** reports.*

General Jack Keane, a retired four-star general and former vice chief of staff of the United States Army, who is now a defence analyst currently serving as chairman of the board for the Institute for the Study of War, probably summed things up best.

“We have five Arab Muslim Sunni-based nations attacking a Sunni-based terrorist organisation and that is something we have not seen in the past. That is really quite an accomplishment,” he said.

IS has seized large swathes of territory in eastern Syria and across northern and western Iraq, using extremely brutal and repressive methods that have included mass killings and widespread executions, prompting a mass movement of Syrian refugees into Turkey.

The US started mounting air attacks against IS targets in Iraq during August and then began what it called “expanded air strikes” on September 15. It had already launched 160 air strikes in Iraq by then.

The first strikes in Syria began on September 22 and were conducted independently by the US. They hit targets west of Aleppo against the Khorasan Group, which is described as an al Qaeda splinter group that is actively plotting against US homeland targets. These strikes included the firing of eight Tomahawk TLAM cruise missiles.

A second and a third wave of attacks on September 22 included US forces and their Arab partners, focusing primarily on the city of Raqqa, the capital of IS’ self-proclaimed Islamic State, as well as areas to the east, closer to the Iraqi border.

These attacks were made by a mix of fighter and bomber aircraft, and Tomahawk land attack missiles (TLAMs).

In all three waves, the US employed 47 TLAMs launched from USS Arleigh Burke and the USS Philippine Sea, operating from international waters in the Red Sea and North Arabian Gulf.

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Major Mariam Al Mansouri, the country's first female fighter pilot, and a Block 60 F-16 squadron commander, who led the UAE air strike missions.



CONTINUED FROM PAGE 61

About 48 aircraft were also involved in attacks against 22 separate targets, expending 200 weapons (approximately 150 of the munitions used were precision-guided). These naturally included US Air Force, Navy and Marine Corps fighters and bombers deployed to the US Central Command area of operations, including USAF F-22 Raptors, which made their combat debut, dropping joint direct attack munitions (JDAMs) on IS targets.

One third of the attacking aircraft was provided by the Arab partner nations, disproving US media statements that: “the contribution of the Arab nations was largely symbolic, and that the real firepower would be coming from the US”.

The participating aircraft included two Royal Bahraini Air Force F-16Cs, four Royal Jordanian Air Force F-16MLUs, four Royal Saudi Air Force F-15S Eagles, and four UAE Air Force and Air Defence Block 60 F-16E/Fs.

Qatar was also listed as a participant, though it is unclear whether the Qatari contribution went beyond basing, and whether or not the air force's Mirage 2000s took part in the attacks or in the overall operation, perhaps flying in a non air-to-ground role.

Unusually, several of the Arab nations participating in the operation went to some lengths

to publicise their contribution. Saudi Arabia identified Prince Khaled bin Salman as having been one of the RSAF F-15S pilots who took part in the mission. Prince Khaled is the son of the prime minister, defence minister and heir to the Saudi throne, Crown Prince Salman bin Abdulaziz.

Saudi Arabia's decision to publicise the prince's role in the mission demonstrated the Saudi resolve against extremist groups to its western allies, and marked the Islamic State as being an enemy of the Saudi crown.

Support and backing

Before the mission, King Abdullah promised President Barack Obama that Saudi Arabia would join the USA in supporting moderate Syrian rebel groups and promised Secretary of State John Kerry whatever Saudi support he needed when Kerry asked for Saudi co-operation in building a coalition.

The United Arab Emirates has been even more vocal in its support for operations against IS.

Yousef Al Otaiba, the UAE's ambassador to the United States, went on US television to express his belief that it was important for Arab and Muslim states to stand up against IS and to recognise the group as a serious threat. “I think it's important for us moderate Arabs, moderate Muslims, to step up and say, ‘This is a threat to our country, a threat to

our way of life,’” he said. “We will bring whatever it takes to defeat Islamic State and other forms of extremism.”

The UAE Air Force and Air Defence also highlighted the contribution of one of its own pilots, Major Mariam Al Mansouri, the country's first female fighter pilot, and a Block 60 F-16 squadron commander, who led the UAE air strike missions.

Ambassador Otaiba said: “I can officially confirm that the UAE strike mission was led by female fighter pilot Mariam Al Mansouri. She is a fully qualified, highly trained, combat-ready pilot and she is on a mission.”

Major Al Mansouri has an undergraduate degree in English literature and became the first woman to join the Khalifa bin Zayed Air College, graduating in 2007.

The UAE has participated in coalition operations outside its own borders before, deploying F-16s and Mirages to participate in ‘operation unified protector’ over Libya in 2011. But the Saudi participation was a new departure for the RSAF, which has not flown offensive missions outside the Arabian Peninsula since the Gulf War of 1991, when its Tornados were heavily committed to ‘operation desert storm’.

Syria's President Assad was “informed” of the air strikes, but Syrian ‘approval’ was not sought.

Confusion reigns as air strikes hit Libya recovery

There has been claim and counter claim but, according to US sources quoted by the Associated Press and the New York Times, the UAE Air Force and Air Defence has carried out at least two airstrikes against Islamist militia targets inside Libya. Jon Lake reports.

Violence in Libya has surged recently between two rival groups who overthrew Muammar Gaddafi during the 2011 uprising.

The main factions are the Libya Dawn-led alliance from Misrata, which includes some Islamist militias and which supports the previous GNC parliament (dominated by Islamists), and the Zintan-led alliance, which supports the new parliament in Tobruk (dominated by liberals and federalists), and which has ties with the national army and with General Khalifa Haftar, who has been attacking Islamist groups in the eastern city of Benghazi.

The Libya Dawn alliance has received support from Qatar, which has provided weapons and money to Islamist forces in Libya since 2011, when it played a major role as a supplier of weapons to rebel groups.

Qatar has historically supported other Islamist organisations, including the previous Muslim Brotherhood government in Egypt under Mohammed Morsi, and Hamas in Palestine.

Support and backing

By contrast, the anti-Islamist forces in Libya have received support and backing from the United Arab Emirates, Saudi Arabia and Egypt under President Abdel-Fattah el-Sissi (who succeeded Islamist President Mohammed Morsi). All three nations are staunchly opposed to the Muslim Brotherhood.

The United Arab Emirates and Qatar both played prominent roles in the military intervention that toppled Gaddafi, but today the two neighbouring Gulf nations and GCC allies find themselves in opposing camps.

The attacks were mounted as fighting in Tripoli reached fever pitch.

The first air strikes, which took place on Monday August 18, hit various Islamist militia positions, including an

ammunition/weapons depot, reportedly killing six people.

A second round of strikes mounted early on Saturday August 23 was concentrated in the southern part of Tripoli, and targeted vehicles, rocket launchers and a warehouse. These attacks reportedly left at least a dozen people dead.

The air strikes may have been intended to prevent the capture of Tripoli Airport by militia forces, but failed to do so. Libya Dawn militia forces seized control of the airport soon afterwards. This left the Misrata alliance effectively in control of the capital, as its rivals withdrew from the city.

Libyan officials labelled the airstrikes as “foreign” and pointed out that the country’s air force did not have the capability to fly night ground attack sorties.

American officials have not publicly attributed the strikes to any country but made it clear that the United States did not take part in, or provide any assistance in, the bombing raids. It also stated that the USA did not even receive any prior notification of the attacks.

One anonymous US official told the AFP news agency: “The UAE carried out those strikes,” and expressed the belief that Egypt had also been involved, while Saudi Arabia had not.

Another US official said that Washington had known about Egyptian and UAE plans for a possible operation and had warned them against going through with it.

Unsubstantiated rumours

Egypt denied any role in the attacks. Egyptian Foreign Minister Sameh Shukri said that reports of an Egyptian role in the airstrikes were “unsubstantiated rumours”, and that Egypt had: “no direct connection to any of the military operations on the ground in Libya”. Shukri added that Egypt respected Libya’s popular will and elected parliament, and hoped to help train its armed forces.

Emirati officials have not commented on the attacks, though debris found in the aftermath of the raids included the fin from a Paveway II guidance kit for the Mk 82 bomb, and US officials have said that they have collected sufficient evidence to determine that the UAE Air Force and Air Defence was behind the attacks.

It seems that the UAE strike force launched from Egyptian air bases (despite Cairo’s denial of what it called “direct involvement”) supported by UAE AF&AD tankers and ISTAR assets.

The United States, Britain, France, Germany and Italy expressed concern that “outside interference in Libya exacerbates current divisions and undermines Libya’s democratic transition”, while Bernardino Leon, the UN envoy to Libya also labelled the attacks as “unhelpful”, stating that: “Any kind of intervention or foreign intervention won’t help Libya get out of chaos.”



The UAE attack force believed by the US to have been behind the raids on Libya.

Desperate measures for Syria's air force

When the Syrian civil war began in 2011, the Syrian Arab Air Force's fleet of about 50 MiG-21s, 30 MiG-23BNs, and 30 Su-22s was able to generate about 250 sorties per day.

However, serviceability of these elderly aircraft has declined as a result of disruptions to the supply of spares, and the effective closure of the air force's primary maintenance and overhaul facility at Aleppo.

The daily sortie rate has reduced to 60-70 and, although combat losses have been relatively light, the air force is in a state of crisis and is unable to sustain the required tempo of operations.

Aero L-39 Albatros advanced trainers were pressed into service in the ground attack role soon after operations began, using their twin-barrelled GSh-23 automatic cannon and UV-16-57 57-mm rocket pods.

But several were lost when one of their bases (Ksheesh/Jirrah) was overrun by IS.

Though they had been retired in 2009, Syria's 25 or so MiG-25s provided one part of the solution, and two MiG-25RB reconnaissance aircraft (also capable of dropping FAB-500 500-kg bombs) were returned to service, together with a pair of MiG-25PD interceptors, which attempted to use R-40 AAMs in an air-to-ground role in April 2014.

More successfully, MiG-23MF and MiG-29 air defence fighters have been pressed into service in the air-to-ground role, armed with B-8M rocket pods on both types and Kh-29 (AS-14 'Kedge') EO-guided air-to-surface missiles on the MiG-29s.

These have proved to be more accurate than the older dedicated fighter-bombers, and have demonstrated greater availability and faster reaction times.

Long-standing Syrian plans to acquire more MiG-29s, and in particular the more advanced MiG-29M and M2 versions, have made slow progress. The first four of 12 aircraft on order have now been assembled, but deliveries are not scheduled to begin until 2016.



The MiG-23 and (inset) the L-39 Albatross are pressed into service in Syria.



Playing the King is an ace card

With a growing threat from Islamists, jihadists and insurgents, a number of Arab air forces are strengthening their ISR capabilities.

Jon Lake reports.

A number of operators of special mission versions of the Beechcraft 350 Super King Air – a popular intelligence, surveillance and reconnaissance (ISR) platform choice in the region – are increasing their King Air fleets.

L-3, Raytheon, Boeing and Lockheed Martin all offer slightly different ISR versions of the Super King Air.

L-3 produced the US Air Force (USAF) MC-12W Project Liberty and Spydr King Air 350 ISR aircraft, while Raytheon built the four King Air 350ER-based Shadow Sigint aircraft delivered to the UK RAF's No 5 Squadron.

Support and backing

Lockheed produced and operated a fleet of King Air 200s, 300s and 300ERs equipped with the medium-altitude reconnaissance surveillance system (MARSS) for the US Army's task force ODIN in Afghanistan, while Boeing has built a King Air 350-based enhanced medium altitude reconnaissance and surveillance system (EMARSS) ISR aircraft for the US Army, and the Yellow Jacket and reconfigurable airborne multi-intelligence system (RAMIS) ISTAR test-beds.

All have also produced or offered ISR and intelligence, surveillance, target acquisition, and reconnaissance

(ISTAR) Super King Air derivatives to export customers, some of which have been closely based on the programmes listed above, and others less so.

In June 2014, L-3 was awarded a \$41.5 million contract to provide four ISR aircraft in support of counter-terrorism efforts in Yemen. There was speculation that these would be Spydr King Air 350s, though the country previously received two special mission-variant examples of the Cessna 208 Caravan.

Raytheon produced five King Air 350ER-ISR platforms delivered to the Iraqi Air Force's No 87 Squadron in 2009 under the 'peace dragon' programme, plus a transport configured King Air. Iraq ordered another six aircraft a year later and had an eventual requirement for up to 24 ISR-configured King Airs, but none were delivered. In late June, the USAF awarded Beechcraft a \$7.8 million contract for one further ISR King Air, for delivery by the end of March 2015.

On August 22 this year L-3 received a foreign military sales (FMS) contract for two ISR-configured 350s for the Royal Saudi Air Force, to be completed at Greenville, for delivery before the end of 2015.

These new aircraft will join about 12 similar aircraft delivered between 2011 and 2013 to Nos 19, 41 and 50 Squadrons.



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Saudi Arabia wants to upgrade its five E-3A aircraft to the latest Block 40/45 status to maintain interoperability with US and coalition forces.



RSAF aiming to score five Sentries

Jon Lake reports on Saudi Arabian plans for its homeland security.

The US Defense Security Cooperation Agency (DSCA) notified Congress in August this year of a possible sale of five upgrade systems for the Royal Saudi Air Force's fleet of five E-3 Sentry airborne radar surveillance aircraft.

Saudi Arabia originally bought five E-3 airborne warning and control system (AWACS) under the 'peace sentinel' programme, which ran from 1981–1986.

The AWACS aircraft were augmented by eight KE-3A air-to-air refuelling tankers, two of which were subsequently converted by E-Systems to RE-3A standards with tactical airborne surveillance system (TASS) and one to RE-3B standards with the improved tactical airborne surveillance system (ITASS).

Saudi Arabia wants to upgrade its five E-3A aircraft to the latest Block 40/45 status to maintain interoperability with US and coalition forces, including the Block 40/45 E-3s flown by France and the USA, as well as Britain's E-3Ds.

The DSCA notification listed five Block 40/45 mission computing upgrade systems, which would include new computers, servers, and interactive displays, and which would enable a shift from mainframe-based computing to a set of networked servers and modern displays.

Software and hardware upgrades would allow existing buttons and switches to be replaced by a point-and-click user interface and drop-down menus.

The new systems would allow the automation of some existing tasks, including automatic air tasking orders and airspace coordination order updates, and would facilitate future upgrades. The upgrade would also include the supply of 20 AN/UPX-40 next generation identification friend or foe (NG IFF) systems with new receivers, interrogators and processor hardware and new communications equipment.

The radar system improvement programme (RISP)-upgraded radar would be augmented by "multisource

integration capability" – a form of sensor fusion that provides a coherent single picture from the radar, electronic support measures (ESM) equipment, Link-16, and other sources.

The upgraded aircraft would be accompanied by an updated mission planning system, as well as spares and repair kits, support equipment, publications and technical documentation, and personnel training and training equipment.

Work will be performed in Riyadh, Saudi Arabia (50%), Seattle, WA (30%); and Baltimore, MD (20%), and will be completed by June 2015.

SANG turning helicopter plan into reality

The Saudi Arabian National Guard (SANG) effectively revealed its plans to establish its own air arm when the US Defense Security Cooperation Agency (DSCA) notified Congress, in October 2010, of a proposed sale of some 150 helicopters.

The plan included 12 MD Helicopters (MDHI) MD 530F light helicopters, 36 Boeing AH-6i light attack helicopters, 36 Boeing Block III AH-64D Apache (now AH-64E Apache Guardian) attack helicopters, and 72 Sikorsky UH-60M Black Hawk utility helicopters.

Since then, there have been a series of contract signings.

In July 2012 the US Department of Defense (DoD) announced that MDHI had been awarded a contract to supply 12 MD 530F light helicopters to "an unspecified branch of the Saudi military", for delivery by July 2013.

In April this year Boeing received a \$234.7 million unfinalised contract covering 24 AH-6i armed scout helicopters, together with an initial spares package and ground support equipment. The contract was finalized on August 29.

And also in August, Sikorsky received a \$30.3 million contract modification for 12 UH-60M Black Hawk helicopters on behalf of the Saudi Arabian National Guard, having earlier received a \$105.3 million contract modification to "modify 8 UH-60M Black

Hawk Helicopters (from the USAF's MYP-8 multi-year procurement) to a general service configuration in support of the Saudi Arabian National Guard."

Nine days later, on August 28, Sikorsky received a \$33.6 million contract, covering initial spares and aviation ground support equipment for 24 UH-60M Black Hawk helicopters for the SANG.

Though no Apache aircraft contract has been announced, the DoD did say in January 2012 that it had awarded a contract to Lockheed Martin Fire Control to supply 12 AH-64 target acquisition and night vision systems for the SANG.

These aircraft numbers fit with a US federal business opportunities (FBO) request for companies to bid for the contract to support and maintain 12 AH-64E Apaches, 24 AH-6is and 24 UH-60M Black Hawks for the SANG, sustaining a flying programme of 100 hours per aircraft per year with a surge capacity of up to 200 hours per aircraft per year.

Initially, all the new SANG helicopters will be stationed at Khashm al-An Airfield, a new airbase that has been built in the eastern suburbs of Riyadh, where 24 aircraft shelters have already been erected, along with a 2,000 metre runway and taxiway for fixed-wing aircraft operations. Another airfield is to be built for the SANG at Dirab, southwest of Riyadh.

Iraq's emergency shopping spree

The deteriorating situation in Iraq has thrown its military aircraft re-equipment plans into disarray.

Jon Lake asks *what happens next?*

Top: Iraq's Russian buys include the Mi 28E helicopters and the Sukhoi Su-25s while, **bottom,** Aero Vodochody lost on the fighter contract but is now supplying pre-owned L-159s from the Czech Republic.

Iraq had been planning to rebuild its air force along US lines, operating largely US equipment, but this will not be delivered in time to play any part in the life or death struggle now being waged against Islamic State (IS) insurgents.

The Iraqi Air Force's 36 new F-16IQ aircraft are not scheduled to be delivered until sufficient pilots have been trained, and infrastructure is in place.

And the Iraqi pilot training machine has been disrupted by enemy action – not least by the capture of Tikrit airfield, where the Iraqi Air Force had been training pilots on the T-6 Texan II turboprop trainer, Cessna 172 and Cessna 208.

On the rotary wing side, helicopter operations by Iraqi Army Aviation have been heavily disrupted by attrition, and by the withdrawal of advisors and support personnel.

The Mi-17s and Mi-171s, which equip No 4 Squadron at Basra and No 15 Special Operations Squadron at Taji, have been reduced by combat losses, and by the capture of some aircraft on the ground.

The 24 armed Bell IA-407s and three T-407 trainers operated by No 22 Attack Helicopter Squadron at Al Taqaddum/Habbaniya and No 21 Attack Helicopter Squadron at Taji have been grounded due to the withdrawal of US personnel.

The result is that Iraq needs any air-to-ground attack platforms that can be delivered quickly, and needs to revitalise its training machine and ensure that it can keep running. This has meant turning away from the US to

hungrier suppliers, who may be more willing to ensure rapid delivery of relevant capabilities.

One emergency measure was the procurement of five Sukhoi Su-25 'Frogfoot' fighter-bombers from Russia, hastily refurbished at the 121st ARZ workshop at Kubinka and then delivered aboard an Antonov An-124 on June 28 2014.

Seven further Su-25s, this time from the Iranian Revolutionary Guards Corps (IRGC), arrived at Imam Ali Air Base, near Nasiriyah, on July 1. These were originally Iraqi aircraft that had sought sanctuary in Iran during the 1991 Gulf War, and which were subsequently assimilated into the IRGC, where they were joined by three new Su-25s from Russia.

Though their arrival had already been reported in two batches in September 2013 and January 2014, it now seems that the first of 30 Mi-28NE Night Hunter attack helicopters were actually delivered at the end of August 2014.

The deal was first announced in October 2012, and in July 2014 there were again reports that the first three had been delivered. On August 28 three Iraqi Mi-28NEs were noted at Rostov on Don ready to be airfreighted, and on August 30 the Iraqi MoD announced the arrival of the first batch of Mi-28s.

Iraq has also been looking to acquire second-hand helicopters and aircraft. The Czech Republic's defence minister announced that there had been talks to sell seven of their 17 Russian-built Mi-24 attack helicopters to Iraq.

Though Aero Vodochody lost the competition to supply Iraq with a new advanced trainer, the winning KAI FA-50s (T-50IQs), selected in December 2013, are not due for delivery until 2015-2016.

More recently, Iraq has approached the Czech Republic to buy 15 Aero L-159 light attack aircraft. Under the terms of the deal, Aero Vodochody will supply 11 retired L-159As (eight refurbished and three more for

spares), and four active Czech Air Force Aero L-159 aircraft (two single-seat L-159As and two two-seat L-159T1s).

Iraqi pilots would be trained in the Czech Republic.

The Czech military originally bought 72 L-159s but has been using only 25 of them (19 L-159As and 6 L-159T1s), leaving 45 aircraft available for potential export customers.

In the longer term, there is a Pentagon plan to quickly deliver six Boeing AH-64D Apache attack helicopters, upgraded to a partial AH-64E Apache Guardian configuration, to Iraq to allow Iraqi Apache training to begin, before delivery of 24 new-build AH-64E Apache Guardians.

It remains to be seen whether Iraq will last long enough for its air force to be able to turn the tide in the desperate struggle against the insurgents.



A private London-based company stands on the verge of launching an integrated military support solution that could have far-reaching consequences for air force training all around the world.

Jon Lake reports.

PRIVATE ENEMY NUMBER ONE...

On August 4, London-headquartered company ECA issued a press release claiming that its 'integrated opposing force' (IOPFOR), would make its debut in the Middle East during a six-week deployment covering the Kingdom of Jordan, the Kingdom of Saudi Arabia, Bahrain and the UAE.

The company said that this demonstration and evaluation (DEMEVAL) of its advanced but affordable integrated military training support solution was being made in support of an existing client, but that it would also showcase the IOPFOR system to other interested nations.

ECA said that the deployment would comprise six Eurofighter Typhoons acting as 'Red Air' aircraft (plus two spares), together with four surface-to-air missile threat emitters, two mobile command and control systems, space and cyber war assets, backed up by advanced simulation capabilities, and including the rangeless autonomous air combat manoeuvring instrumentation (AACMI), Link 16 including multifunctional information distribution system (MIDS), and non-drop weapons scoring (NDWS).

It boldly asserted that it was the first company in the world to exploit such advanced technologies in all domains (air, ground, sea, space, cyber war and synthetic training). This, said ECA chief executive and IOPFOR manager Melville ten Cate, made his company "a one-stop-shop for all military support needs, with a power-by-the-hour concept which will allow our clients to go from a cost of ownership to a cost of use model".

The blend of live training support and networked simulations will also allow the system to be used to support planning and advanced concept development for future military infrastructure investments.

With a smart brochure, a suitably stylish flying suit patch (motto: 'fab est ab hoste doceri' – 'it is right to learn even from an enemy'), and a smart address in the heart of the City of London, ECA seems to be finally on the verge of realising its grand vision, after what has been a long and sometimes frustrating struggle, fine-tuning, adapting and tailoring its offering in the face of changing and sometimes unfavourable political circumstances.

Learn the lessons

Realistic training is the key to success in military operations, allowing aircrew to learn the lessons usually imparted by real combat experience in a safe and controlled environment. Accurate replication of the threat is vital, and fighting against dissimilar aircraft types, flown by pilots from other air forces (or by specialised, specifically trained 'aggressor' or adversary pilots who are able to employ realistic 'enemy' tactics), is also useful.

However, few air forces have the resources to maintain dedicated opposing force (OPFOR) pilots and aircraft, and even the US Air Force has been forced to make economies, disbanding its Nellis-based F-15-equipped 65th Aggressor Squadron on September 26 this year.

There are a number of commercial companies

tasked with providing OPFOR and adversary training services – mainly in the USA – but most of these fly older aircraft types whose performance, missions systems, armament and equipment are unrepresentative of the real-world threat and which are, therefore, of limited training value.

ECA aimed to provide 'higher fidelity' training, using more representative, higher performance, more sophisticated 'threat' aircraft. Over a 10-year period it made a number of attempts to acquire and operate aircraft like the Sukhoi Su-27 'Flanker', MiG-29 'Fulcrum' and IAI Lavi, before coming to the realisation that it would need to pursue an alternative approach.

ECA's journey is more fully described in an expanded version of this article on the *Arabian Aerospace* website.

The ECA CEO acknowledges that the company made some mistakes in these early years, not least in failing to damp down press speculation and exaggeration.

"A *Financial Times* piece led us to believing in our own hype and we went public too soon in revealing that we were in talks with particular companies, virtually forcing our potential partners to refuse to confirm what we were saying."

But, behind the scenes, it is clear that ECA came very close to realising its vision as early as 2011, when (according to very reliable Emirati military sources) the UAE Air Force and Air Defence authorised ECA to negotiate with the

The Eurofighter Typhoon is a key element in the new package.



Russians for the acquisition of more than a dozen Su-35BMs and Su-30MKMs to equip a dedicated OPFOR force, whose aircraft would have been on the UAE military register, but which would be owned, operated and maintained by ECA.

When this initiative failed, ECA changed its approach, realising that by using aircraft from a national air force, flown by that nation's own pilots, it could effectively get around the certification issues that had dogged the company's previous attempts to buy and operate its own fast jets.

Thus, for the company's planned late autumn deployment to the Middle East, it is understood that eight Spanish and Italian Air Force Eurofighter Typhoons (including two spares) and about 20 Spanish and Italian pilots will be used, though ECA have resolutely refused to confirm the source of its aircraft.

Complex negotiations between the Spanish treasury, air force and materials directorate and with the Italian MoD and air force had not been concluded at the time of writing, but it is thought that agreement to use the Typhoons had been reached in most areas.

The selection of pilots with a minimum 'qualification' of 1,400 hours – graduates of the tactical leadership programme (TLP) or Fighter Weapons School, and qualified as four-ship flight leaders – has reportedly been concluded, and visas were being finalised for all personnel.

It is planned that five of the six aircraft will each fly two 70-minute sorties per day, five days per week, for the six-week deployment. Spain and Italy will not cede control of the aircraft, so the arrangement cannot accurately be termed as a 'lease'. Such detailed planning, however, suggests that this is a deal that is 'done', if not yet 'dusted.'

Over-concentration

However, ten Cate is clearly impatient with what he sees as an over-concentration by the press on the "nerdy and geeky" detail of what aircraft type will be used for OPFOR training, something that he views as an irrelevant distraction: "Everybody keeps coming back to the question about which plane we are going to use. But the plane isn't that important when you consider the big picture of the integrated network. The plane is just another tool in that network, same as ground-based

radars or antennas. The plane is a node on a network, it doesn't operate alone and nor does it operate by itself. We just need a generic, integrated aircraft with a data link, representative sensors and a particular performance."

He explained ECA's vision as being: "much more than a fancy aircraft. The real power comes from a global, dedicated network running networked simulators, live and synthetic training assets, combined with threat parameter databases... all accessible by clients because ECA is open source, with no political or commercial agenda.

"Clients will be able to use the network to build coalitions and coalition training adapted to their needs and the realities of the 21st century. Building coalitions is a big part of this, since no-one can afford to go-it-alone anymore," he insisted.

The CEO believes that the Typhoon is an ideal OPFOR aircraft, offering sufficient airframe and sensor performance to be able to simulate any threat, with any sensitive national data protected through the use of a dedicated OPFOR software drop,

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incorporating ECA's own proprietary mission data, and allowing the aircraft to use 'red air' tactics like distributed jamming and SAM control.

In ten Cate's vision, an adversary Typhoon "walks like a duck and quacks like a duck, but is actually a goose" and he is enthusiastic about an informal Eurofighter GmbH suggestion that the aircraft should use a new name – Tempest – to reflect this!

In the longer term, ten Cate's dream is for ECA to operate surplus tranche 1 Eurofighters, obviating the need to sell them off cheaply to nations like Argentina or Bulgaria, perhaps even buying some aircraft in the 2018-2019 timeframe.

An active electronically scanned array (AESA) conversion might be funded, as this would allow for the easier replication of threat radars. By then, ten Cate hopes, ECA will have "built credibility", perhaps sufficiently for the European Aviation Safety Agency (EASA) and the relevant national aviation authority to allow the company to operate its own fast jets under a 'military derogation'.

Even without procuring its own aircraft, ECA envisages being able to deploy larger IOPFOR force elements in future, with as many as 14 Eurofighter Typhoons operating as part of a wider and larger threat network, perhaps doing so as early as 2015.

Other air forces could participate in future IOPFOR exercises in the Middle East, perhaps including USAF F-22s. Recent operations against IS targets in Syria have included Saudi, Emirati, Jordanian and Bahraini force elements operating within a USAF-led coalition, demonstrating the value of exercising as a coalition to prepare for any future operations.

ECA's IOPFOR exercise will be good for the Italian and Spanish Air Forces, as well as for the company's Middle Eastern customers, providing

useful experience of deploying out of area for the Typhoon units, pilots and support personnel involved, and providing revenue-earning flying hours for the two cash-strapped Typhoon operators.

The pilots involved will gain from operating with Middle Eastern air forces who could be allies in future operations.

As for future OPFOR opportunities, ECA issued a press release in late January announcing that several of its IOPFOR capability elements would soon achieve 'initial operational capacity' after "years of preparation and planning" – some as early as the second quarter of 2014.

Key capability elements

ECA characterises its key capability elements as including: "Generation 4+" fighters and weapons systems; leading-edge ground-based air defence systems; advanced electronic warfare and intelligence, surveillance and reconnaissance (ISR) systems and platforms; as well as threat emitters and threat emulation systems. In the longer term, ten Cate has aspirations to operate dedicated tankers and transport aircraft.

ECA already has a letter of agreement to integrate IOPFOR elements into NATO's TLP, though the contract has yet to take effect.

NATO sources say the agreement covers four classes annually (with provision for a subsequent ramp up in the number of classes per year, if sufficient added value is demonstrated), but that OPFOR elements had only been partially defined.

ECA will base its assets at the Ciudad Real Central Airport, near Madrid, Spain, which closed in April 2012 after going bust, and which the company has a bid in to purchase.

Ciudad Real Central Airport has a 4,000metre runway and is located about 200km west of Albacete, the home of TLP, and is separated

from the main base by a desert, which would be an ideal location for an electronic warfare range, which ECA sees as vital if TLP is to be transformed into the European Red Flag. The airport has good facilities and could easily accommodate a cyber warfare facility, networked simulators and other IOPFOR infrastructure.

There is, believes ten Cate, a huge window of opportunity for the kind of service that he is offering. "Allied air forces can no longer rely on Red Flag (which was briefly suspended last year by budgetary cuts)," he insisted. "Europe needs to look after its own needs but does not have the budget to establish an equivalent to Red Flag. So Europe needs a commercial company to provide the service, and by leveraging off training in the Middle East, perhaps with Saudi, Jordanian and Emirati earnings, this can be done cost-effectively."

The company is now offering a low-risk 30-hour 'IOPFOR card' to allow potential customers to evaluate its training methodology and IOPFOR capability elements without having to commit major portions of their in-house training budgets.

ECA says that the IOPFOR will gradually expand to operate as a global real-time network, operating across four continents over the next few 24 months.

But everything hinges on the DEMVAL in the Middle East – which represents ECA's first opportunity to demonstrate its OPFOR offering, and which it will do in an area where there is plenty of unrestricted airspace, and where red tape and political obstacles may be more rapidly overcome.

Another false start could critically or even fatally undermine credibility and confidence in ECA's bold plans, whereas a successful deployment could be the foundation for an exciting new business.

Deployment could be the foundation of an exciting new business.





Australia welcomes its first Middle Eastern Air Force to its major exercise.

UAE pitches up at 'pitch black'

The United Arab Emirates Air Force made its debut at the Royal Australian Air Force's 'exercise pitch black 14', deploying six Dassault Mirage 2000-9 multirole fighters, supported by an Airbus A330 multirole tanker transport (MRTT).

This was the first appearance by a Middle Eastern air force at 'pitch black', and marked the increasingly close relationship between Australia and the United Arab Emirates.

Growing links between the UAE Air Force and Air Defence (AF&AD) and the Royal Australian Air Force (RAAF) have been fostered as a result of Australian military deployments to the Middle East region.

'Pitch black' is Australia's largest and most complex air exercise, and has been held in the vast Northern Territory every two years, with a range of overseas participants.

Unrestricted airspace

The Northern Territory enjoys an expanse of virtually unrestricted airspace, as well as the Delamere Air Weapons Range and Bradshaw Field Training Area, while the USAF's joint deployable electronic warfare range (JDEWR) can simulate a range of modern ground-based air defence threats, adding to the exercise's realism.

The area also enjoys excellent weather during the Northern Territory's dry season, something that cannot be said for Singapore or Thailand!

Exercise 'pitch black' began in the late 1980s as a small-scale air defence exercise hosted by Australia, with limited US and Singaporean participation. Since then it has evolved into a much larger, more complex, multi-national air combat exercise with a full spectrum of scenarios.



This year the three-week exercise included more than 2,300 personnel from seven countries, as well as 110 aircraft drawn from Australia, the United Arab Emirates, France, the United States, Singapore, and Thailand, while New Zealand deployed ground personnel.

The exercise was mounted from the two main military air bases in Australia's Northern Territory – RAAF Stations Darwin and Tindal.

Strike packages

For the exercise the blue force was primarily based at Darwin and carried out offensive counter air (OCA) missions, with strike packages attacking targets inside the exercise area, while the red force operated from Tindal as the fictional 'enemy', defending the targets.

Tindal-based RAAF F/A-18 Hornets provided the backbone of the red force, augmented by USAF and Republic of Singapore Air Force F-16s and by Royal Thai Air Force Saab Gripens, which were making their 'pitch black' debut.

Pitch black is not just an exercise for fighter aircraft, and Australian and Singaporean airborne early warning and control aircraft provided command and control for the participants, who were also supported by air-to-air refuelling tankers from Australia, Singapore and the UAE.

Top: Air Commander Australia, Air vice-marshal Mel Hupfeld, DSC and lieutenant colonel Salman Al Qubaisi from the United Arab Emirates Air Force in front of a Mirage 2000-9 at RAAF Base Darwin during 'exercise pitch black 14'.

Inset: Mirage 2000-9 brought to the Australian exercises by the UAE.



The upgraded F16s ready for action with Pakistan.

Turkey completes Pakistan's F-16 fleet modernisation

Pakistan has received the last four upgraded F-16 fighter aircraft from Turkey's Tuzas Turkish Aerospace Industries (TAI).

The last four F-16s were formally delivered during a ceremony at TAI's facilities in Ankara on September 2.

The 'peace drive II' programme contract was signed with the Pakistan Ministry of Defense in June 2009, and covered the avionics and structural modernisation of 41 surviving PAF F-16A/Bs.

Pakistan originally received two F-16As and four F-

16Bs under 'peace gate I', and 26 F-16As and eight F-16Bs under 'peace gate II'.

These were delivered between 1982-87.

Pakistan then ordered six F-16As and five F-16Bs under 'peace gate III', and 48 F-16As and 12 F-16Bs under 'peace gate IV', though deliveries of these were embargoed following Pakistani nuclear weapons tests.

Thirteen of the F-16As and 15 F-16Bs, ordered under 'peace gate III/IV' were completed, and eventually entered service with the US Air Force and US Navy in the aggressor role, although two were subsequently lost.

The 26 survivors were finally delivered to Pakistan as part of the 2005 'peace drive I' programme, which saw the delivery of 12 Block 52 F-16Cs and six two-seat Block 52 F-16Ds.

Work on the upgrade of the 41 surviving F-16A/Bs started in October 2010 and was planned for completion by September 2014.

Engineers and technicians

The avionics and structural modernisation was undertaken by TAI engineers and technicians, and by 72 PAF technicians trained by TAI. Flight-testing was undertaken by TAI test pilots.

After manufacturing and delivering 262 of Turkey's 270 F-16s (the first eight were US-built) under 'peace onyx I, II, III and IV', assembling the aircraft at TUSAS Aerospace Industries (TAI) at Akinci (formerly known as Mürted), Turkey also built 46 Block 40 F-16C/Ds for the Egyptian Air Force under the 'peace vector IV' programme. This marked the first sale of a foreign-built Fighting Falcon to a third-party nation.

TAI is upgrading 218 of Turkey's F-16 fleet (38 Block 30, 104 Block 40, and 76 Block 50 aircraft) and has successfully completed an avionics and structural modernisation of the F-16s of the Royal Jordanian Air Force.

Second Hurkus takes to the air

TC-VCI, TAI's second flying Hurkus prototype, made its 16-minute maiden flight on September 10 2014.

The aircraft took off from the runway of the 4th Main Jet Base at Akinci, near Ankara, at 07:47 local time. Flown by TAI test pilot Murat Özpala, the aircraft reached a speed of 140kts (193km/h) and an altitude of 8,500 feet.

The new Hurkus joins the first prototype (TC-VCH) in the flight-test programme, as well as two further aircraft built for static and fatigue testing.

By the time TC-VCI joined the test programme, the first aircraft had completed 85 sorties, totalling 75 flying hours, since making its own first flight on August 29 2013 (also in the hands of Murat Özpala).

The first aircraft is now expected to be grounded for modifications before it rejoins the test programme.

The new aircraft made its maiden flight in primer, with just the control surfaces, cowling and some wing parts painted.

The two flying prototypes are representative of the basic Hurkus-A, which will be

certificated by the European Aviation Safety Agency (EASA) for civil use by the end of 2015.

They will be followed by a prototype Hurkus-B, the military variant, which has a full glass cockpit (similar in layout to the cockpits of the F-16 and F-35), with integrated avionics, and a mission computer. This aircraft, together with 14 series production Hurkus-Bs, will be delivered to the Turkish Air Force in 2017, with the production aircraft following in 2018-2019.

The Turkish Air Force has options on 40 more, although TAI says that these could consist of a mix of more than one variant, once the air force has completed the process of defining its requirements for the armed Hurkus-C variant, which is expected to be able to carry a payload of 1,500kg (3,300lb) of munitions, sensors and extra fuel.

The Hurkus-C will be capable of weapons training, close air support and light ground attack, and may also provide support for the Turkish Army's attack helicopters.

TAI plans to offer another version to support the Turkish Coast Guard, with a forward-looking infrared sensor operated from the back seat.



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 **BOEING**

The Royal Air Force of Oman (RAFO) has finally retired its last four Sepecat Jaguar International fighter-bombers after a service career spanning 37 years. Jon Lake looks back over the Jaguars' history.

Oman bids farewell to the long-serving Jaguar

Oman took delivery of 27 Jaguars in total, consisting of 20 single-seat Jaguar Internationals designated Jaguar SO1, two ex-RAF Jaguar GR.Mk 1As, and five two-seat Jaguar Internationals, designated Jaguar B02.

An initial batch of 12 aircraft was delivered to what was then still known as the Sultanate of Oman's Air Force (SOAF) in 1977-78, with a second dozen following in 1983. The three individual aircraft (an ex-Indian OB and two ex-RAF GR.Mk 1As) were delivered as attrition replacements in 1982, 1986, and 1998 respectively.

The Omani aircraft were received in Jaguar International configuration, with avionics equivalent to the RAF's original GR.Mk 1 variant, including Marconi 920ATC navigation and weapon aiming sub-system (NAVWASS), but with more powerful Adour 804 engines.

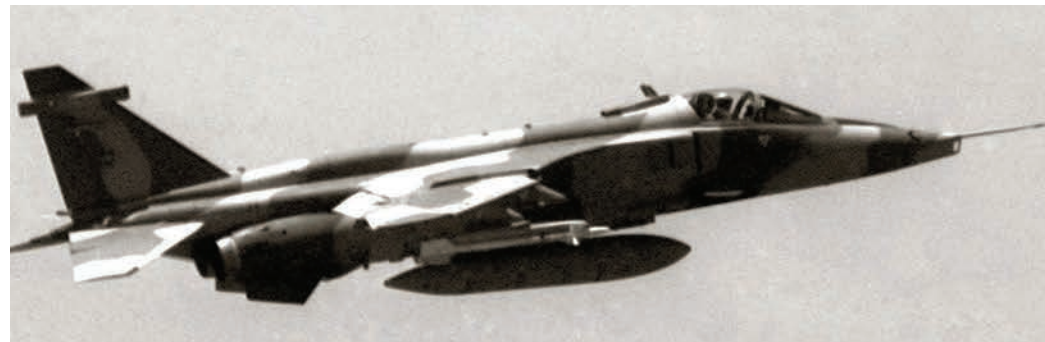
For their air defence commitment, the batch 1 Jaguars were fitted with over-wing launchers to allow carriage of the Matra Magic anti-aircraft missile (AAM).

Engineers and technicians

The aircraft delivered in the second batch were fitted with improved Adour Mk811-26 engines and had their outer wing pylons modified to carry the AIM-9P Sidewinder. The two two-seaters in this batch had the fin-mounted ARI 18233 radar warning receiver (RWR), which was normally only fitted to single-seat aircraft, and they also had a fixed in-flight refuelling probe in place of the nose pitot tube, like French two-seaters.

It is believed that the first batch aircraft were subsequently brought up to the same standard, rendering the over-wing missile launch rails irrelevant. They were subsequently acquired for RAF Jaguars during the first Gulf War (operation Granby/Desert Storm) in 1991.

Three single-seaters from the first batch and one from the second were compatible with the BAe-built Jaguar reconnaissance pod, and these



(and perhaps a few other Omani Jaguars) also carried W Vinten Ltd recce pods.

The 21 surviving Omani Jaguars were upgraded with the Ferranti FIN1064 nav/attack system between 1986 and 1989, bringing them up to RAF GR.Mk 1A avionics standards.

Subsequently, in September 1997, the Sultanate of Oman signed an agreement with the UK Government to upgrade Oman's surviving Jaguars (20 aircraft, and not 19, as often quoted, consisting of 16 single-seaters and four two-seaters) to the latest RAF Jaguar 97 (GR.Mk 3A and T.Mk 4A) standard, including TIALD laser designation pods.

The £40 million upgrade was completed at the end of 2000.

Engineers and technicians

In early 2011, the UK swapped wings from higher-houred RAFO Jaguars with lower-houred wings from a number of prematurely retired ex-RAF Germany Jaguars that were being used for ground training at RAF Cosford. They were shipped out to Oman from East Midlands Airport on an Antonov An-124 in March 2011.

The first aircraft delivered to the SOAF had been handed over at Warton on March 4 1977, leaving for Oman three days later. Deliveries of the first 12 were completed by the spring of 1978, allowing the formation of No 8 Squadron at

Thumrait.

No 20 Squadron formed at Al Masirah to operate the second batch of aircraft, delivered in 1983.

In 1990 the SOAF was renamed as the Royal Air Force of Oman (RAFO). No 20 subsequently became the RAFO's first 'all-Omani' Squadron, with RAF loan service personnel transferring out in February 1993, shortly before the unit moved to Thumrait, allowing RAFO Hawks to occupy Al Masirah.

A handful of British civilian technicians employed by Airwork were still attached to the unit, along with two uniformed contractor pilots – 'Ducky' Drake and Scott MacLean.

No 8 Squadron retained a proportion of British 'loan service' and contractor technicians and pilots, and did not become 'all-Omani'. No 20 Squadron later amalgamated with No 8 Squadron as the fleet drew down.

As well as having significant numbers of UK personnel embedded within it, the RAFO Jaguar force retained close links with the RAF Jaguar squadrons, which frequently trained in Oman during 'magic carpet' exercises.

Following the withdrawal of the RAF's Jaguars in 2006, however, the RAFO forged close links with the Indian Air Force (IAF), with RAFO pilots periodically visiting the IAF airbase at Gorakhpur for simulator training.

A Royal Air Force of Oman Jaguar taxis towards the runway at Thumrait, Oman.

Far left: The Jaguar SO1 IL-38 in 1987.



In October 2009, Thumrait hosted six, single-seat, DARIN-I Jaguars from the IAF's No 16 Squadron (Cobras) and No 27 Squadron (Flaming Arrows) for exercise Eastern Bridge. In 2011, six RAFO Jaguars deployed to Jamnagar in India for a further exercise, Eastern Bridge II.

In October 2013, six Jaguars from the IAF's No 6 Squadron (Flying Dragons) visited Oman for the third exercise in the series.

Omani Jaguars were delivered in a sand/mid-stone (brown) wrap-around disruptive desert camouflage colour scheme, with Oman's shield insignia in red and white on the tailfin.

From 1983, the colour of the shield was changed to blue so that, briefly, the first batch aircraft with No 8 Squadron had red tail markings and the second batch aircraft used by the newly formed No 20 Squadron had blue.

From 2013, the RAFO began painting its surviving Jaguars in the new three-tone (sand and two shades of green) used on aircraft like the CN235, the C-130J and the NH90, and also applied a new, more intricate version of the national insignia.

At one time the RAFO had expected to bring Jaguars to an end in 2012, but after the chief of the Royal Air Force of Oman commissioned a study into the viability of continuing flying, the retirement date was postponed. Some hoped that the Jaguar would continue in service until

the second batch of F-16s were in service, sometime in 2015, and others hoped that the aircraft might serve on until the Eurofighter Typhoon arrived.

At least 11 Jaguars had been lost in accidents before 2013, and several more were withdrawn from use.

This had left nine aircraft in service as the planned long-term fleet, with three two-seaters (200, 213, 214) and six single-seaters (211, 215, 219, 220, 222 and 224). Unfortunately, two of the single-seaters (220 and 224) were lost in a collision on September 11 2013, and a twin-sticker (214) was written off after landing short while night flying.

Engineers and technicians

With just six aircraft in service, and with engine spares becoming increasingly hard to come by, the decision was taken to withdraw the aircraft from operational service on July 23 2014.

No 8 Squadron carried out a disbandment flypast at Thumrait on August 6, with the four remaining serviceable Jaguars (OS single-seaters 211, 215, and 219 and OB two-seater 213). These aircraft were then flown to Seeb to await a decision on their final disposal.

Another two aircraft (OB 200 and OS 222) were awaiting engines at Thumrait, and may now be scrapped there.

Two RAF 'loan service' pilots remained with No 8 Squadron until it disbanded. Wing commander Craig Wilson and squadron leader Tony Hedley then returned to the UK, the latter having clocked up 4,000 Jaguar flying hours as long ago as 2009.

The Jaguars will be replaced in the short term by Oman's second batch of Block 50 F-16s. No 18 Squadron at Thumrait formed in 2005 to operate the first batch of 12 Block 50 F-16s (eight F-16Cs and four F-16Ds), and another squadron will form to operate the 12 aircraft (10 F-16Cs and two F-16Ds) from the second batch, ordered under the Peace A'sama A'safiya II programme. Deliveries began at Fort Worth in April 2014, with four aircraft ferried to Oman on July 22.

Oman has also ordered 12 Eurofighter Typhoons to meet future requirements, and these are expected to be delivered by BAE Systems from 2017.

Oman's retirement of the Jaguar leaves the Indian Air Force as the only remaining operator of the type.

Some 161 BAE Systems- and Hindustan Aeronautics-built aircraft serve with five frontline Indian Air Force squadrons, Nos 5 and 14 Squadrons at Ambala (7 Wing), Nos 16 and 27 Squadrons at Gorakhpur (17 Wing) and No 6 Squadron (33 Wing) at Jamnagar.

Qatar signs \$11 billion Apache Guardian deal

Qatar and the US have formally agreed a multi-billion dollar defence deal for Apache helicopters and air defence missile systems.

Jon Lake reports.

Qatar's minister of State for Defence, Hamad bin Ali al-Attiyah, and US Defence secretary, Chuck Hagel, sealed a deal that means Qatar will purchase Boeing AH-64E Apache Guardian attack helicopters, as well as Patriot and Javelin air defence missile systems, with an estimated total value of \$11 billion.

The number of helicopters was not specified, though a March announcement had revealed that Qatar would buy 24 AH-64E Apache Guardians at a cost of \$2.44 billion.

The US Defense Security Cooperation Agency originally notified Congress of a possible foreign military sale (FMS) to the Government of Qatar for 24 Block III AH-64D Apache Longbow Attack Helicopters two years ago. At that time, the deal was valued at an estimated \$3 billion, including associated equipment, parts, training and logistics support.

The AH-64E Apache Guardian was originally known as the Block III AH-64D Apache, and is the current production version of the Apache. Some 634 AH-64Ds are being upgraded to AH-64E standards, and new-build AH-64Es are already being put together for a variety of customers, including the Royal Saudi Land Forces.

Saudi Arabia looks set to become the largest Apache operator outside the United States, with the Royal Saudi Land Forces' 12 existing AH-64Ds being augmented by 36 new AH-64Es, with 12 more going to the Saudi Arabia National Guard (SANG) and a further 10 going to the Saudi Royal Guard.

The AH-64E features improved digital connectivity (including Link 16 and the new joint tactical radio system), and is powered by more powerful T700-GE-701D engines with an upgraded transmission and new composite main rotor blades. The Longbow radar is upgraded, and the aircraft has the capability of controlling unmanned aerial vehicle (UAVs).

Qatar's Apache acquisition marks the final step in recapitalising and expanding the nation's ageing helicopter force.

The process began in 2008 when the Qatar Emiri Air Force signed a contract for 18 AgustaWestland AW139s, which equipped a new unit (the 3rd Rotary Wing), operating in support of various government agencies to perform a range of roles. The first aircraft was delivered in November 2009.

No 2 Rotary Wing's ageing aircraft are being replaced by subsequent orders – the four utility and eight ASV Westland Commandos of Nos 8 and 9 Squadrons by 22 NH Industries NH90 helicopters (12 of the TTH troop transport variant and 10 of the navalised NFH model) – while the 24 new Apaches will replace the 12 SA324G and two SA342L Gazelle light armed scout helicopters of No 6 Close Support Squadron. The new helicopters will approximately double the number of aircraft on charge, as well as being much more capable than the aircraft they are replacing.

Kuwait's tanker Hercs report for duty

The first pair of Lockheed-Martin KC-130J Hercules tanker/transports was delivered to the Kuwait Air Force (KAF) in August 2014, providing the service with a new air-to-air refuelling capability.

Three KC-130Js will augment three stretched L382G/L-100-300 Hercules transports with 41 Transport Squadron at Al Mubarak Air Base, the military enclave at Kuwait International Airport.

The aircraft are fitted with two outboard under-wing refuelling pods and can carry 57,500lbs of fuel, or 80,000lbs if an auxiliary tank is installed in the cabin. They will be used to refuel Kuwait's 35 F/A-18C/D Hornet tactical fighters and for military airlift duties, while also improving Kuwait's ability to participate in international humanitarian and disaster relief and missions.

The three aircraft were



Kuwait welcomes the first KC-130J.

initially delivered to Marine Corps Air Station Cherry Point, North Carolina, where the US company Aviation Training Consulting taught an initial class of four Kuwait Air Force pilots, as well as load masters and crew chiefs, to operate the KC-130J Hercules to US Marine Corps standards. They undertook ground school and flight simulator training before beginning a 45-day flight-training syllabus. A group of

ATC personnel will deploy to Kuwait to for in-country training of 12 additional pilots

The aircraft were inspected and retrofitted with additional safety equipment at Cherry Point before transitioning to Al Mubarak.

The KC-130J was developed for the US Marine Corps, which has operated the variant in Iraq and Afghanistan since 2005. The export sale to Kuwait is, therefore, being

managed through the Navy's programme office (PMA-207).

The Kuwaiti KC-130J programme began in July 2009 when the US Defense Security Cooperation Agency (DSCA) notified Congress of a potential sale of up to eight KC-130Js. The Kuwait Air Force subsequently signed a \$245 million contract for three KC-130J tankers in May 2010, with deliveries scheduled to begin in late 2013.



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The Textron AirLand Scorpion has re-written the aircraft development rulebook, having gone from initial development in 2012 to flying across the Atlantic to make its Farnborough debut in July. Now its manufacturer sees some countries across the wider Middle East and North Africa as a potential lead market. Jamie Hunter reports.

The Scorpion that won't sting on price

Given the impressive development timeline for Textron AirLand's Scorpion intelligence, surveillance and reconnaissance (ISR)/strike jet, it came as no surprise that the aircraft easily completed a seven-stage 4,700 mile journey from Wichita, Kansas, to take part in the UK's Royal International Air Tattoo and the Farnborough International Air Show in July.

The Scorpion, which started development in early 2012, only made its maiden flight on December 12 last year.

To date it has notched up some 130 hours of flight-testing at Textron's facility in Wichita.

The aircraft was deployed, with a small support team, across the Atlantic, to make it one of the highlights of the two UK events.

Textron is rapidly expanding its aviation portfolio and has developed the impressive Scorpion in short order as a major step in the company's development of an all-composite aircraft. Indeed, according to Textron chairman, Scott Donnelly, the Scorpion features almost no metal in its construction.

The new jet was developed by a joint venture of Textron and AirLand Enterprises, funded internally without any government support. Scorpion demonstrates the ability to offer strong capability at a reduced cost by using proven, off-the-shelf, commercial aviation parts and best practices, says the manufacturer.

Donnelly sees a huge gap in the market for ISR aircraft that fit in the niche between turboprops, like the MC-12, and the higher end and costly fast jets.

Prototype fielding and operational test manager, Andy Vaughan, said: "There's nothing in that gap that has enough power to drive sensors and have weapons on board. What we have is a strike aircraft that can do ISR, maritime patrol or border security, as well as be an advanced trainer." Vaughan calls the Scorpion something of a "Swiss army knife aircraft".

The design and configuration of the Scorpion has been created with the mission firmly in mind.



The Scorpion's 6,000lbs of fuel can be augmented with an internal fuel bladder in the aircraft's payload bay, or with external drop tanks. An aerial refuelling probe is also in the test plan, allowing for missions well over five hours, but this may be later down the line as such aerial trials are the most costly, and cost reduction is right near the top of the Scorpion 'must have' list.

The aircraft has been developed as a military project, but with a commercial programme mind-set, to allow it to be agile and responsive to potential customer requirements as they emerge.

Prime requirement

The modular design of the aircraft is something that Textron AirLand is keen to outline; the cockpit, for example, is removable at the bulkhead.

The two-seat design is aimed at both mission roles and training applications. "Non-traditional ISR (NTISR) is a challenge for single-seat aircraft, [so] we can have a dedicated backseat combat systems operator (CSO)," remarked Vaughan.

The twin-canted tails are modular and easily removed.

The clean-sheet design all-composite straight wings are configured for external stores, with the prototype aircraft on show at Farnborough featuring six hardpoints loaded with a wide

variety of stores, from the Raytheon Paveway IV small diameter bomb, to the new Textron G-CLAW clean area munition.

These wings can still be removed in around an hour and their long, straight design is all about ISR endurance. "We have long loiter at slow speeds," said Vaughan, citing typical performance of around 150-200kts at 15-20,000ft.

With 4,000lbs of thrust apiece, the engines give the Scorpion the same thrust-to-weight ratio as the A-10. It has a maximum speed of around 450kts and has flown at altitudes up to 30,000ft. Vaughan elaborated: "The aircraft is a little under 12,000lbs and you get 9,300lbs of payload – that means fuel, sensors and weapons."

The Scorpion has dual Honeywell TFE731-40AR engines and, with dual generators on each, this provides an abundance of extra power to drive multiple sensors.

Vaughan continued: "Really it's about the Scorpion's internal payload bay; that is the quintessential piece of the aircraft. Synthetic aperture radar/ground moving target indicator (SAR/GMTI), surface search radar, electro-optical/infra-red (EO/IR), signals intelligence (SIGINT) packages – the sky's the limit.

"We can accommodate 3,000lbs



“What we have is a strike aircraft that can do ISR, maritime patrol or border security, as well as be an advanced trainer.”

ANDY VAUGHAN

of modular ISR equipment out of the slipstream of the aircraft – it’s not unreasonable to think someone might buy the aircraft and never put anything on the wings.”

Weapons can also be accommodated internally. “We have called it a payload bay,” said Vaughan, “but in the back is a segment that is taller and we are looking at installing common vertical launch tubes.”

Textron AirLand is targeting under \$20 million for the standard aircraft with a 15-inch EO/IR turret and weather radar installed. It also says that the Scorpion has an operating cost of just \$3,000 per hour, a fraction of running an F-16.

“We have tried to keep costs down,” said Vaughan, bearing in mind the current financial climate affecting many air forces. “We do that with Citation jet parts.

“We are already competing a second engine to keep costs down,” added Vaughan. The Pratt & Whitney PW-545C is understood to be a possibility in case customers should have a preference.

The manufacturer is keenly aware that the T-6 Texan II is also in its portfolio now, having acquired Beechcraft late last year. Vaughan said: “We don’t directly compete with the AT-6 as that is a dedicated strike platform with one sensor.”

One of the criticisms pitched at light attack

types, such as the AT-6, has been their robustness to operate in contested environments. Therefore, electronic warfare and self-protection systems are likely to be on the cards for the Scorpion, if required by the customer. “We are only going to put in what customers want to keep cost down,” said Vaughan.

Textron AirLand is pitching the Scorpion as being exportable from day one, and aiming at potential customers in regions like Africa, the Middle East and Asia. Vaughan said Textron was talking to anyone currently flying an A-37 Dragonfly or an OV-10 Bronco. The aircraft could also fill the slot as an F-5E Tiger II replacement.

Potential customer

Vaughan commented: “We are talking to a couple of people who make small active electronically scanned array (AESA) radars and we are in discussion with a potential customer who wants that capability.” A small AESA radar would potentially provide a fire control capability for the air-to-air role, should a customer require it.

Textron AirLand is also bearing in mind its home market, despite assertions from senior US Air Force officials that they must protect funding for their big ticket programmes such as the F-35 Lighting II. Vaughan said: “We think there is a lot of potential for the Air National Guard. Why

not use a lower-cost platform and not burn the hours up [on expensive fighter types].”

The Scorpion’s avionics are fully certified and federated, as well as being ruggedised to meet military specifications.

Textron AirLand has been keen to avoid costly operational flight program (OFP)-based systems, such as those in current F-15 and F-16 programs that require users to return to the OEM for upgrades.

Textron AirLand is “looking closely” at the US Air Force’s T-X trainer programme to replace the venerable T-38 Talon, with Textron’s TRU Simulation+ training business also heavily involved in the simulation market.

Clearly, should it throw its hat into the ring for T-X, it would point to the swift research and development work it has completed to prove that Textron can move fast to meet requirements and keep costs down using proven technology rather than what it calls a “high-end solution”.

It would also need to look at meeting all T-X key performance parameters (KPPs), as set out by the US Air Force. For example, it is currently looking at a probe for in-flight refuelling, and that may need to be revised to encompass a boom refuelling capability for dry hook-ups, should T-X demand it.

Sensor and then weapons testing is planned for later this year.

Sea change in Arab maritime patrol solutions

With the entry into Turkish Navy service of the Meltem II-configured CN-235MPA in April 2014, and the first flight of the C-295MPA for Oman on August 1, Airbus Military is riding high in the competition to supply modern maritime patrol aircraft. Jon Lake looks at the situation in the GCC and the wider Middle East.

In recent years an increasingly cash-strapped USA has progressively expected its regional allies to share in the burden of defending themselves.

Arab air forces have been forced to expand and to embrace new roles – particularly in areas that have previously required a standing US military presence, rather than more occasional ad-hoc deployments.

With vital offshore oil and gas fields vulnerable to terrorist attack and with illegal immigration, smuggling and piracy on the rise, maritime patrol is one of the most important of these newly acquired roles for regional air arms.

Though there is a regional submarine threat (posed by Iran, for example), there is, as yet, little appetite or need for very-long-range, blue water oceanic anti-submarine warfare (ASW) capabilities offered by the most capable maritime patrollers.

In some cases, a limited maritime patrol capability is already well established, for example using role-equipped Beech King Airs (Egypt), Short Skyvans (Oman) or Dash Eights (UAE).

ASW/ASV helicopters have also been in service in the region for some years, including Eurocopter Dauphins in Saudi Arabia and the UAE, Super Pumas in Saudi Arabia, Kaman SH-2 Seasprites in Egypt, Westland Sea Kings and Commandos in Egypt and Qatar, and Westland Lynxes in Oman.

Exclusive economy zone

There is, however, an urgent need for the kind of exclusive economic zone (EEZ) protection, littoral surveillance, and robust coastal anti-surface vessel (ASV) and ASW capabilities that are offered by what might be termed as the “second tier” of maritime patrol aircraft (MPA) – from the CN-235 and ATR42 to the C295 and ATR72, as well as new entrants to the market like Saab’s 340 Maritime Security Aircraft and Saab 2000 MPA.

And, thus, while Boeing continues to energetically promote its P-8 Poseidon in the region, several of these less capable (but more cost-effective and arguably more relevant) types have won orders in the region.

The most recent MPA to be introduced into service in the region is Turkey’s Meltem II configured CN-235MPA, while

the C295MPA for Oman is now flying.

Turkey’s Meltem maritime patrol aircraft programme began in 1998-2002, with the delivery of three CN-235s to the Turkish Coast Guard for EEZ surveillance missions and of six CN-235s to the Turkish Navy for anti-surface warfare (AsuW) and ASW missions.

These Meltem-I aircraft were only ever intended to be an interim step, and the Meltem-II programme was launched in September 2002, with Thales Airborne Systems and TAI (together with local contractors Havelsan, Aselsan and Milsoft) teaming to upgrade the aircraft to the new standard. This included a Thales AMASCOS maritime patrol mission system, new electronic support measures (ESM) and defensive avionics systems, a tail-mounted magnetic anomaly detection (MAD) system, a search radar antenna under the forward fuselage and electro-optical and infrared (EO/IR) systems.

There is also an EO/IR turret under the port main undercarriage sponson, as well as six under-wing hardpoints to carry AM-39 Exocet-Missiles or Mk.46 torpedoes.

According to the original contract, the aircraft were supposed to enter service in 2007. In the event, four “initial standard maritime patrol aircraft” (actually unarmed maritime surveillance aircraft) were delivered by prime contractor Thales, entering service between February and June 2012. Three Meltem MSA for the Coast Guard were commissioned in 2013. The initial configuration did not include armament or Link-16.

On April 28 2014, Thales ceremonially handed over the fifth of six Navy aircraft upgraded to the final Meltem II standard (including integration of the Raytheon Mk 46 torpedo).

Array of sensors

TAI is already working on the ATR72-600-based Meltem III ASW aircraft, which uses the same Thales AMASCOS maritime patrol mission system, integrated with an array of sensors that include Thales’ Ocean Master search radar, side-looking airborne radar (SLAR), an EO/IR turret, a magnetic anomaly detector, an acoustics system and an ESM system. Some of these sensors come from Turkish firms.

An initial contract was for 10 ATR-72-500 ASW aircraft, but just two ATR-72-500 aircraft will now be delivered in TMUA utility configuration, with six armed TMPA ATR-72-600s.

The Royal Air Force of Oman ordered five C295 transports and three C295MPA maritime patrol aircraft in 2012, becoming Airbus Military’s first Gulf Cooperation Council customer for the type. The first of the C295MPA maritime patrol aircraft made its maiden flight from Seville-San Pablo on August 1.

The C295 is already qualified with the Mk 46 torpedo for anti-submarine use, and is undergoing trials with the MBDA Marte Mk 2 anti-ship missile. Its sensors (which include a search radar, SLAR, MAD and EO/IR) are integrated via an updated, more operator-friendly version of Airbus’ fully integrated tactical system (FITS).

Oman’s C295 is flourishing



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It is the biggest business aviation event in the world and Alan Peaford was at the NBAA Convention in Orlando to get the latest news from the sector.

Middle East slipping in latest Honeywell forecast

While Honeywell is forecasting up to 9,450 new business jet deliveries worth \$280 billion from 2014 to 2024 in its 23rd annual Business Aviation Outlook, the figures for the Middle East and Africa are projecting a downturn against earlier estimates.

The Honeywell forecast is a key launchpad for the annual NBAA event, setting the mood for the industry as it converges on the show.

The 2014 Honeywell outlook was positive, as it predicted a 7-8% increase in projected delivery value over the 2013 forecast. But the Middle East projection showed a hint of concern.

"Industry deliveries in 2015 are anticipated to be up modestly again, reflecting momentum from several new model introductions and some gains linked to incremental global economic growth," said Brian Sill, president, business and general aviation, Honeywell Aerospace.

The share of projected five-year global demand attributed to the Middle East and Africa region moved below its historical range of 4-7% this year.

New jet purchase

Across the MENA region, just 18% of respondents' fleets are projected to be replaced, or added to, with a new jet purchase, down from 26% last year.

The level of purchase plans is under the world average but, Sill said, that was unsurprising given that it has been a year of significant political upheaval and ongoing conflict in the region, as well as one in which oil prices have drifted lower and health crises have emerged in Africa.

Regional distress has taken a toll, with operators scheduling their purchases later in the next five-year window than expected last year, with only 21% of purchases planned before 2017.

Honeywell said that, despite lower overall purchase expectations, operators continue to focus on larger-cabin aircraft classes, ranging from super midsize through ultra-long-range and corporate jetliner, implying these types of aircraft will command the bulk of the value billed from now until 2024.

This large-cabin group is expected to account for more than 75% of all spending on new business jets in the near term.

Volume growth between now and 2024 will be led by these classes of aircraft, reflecting 60% of additional units and nearly 85% of additional retail value.



ME market could make new Discovery

Discovery Aircraft believes the Middle East could make an interesting market for its two general aviation aircraft that made debut appearances at Orlando. It debuted its two-seat XL-2 piston single, and the five-seat, twin-engined Discovery 201.

Discovery acquired the rights to manufacture the IFR-certificated, \$240,000 Continental IOF-240B-powered, XL-2 from Liberty Aerospace in April and is planning to restart production next year.

The high-wing \$1 million multi-mission 201 is scheduled to enter service in the third quarter of next year.



UAS helps wish come true

The Dubai-headquartered UAS International Trip Support company used NBAA to kick off a month-long \$50,000 funding drive for the Make-A-Wish foundation, a charity focused on providing unique experiences for children suffering terminal illnesses.

Mid-size debuts to the power of three

Three aircraft competing in the mid-size market made their debuts at NBAA.

The latest Learjet 85 flew in, six months after its first flight and with 60 test flights under its belt. The much-delayed programme – it was scheduled for entry-into-service last year – still has no projected certification date.

Much closer to delivery are the competing Cessna Citation Latitude and the Embraer Legacy 450.

Making its debut on static display at the NBAA convention, the second Latitude prototype (internally designated 'P1') reveals how far Cessna has pushed the company's own boundaries inside the cabin, said Chris Hearne, Cessna's vice-president for jet programmes.

The full production interior reveals a cabin with a feeling of width and height more commonly associated with a super-midsize jet, but packaged with a length slightly shorter than found on the Sovereign in the midsize category.



The latest Learjet 85.



Bombardier launches latest Challenger

Bombardier used NBAA to launch a long-expected avionics, interior and propulsion upgrade for the popular large-cabin Challenger 605 – and named it Challenger 650.

It was launched in partnership with American fractional ownership programme NetJets, which had placed a firm order for 25 Challenger 650 jets, formerly referred to as the Challenger 605 'NG', with options for 50 additional aircraft, some two years ago.

Deliveries of the \$32.5million aircraft are scheduled to begin in 2015.

It features enhanced GE CF34-3B engines, which offer greater thrust, shorter take-off distance, extra payload capacity and greater range capabilities out of 'challenging' airports.

Bombardier said it would have a true 4,000nm (7,408km) range capability, connecting Dubai with London and London with New York.

Bombardier Business Aircraft president, Eric Martel, said: "This aircraft will provide our customers with the ultimate in-flight experience, a superior

baseline offering and the lowest direct operating costs in its class. With the Challenger 650 jet, they will have it all."

The Challenger 650 updates the avionics suite with the Rockwell Collins Pro Line 21 Advanced system. As incorporated into Bombardier's Vision flightdeck architecture, it also adds extra functionality with a new multiscan radar and a synthetic vision system, which allows the aircraft to land in 100ft minimum Category 1 conditions.

The cabin will feature redesigned seats and galley, an advanced and well-equipped cabin management system, and Bombardier claims the largest-in-class HD monitors, audio video on demand, Bluetooth integration and "industry-leading" connectivity capabilities.

Meanwhile Rockwell Collins announced that it would be offering a retrofit next year for the Challenger 605 that will see the Pro Line 21 system match that on the new 650 aircraft.

Mohammad Abu Libdeh: "A partnership made absolute sense."



Hadid forges link with Satcom Direct

Dubai-headquartered flight support company, Hadid, is to partner with Satcom Direct to jointly offer flight planning, aircraft datalink, flight-following and international trip support services.

With the datalink service fully compatible with all avionics and airframe manufacturers, Hadid announced the partnership at NBAA as "a revolutionary benefit to the 24/7 team of professional and certified Hadid dispatchers using high-tech industry-standard flight systems to ensure the smoothest flight planning and tracking".

The company said it has turned its focus to a higher level of support service, with extra care for business aviation flights. It was expanding its global presence further, bringing the company's global footprint to a total of 19 offices.

"With Satcom Direct and Hadid International Services being industry leaders in their respective fields, a partnership made absolute sense," said Hadid CEO Mohammad Abu Libdeh.

Hadid customers will now have the freedom to uplink their flight plans, ensuring that pilots, passengers and VIPs experience reliable communication from nose to tail with crews able to access digital ATIS, airport weather, en-route winds, graphical weather, flight plan uploads, pre-departure clearances, oceanic clearances and e-mail messaging to/from the aircraft.



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A photograph of a man and a woman walking away from the camera on an airfield. The man is wearing a purple shirt and dark trousers, carrying a briefcase. The woman is wearing a dark jacket and trousers, holding a smartphone. They are walking towards a private jet. The background shows a clear sky and the tail of the aircraft.

To learn more, visit jeppesen.com/BA71.



New brand for Piaggio

Abu Dhabi investment company, Mubadala, has seen its subsidiary, Piaggio, change its name.

The maker of the distinctive Avanti twin-pusher turboprop unveiled a new identity at NBAA, changing its name from Piaggio Aero Industries to Piaggio Aerospace.

The company said the brand reflects the broadening nature of its business, which has seen it launch new platforms based on the P180 Avanti in the past two years.

As well as offering the latest VIP version – the Evo – Piaggio is promoting a special missions variant, the MPA or multirole patrol aircraft, and an unmanned air vehicle known as the P1HH HammerHead.

Piaggio Aerospace also manufactures engine components.



Syber space in new cockpit design

SyberJet Aircraft – formerly part of UAE investors Emivest – unveiled an all-new Jason Castriota design interior, as well as the SyberVision avionics suite, in a full-scale cockpit mock-up of its new-look SJ30.

SyberJet SJ30 is the world’s fastest, longest range light jet, and has been known for its speed, range, and efficiency. But the SJ30 cockpit mock-up demonstrated a new attention to aesthetic detail and true craftsmanship.

Ergonomic changes include moving the throttles in the centre pedestal aft by seven inches to provide a better position for the SJ30 pilot, and access to the cockpit has been made easier.



VistaJet sees continuing growth

Luxury charter firm VistaJet was upbeat at NBAA, having taken delivery of 12 brand new aircraft so far this year, with another dozen due to arrive by the end of the fourth quarter – all part of the multi-billion dollar orders the firm has placed with Bombardier over the past two years, covering Global 5000s and 6000s and Challenger 605s and 350s.

Ian Moore, chief commercial officer at VistaJet, said the coming years will be a period of pronounced growth for the firm.

Ultimately the market will determine size of the company, he said, adding: “We are not aiming to be the biggest, not a 600-800 aircraft-type company. But at this point in time we are looking to double the fleet size and receive over the next three years 60-65 aircraft.”



Airbus reaches Summit

Airbus has launched a new VIP cabin concept, initially for the A330-200, offering a faster and more affordable way to the greater capacity, capability and comfort of a wide-body for both private and government customers.

Called Summit, the concept features a VIP section at the front of the cabin, and airline-style seating at the rear. “What most customers want in a wide-body is the ability to carry more people and to fly them non-stop to the world,” said Airbus’ John Leahy. “The Airbus ACJ330 Summit features a bedroom with en-suite bathroom at the front, followed by an office, a conference and dining room and a working area, and then airline-style first-class and economy seating at the rear.”

Supersonic boost for Aerion

Aerion, manufacturer of the projected first supersonic jet, was upbeat following the Airbus decision to support the company in bringing the concept to market. Many of the orders for the type are from the Middle East. The project – chaired by Texas billionaire Robert Bass – hopes to have the aircraft ready for market in 2021.

Airbus will provide expertise on design, manufacturing and certification in exchange for access for Aerion’s proprietary technology that reduces drag on wings and the fuselage, the companies said.



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| 2002 Airbus A320VIP | 2011 Falcon 2000LX | 2010 Global XRS |
| 1998 Challenger 604 | 1987 Falcon 900B | 1997 Gulfstream GIVSP |
| 2009 Challenger 605 | 2002 Falcon 900EX | 1998 Gulfstream IVSP |
| 2010 Challenger 605 | 2010 Falcon 900LX | 2006 Gulfstream 450 |
| 2011 Challenger 605 | 2008 Global 5000 | 1991 Hawker 1000B |
| 2008 Challenger 850 | 2009 Global 5000 | 2005 Lear 45XR |
| 2003 Citation CJ2 | 2012 Global 5000 | 2004 Lear 60SE |
| 2001 CRJ 200LR | 2012 Global 6000 | Q4 2015 Legacy 500 |
| 2010 Embraer Lineage 1000 | 2015 Global 6000 | 2007 Legacy 600 |

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MEBAA'S MAGICIAN SPELLS SUCCESS

Ali Al Naqbi must surely have a genie in a bottle when it comes to conjuring up change for business aviation in the Gulf.

Liz Moscrop *sees what's on the cards.*

Shhh... don't tell anyone, but Ali Al Naqbi can perform magic. Actual magic. He can turn a 24-hour day into a week's worth of efficient work, and is doing so to great effect in his role as chairman of the Middle East and North African Business Aviation Association (MEBAA).

In the five years since he assumed the mantle, he has helped grow the association from zero to 227 members, gathering lots of benefits and helping to ward off the four hideous horsemen: grey charter, commercial aviation regulations, local skills shortages and equal rights at airports.

MEBAA member perks include plenty of insurance discounts – and not just for operators. He explained: “Not all of our members manage aircraft, so we wanted to extend some of the benefits to everyone. We try to see how we can support people according to what they need.”

This December sees the sixth edition of

MEBAA's own business aviation show in Dubai, and it is continuing to grow, with some 400 exhibitors setting out their stalls in the main arena at Dubai World Central.

Outside there'll be 50 aircraft, flanked by 25 chalets. The organiser, F&E Aerospace, expects around 8,000 attendees, and for the first time is inviting young people to attend to get a feel of what the industry is about, with a view to attracting talent into the regional business aviation sector.

You can spot a market's maturity by the companies that take booths at regional shows. This year it is evident that business aviation tentacles have spread further down the supply chain than aircraft manufacturers and management and charter companies, with new exhibitors including Lyon Bron Airport.

Continued
on Page 90

CONTINUED FROM PAGE 89

Interestingly Zodiac Aerospace-owned interiors specialist Greenpoint Technologies has taken a space, as has the San Marino Aircraft Registry, Softex Invest, and US high-end FBO services provider XJet. This indicates more flying, more aircraft changing hands and more acquisitions in the region.

The latest statistics backing this up come from last year's Honeywell Forecast (this year's should hit your mailboxes during the MEBAA show). The numbers suggest that the average age of local aircraft is just over 15 years, and there has been an average growth of 7% in the market over the last five years. There's still a strong preference for large cabin, long-range jets, which account for around 70% of units, and 88% of the market's value.

There are no smoke and mirrors involved in this growth. MEBAA has heavyweight support. His Highness Sheikh Ahmed bin Saeed al-Maktoum is a key ally in the association's growth.

The man who put Emirates Airline on the map is also the driving force behind Dubai's second airport at Dubai World Central. Al Maktoum International Airport began accepting passengers a year ago and has a capacity of about five million people per year today. Most of the UAE's business aviation fixed-base operators are now in situ at the field, and Al Naqbi pointed out: "It is much better for us. We don't have to wait for ages for slots, or circle in the hold for an extra half hour. That is not the way business aviation should operate."

He added: "Sheikh Ahmed has always been very supportive of our efforts, which is very important. He attends our key conferences and has sent letters on our behalf."

Ground handling is evolving, but how about air travel? What of the new Etihad super first class product? Will that take business away from local private aviation operators? "Not at all," insisted Al Naqbi. "It is always good to see airlines bringing in a high level of luxury. However, that is not the same as flying privately. You still have to queue up at either end and go through the same channels as the rest of the passengers to get on and off the aircraft. These are two different markets. What we need to educate our passengers about is the most cost-effective way to fly around the region – do you

really need a wide-body to fly three or four people from Dubai to Bahrain?"

Therein lies the rub. There are very few light jets in the Gulf, so chartering a Learjet 45, for example, is easier said than done. Although smaller business jets are considerably cheaper to buy and operate than their large counterparts, they still come in at around \$14 million for a new machine, without the expense of owning them, which is just not pocket money for most.

People are unwilling to be early adopters and foreign management companies complain that when they try to ally with regionally-based operators and place light jets in the region in low season, they cannot come to a price agreement with the locals.

This frustrates Ali. "I wish people would come via us," he said. "We can help them partner with the right companies, whereby both partners benefit at a fair price. Please tell them to come to us first. It is not in my personal interest to

recruitment efforts and so should the business aviation sector."

He continued: "There are no silver bullet solutions. This region is dependent on the global supply pool for the pilots, trained and licensed under different regulatory systems. Our attempts to develop this resource have had a modest success rate so far. As with the airlines, finding qualified pilots is a major challenge."

Part of this challenge includes the fact that there are so many different types of business jets, coupled with the fact private aviation pilots have to have a skill set ranging from management to customer communication skills. Added to that, 96% of trainee pilots are more interested in the commercial sector, and you see scarcity looming.

Al Naqbi would like to see business aviation companies supporting local flight schools and/or flight clubs, which train pilots in small and medium jets.

He continued: "Newly qualified pilots might aspire to commercial aviation, but at least they have an option."

Turbulence in Syria and Iraq has affected the market, but only slightly.

Al Naqbi said: "I am so sorry to see what is happening. Our operators moved their aircraft away from the troubled spots, just as they did during the Arab Spring uprisings in 2011. I only hope and pray for a peaceful resolution."

On a more positive note, MEBAA's efforts combating illegal charter seem to be bearing some fruit. People's ability to report non-legal flights anonymously is helpful, as is the document produced by the European Business Aviation Association (EBAA), which educates

passengers on what makes a legal flight.

And the association has spread its wings and met around the region as promised. As *Arabian Aerospace* to press it was set to meet in Amman in Jordan, and earlier this year organised a conference in Riyadh, Saudi Arabia.

Al Naqbi said: "Our association will continue to meet and bring inspired and motivated people together through conferences in different cities around the Middle East and north Africa to ensure the business aviation community remains at the forefront of the ever-changing [aviation] industry."

MEBAA has gone from zero to hero in five short years. If that's not magic, I don't know what is.



The packed static display just yards from the exhibition is a major selling point for the MEBAA show.



encourage this, rather as the leader of MEBAA here to develop the industry in the Middle East."

One of his major worries at the moment is the impending lack of skilled personnel available. The demand for new pilots and engineers may soon exceed supply, according to the International Air Transport Association (IATA).

It predicts that over the next 10 years the aviation industry will need 17,000 new pilots per year. Global pilot training programmes can train only about 15,000 per year, which would leave a shortfall of more than 3,000 new pilots annually.

Al Naqbi said: "I think that is a conservative estimate and the actual numbers of new pilots required could be significantly higher. Commercial operators are stepping up their



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UAE-based aircraft lessor and management group, Aerovista, has found itself in several of the world's conflict zones over the past decade as it provides an unusual specialisation – the evacuation of civilians in very short timescales. Alan Dron reports.

THE RESCUERS!

The tragic civil wars in Libya and Iraq have increased hugely in both scale and intensity in recent months. That has led to a need, in several locations, to evacuate civilian personnel swiftly from impending danger.

Extracting people from conflict zones is, by definition, a difficult task. Evacuees have to be contacted and gathered at a rendezvous, the selected airport may be available only for a limited period before the risks become too great for an airline to operate safely, and a high degree of coordination is needed between the bodies organising the process.

Dubai-based Aerovista has previous experience of such procedures and was called in again in Iraq and Libya as the situations there deteriorated over the summer.

Aerovista is an aircraft charter and leasing company and, although it is at pains to stress that organising evacuation flights is just a small part of its business, it is one in which it has an unusual degree of experience. It has operated such flights on several occasions: in Afghanistan in 2001, during the 2003 Iraq post-war conflict and again during the 2011 Arab Spring.

Prime requirement

Perhaps obviously, a prime requirement for a company involved in this sector is to be flexible and able to react quickly to what are frequently rapidly evolving events. However, said Aerovista Group CEO Apandi Lakhiyalov, once such an operation is under way, probably the most important factor that will ensure a good outcome is good lines of communication to both the aircraft broker that has approached Aerovista and with the ultimate clients or whoever is organising the evacuation 'on the ground'.

Multiple permissions usually have to be sought to enable the flight to go ahead in a very short timescale and sometimes events require last-minute changes to plans. Aerovista uses its contacts among airlines based in the affected area to make a risk assessment of the situation.

As the Libyan civil war spread rapidly over the summer, for example, the situation in Tripoli was



Aerovista Group CEO Apandi Lakhiyalov has plans to double the group's fleet in the next few years.

deemed too risky for flights from the main international airport, said Lakhiyalov and the regional airports at Misrata and Labraq were used instead: "Our customers made arrangements for a secure convoy over 500km across Libya to get to those safer airports."

Aerovista leased in a McDonnell Douglas MD-83 on an aircraft crew, maintenance, and insurance (ACMI) arrangement from an operator with experience in short-notice emergency evacuations.

Similarly, as the Islamic State (IS) fundamentalists advanced in Iraq this summer, major operators in the country's oil and gas industry began precautionary evacuations to bring their staff to safety.

"It was a very short-notice, difficult evacuation," said COO Dmitriy Korshunov, but one that ended successfully. In one week in August, Aerovista and its partners operated 13 evacuation flights from Libya and Iraq.

Aerovista's fleet varies but at the time of writing consisted of three Boeing 737-300s, one 737-500 and two Airbus A320s. The company

finds that the 737-300's built-in airstairs helps facilitate evacuation flights from small airports that may not be well equipped.

There are plans for further expansion: "We're looking to increase our fleet quite substantially, to roughly double it to around 16 aircraft," said Lakhiyalov. "If you see us operating wide-bodied aircraft, don't be surprised," added Korshunov.

Lakhiyalov, a graduate of Ukraine's Kharkiv State Aeronautical University, set up his first aviation company, TransAvis, in 1993, to provide technical support services to airlines and aircraft manufacturers. He founded Aerovista in 1999. Its first aircraft, acquired in 2000, was an Antonov An-24. Although elderly even then, the twin turboprop had a reputation for being a typically rugged product of the former USSR's aviation industry, well suited to operations in less developed regions.

Aerovista continues to focus its efforts on challenging regions of the world. "We concentrate on emerging countries," said Lakhiyalov. "That's our target market." Risks are greater than in more developed parts of the globe but the rewards can also be greater. Additionally,



Seen in Libya last summer, this Aerovista-supplied MD-80 series aircraft helped evacuate personnel from a fast-deteriorating security situation in the north African nation.

all risks are managed and mitigated with past experience and constant assessment.

Aerovista began operating in the charter field mainly in the Middle East and Africa, but when that market began to decline some years ago it evolved a business model that Lakhiyalov describes as “hybrid ACMI”.

This allows customers to choose from a menu of options, from a full-scale ACMI offering to a simple operating lease, where Aerovista simply supplies the aircraft to the client, which operates it under its own AOC and supplies the crews and maintenance.

The right hybrid ACMI solution for each client will often depend on its development stage. As a new operator, which has not yet received its AOC licence, a client would not yet have the legal right to fly under its own colour scheme and flight number. It would, therefore, need to take either the full ACMI solution or the CMI option if it already owns an aircraft. This gets a plane in the air under its brand but ensures the legal responsibility for safe operation is with Aerovista.

This solution is often the preferred route in emerging markets, where local entrepreneurs and investors see an opportunity to launch a new airline and want to achieve first mover advantage.

If the client is an established airline with its own AOC and is looking for capacity to grow into a specific market niche, then it has more options to choose from. It can select ACMI or solutions that allow it to use its own in-house resources – such as cabin crew, flight crew and spares. Or it can move the operation entirely in-house and elect to sign a simple dry lease.

Aerovista’s degree of involvement with clients varies according to their individual needs, said Korshunov. “Sometimes we supervise the technical operation and provide some knowledge transfer to accommodate the required training of staff.”

Aerovista’s other interests include aircraft management and support services. Latest developments include the creation of sister-company Flyvista, which began operations in late summer.

The initial route served by the new carrier was

from the Georgian capital of Tbilisi to Tehran, Kiev and Almaty (the latter for summer season only). The airline has just received nomination from the Georgian authorities to operate to Moscow and the company will be looking at other destinations in the Middle East, as well as eastern Europe and the Indian sub-continent.

Flyvista’s fleet consists of two dry-leased Boeing 737-300s, one from San Francisco-based World Star Aviation, the other from Sydney-based KV Aviation. There are plans for the new carrier to take on three or four Airbus A320s over 2015.

Among Aerovista’s other interests are Hajj flights, which it serves the annual pilgrimage both with its own aircraft and others it manages. “We’re contacted by airlines to support their business on an ACMI charter basis. It could be a legacy airline or a regional airline from a small country. We don’t sell tickets or packages ourselves,” said Lakhiyalov.

When Aerovista requires additional capacity, it draws on the resources of a group of associate companies, added Korshunov.



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We want to thank Boise Cascade Corporation for being the initial customer to take that leap of faith to enroll on a JSSI program. It required foresight, an open mind and the willingness to take a chance on a new concept and a young company. We thank you, our loyal customers, who have entrusted us with your aircraft over the years. Thank you to the OEMs, who have worked hand-in-hand with us as we developed innovative programs like Tip-To-Tail®, the industry's only single-source maintenance plan. And thank you to all of the maintenance providers that have worked alongside our technical advisors to deliver outstanding service.

All of this begs the question, "Where do we go from here?" Stay with us throughout this, our 25th anniversary year, and we'll share some of our future plans. Because, thanks to you, even after 25 years, we're just getting started.

A handwritten signature in black ink, appearing to read "Neil W. Book".

Neil W. Book,
President & CEO, JSSI

Large aircraft charter is providing a vital service during these challenging times for the region. Liz Moscrop reports.

Uplifting tales...

Would that it were not so but, as *Arabian Aerospace* was going to press, the fighting in parts of Iraq and Syria was intensifying, with about 40 nations targeting the Islamic State (ISIS) insurgents, now controlling parts of both countries.

This summer the violence escalated dramatically and foreign companies with personnel there, fearing for their people's lives, have been chartering aircraft to get their staff out.

British firm Air Charter Service (ACS) has extracted more than 500 people so far. Justin Bowman, CEO said: "We have chartered for a variety of clients from the UK, US and China, among others, to evacuate people from the area using both Erbil and Sulaimaniyah airports.

"We are dedicated to staying on top of all security factors, such as which airports are open and safe to fly from, as well as airspace restrictions and reliable airlines. The situation around Erbil is becoming increasingly dangerous, so we are advising clients to use Sulaimaniyah Airport from now on if possible."

Erbil is the capital of the Kurdistan region, and rebels are just 40km south of the city.

Dozens of calls

Bowman continued: "So far we have used a variety of aircraft, including Airbus A320s, B737s and an Embraer 145 for the evacuations, but we are receiving dozens of calls at the moment, so that list will expand."

The evacuees went to Istanbul and Dubai, flying on MD83 and B737 aircraft. ACS has also arranged evacuation flights from troubled Libya as a result of the worsening security situation in the north African country, reminiscent of the situation three years ago.

Fighting in Tripoli and Benghazi is the worst since the Arab Spring of 2011 and the Libyan civil war that ended Muammar Gaddafi's rule.

Bowman added: "With increasing international worries that Libya is becoming a failed state, many expatriates are being evacuated for their own safety, whether by homeland governments or by companies for their employees."

In 2011, ACS flew almost 15,000 people out of Libya and Tunisia. So far this year the firm has chartered 16 flights for the situations across the Middle East and Africa, carrying more than 2,000 passengers to safety.

Another British company, Air Partner, supplies many national and international organisations, including six of the G8 group of governments, NGOs and aid agencies, as well as international and UK royalty.



British company Air Charter Service is flying people out of trouble hotspots to safety.

"Many expatriates are being evacuated for their own safety, whether by homeland governments or by companies for their employees."

JUSTIN BOWMAN

The firm reports that it, too, has used its expertise to help clients evacuate personnel from Iraq. The company received multiple requests for evacuations out of Erbil. In August it chartered an Embraer Legacy 650 to evacuate 13 passengers from Erbil to Amman in Jordan. Air Partner also organised a Boeing 737-300 to transport 39 other passengers to Istanbul.

CEO Mark Briffa said: "We used our expertise to provide evacuation services, despite the extremely difficult conditions for aircraft, crews and operators. Those wishing to evacuate personnel face significant challenges finding aircraft capable of operating in the region. I am proud of the team's dedication and specialist knowledge, which has allowed us to react rapidly and move people to safety."

Assisting in a crisis

Air Partner has previous experience of assisting in a crisis. During the Arab Spring uprisings of 2011, for example, which coincided with several natural disasters, the firm says it worked "around the clock" to evacuate more than 12,000 people from Egypt, Japan, Libya, New Zealand and Tunisia in just six weeks.

So far ACS has almost 1,000 people either evacuated or booked on to its charter flights, with more expected to follow. Bowman concluded: "With the high demand for evacuation flights out of Libya and also from people fleeing western Africa to escape the Ebola virus outbreak in the region at the moment, we are experiencing similar levels of interest as we did in 2011."



ExecuJet's new lounge at Dubai World Central. The company has the only VIP transit lounge on site.

Sitting pretty at DWC

Business aviation operations in Dubai have found a new home. Liz Moscrop looks at how they're settling in.

The recent runway renovations at Dubai International Airport (DXB) shone a sharp spotlight on private aviation fixed base operations (FBOs) in the UAE.

Firms with a presence in the Emirate migrated to Al Maktoum International Airport at Dubai World Central (DWC) for the duration of the work. But now they look like they are gradually hunkering down for a long haul at their new home.

In addition to minimal taxiing time and unlimited slot availability, DWC offers VIP customers the convenience of boarding their aircraft in a matter of seconds.

The Middle East Business Aviation Association (MEBAA) chairman, Ali Al Naqbi, backs the move. He has called on UAE-based business aircraft operators to support the Dubai Civil Aviation Authority's push to move business aviation operations from DXB to DWC. He cited slot shortages and timing restrictions that make life increasingly untenable at Dubai International.

So far, the move seems to be working well. DC Aviation Al Futtaim (DCAF), for example, opened a facility at Al Maktoum and now has European Aviation Safety Agency (EASA) approval to expand its maintenance capabilities there to include the Bombardier Challenger 604/605 types. Michael Lindgren, director of maintenance said: "We have also invested in our technicians and added tooling and equipment."

The joint venture between the German charter operator and the Dubai investment firm also offers line maintenance support to customers operating the Airbus 320 family, as well as the Bombardier Global Express.

Maintenance takes place in a 5,700sqm dedicated hangar on site – the only business jet hangar at DWC. The state-of-the-art facility has enough space to accommodate four ACJ or BBJ type aircraft, as well as two ultra-long-range business jets, such as the Dassault Falcon 7X, Bombardier Global Express or Gulfstream G550.

Holger Ostheimer, DCAF's general manager explained: "We expect to see asset owners permanently shift their operations to DWC as owners and operators realise the convenience it offers in terms of easy access via the Dubai bypass, lesser operational restrictions and timely operations."

ExecuJet, too, has established a line station at Al

Maktoum, which has been approved by the UAE General Civil Aviation Authority (GCAA). It also has EASA approval to conduct scheduled maintenance packages on Bombardier, Gulfstream, Embraer and Hawker aircraft, supported by the company's Dubai International Airport MRO facility, (which is offering full aircraft handling and line maintenance services again at Dubai International).

Mark Hardman, operations director said: "As general aviation parking will remain limited at Dubai International, we expect demand to remain strong at our FBO at Al Maktoum."

At the moment, ExecuJet's facility at Al Maktoum is the only transit lounge available to business aviation clients at DWC. It includes a VVIP passenger lounge, crew lounge, washrooms and showers.

Earned the right

Jet Aviation also has an FBO at DWC, in addition to its MRO and FBO at Dubai International. The General Dynamics-owned company earned the right to operate at DWC following its appointment as the dedicated ground handling service provider for the Middle East Business Aviation (MEBA) exhibition in December 2012.

Its FBO at Al Maktoum International Airport provides 24/7 handling services, such as immigration and customs support, crew transportation, hotel reservations and catering coordination. Aircraft services include taxiing, luggage handling, lavatory drainage and aircraft refuelling, for which all Jet Aviation FBO and MRO customers in EMEA receive preferential rates.

However, it is a locally-owned company that stands to benefit most in the short term. F&E Aerospace opted for Jetex as the host FBO for the aviation events it organises at Al Maktoum International, including this year's MEBA show in December. Jetex will provide aircraft pushback and towing to all show aircraft. The FBO will also provide a VIP lounge for passengers and crew.

Adel Mardini, CEO, is highly optimistic about the future. He said: "Dubai World Central marks the next chapter in Dubai's development as one of the world's leading aviation hubs. It makes absolute sense for us to be present here."



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How to create a taste of heaven with private dining

A handful of private aviation catering companies are creating 'out of this world' menus. Liz Moscrop would like to eat her words.



Food for discerning business aviation clients is a specialist service.

Gustatory luxury should be the very essence of private jet flying, particularly in the Middle East, where hospitality is ingrained in the Arab culture.

However, it is often lacklustre – an add-on service from hotels and restaurants that just don't appreciate what happens to food when it flies in the sky.

Ever owned a bath sponge? Remember what happens when it's not dunked in water... well that's what goes on with your tuna sandwich at altitude.

Fortunately, there are a few dedicated catering companies that spend their lives producing delicious dinners that taste as good above the Earth as they do on the ground.

OnAir dining is one such – owner Daniel Hulme is a chef who supplies food from his kitchen at the UK's Stansted Airport. He explained: "We are now going for our halal certificate, which we should have in the very near future."

Royal Blue Executive Services, another British company, also supplies high-end dishes to Middle Eastern clients and can offer halal catering, as can Universal Weather and Aviation subsidiary Air Culinare.

Paul Schweitzer, VP sales and marketing at Air Culinare said: "Huge pots and pans and dry storage areas are noticeably absent from our kitchens. The best way to categorise our cuisine is 'from scratch, small batch' cooking. This approach is crucial for each element that a dish contains. We want every meal to be a memorable experience."

Indeed, understanding what happens to flavour is a vital part of the process. Sushi is an on-board favourite: with good reason. It is a tasty trouser that can combat the trials of aviation.

At altitude, pressurised air and lack of humidity play havoc with your tongue and nostrils. Your taste buds are crushed and your nose dries out, so your senses of taste and smell are blunted. If you've ever sucked a sloe berry you'll

get the idea – every drop of moisture disappears out the roof of your mouth, leaving you crack-lipped and panting for water.

Even in private jet cabins, which are engineered to sea level pressure, the air is bone dry, largely because there are so few people on board, contributing to a damper atmosphere. Typical humidity levels can be as low as 20.8% – that's 6% lower than the Sahara Desert.

That's just not good news for food. Chef Heston Blumenthal (he of the blowtorches, dry ice and explosions notoriety) once used a pressurised chamber and different strengths of saltwater to prove just how much our taste buds deteriorate in flight. We can just about manage to detect four of the five flavours at half their normal potency. So sweet, salty, sour and bitter merely gasp their presence once they reach altitude. The only one to survive the seven-mile climb intact is umami – the fifth flavour found in soy sauce and shitake mushrooms.

Aerial star

It's no coincidence, then, that sushi is such an aerial star.

A big selling dish from the OnAir stable is the umami-filled miso braised black cod, along with spicy Moroccan chicken and Thai curry. The tough spices in them blast through the dryness, so people naturally gravitate towards them.

Thanks to that instinctive pull, Air Culinare has been working on new choices. Schweitzer elaborated: "We offer the most popular menu items that are most often requested internationally. Our executive chefs and culinary teams have been busy with research and development in our test kitchens and created new menu items that reflect their regions' culinary specialities and flavours."

Freshness is vital, too. A spokesman for Royal Blue said: "We use only produce sourced locally on a daily basis from a selection of carefully chosen suppliers." The company also offers bespoke catering, tailoring menus to client desires.

He grinned: "We have plenty more exciting things to announce in the coming months. What I will say is the Middle East is our most exciting market..."



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“It is not right for those operators carrying out their business legally. But it is also the responsibility of others in business to report those illegal flights to their authorities.”

MOHAMMAD AMIN AL-QURAN



Jordan set to red flag the grey market

Jordan has become the first state in the MENA region to take positive action against the illegal charter business, known colloquially as the grey market.

Jordan will be impounding aircraft and banning the aircraft or operator from its airspace if found guilty of operating illegally.

That was the pledge from Mohammad Amin Al-Quran, the chief commissioner and CEO of Jordan's Civil Aviation Regulatory Commission (CARC), when he gave the keynote address to the Middle East Business Aviation Association conference (MEBAC) in Amman.

“I am not a great believer in punishment, much more in education and persuasion, but enough is enough,” the CARC chief said.

“The problem is growing. We will track flights and we will carry out scheduled and non-scheduled ramp checks. It is not right for those operators carrying out their business legally. But it is also the responsibility of others in business to report those illegal flights to their authorities.”

Al-Quran said he would be taking the matter to the Arab Civil Aviation Commission (ACAC)

in a bid to get other states to follow suit.

“It is possible to rid ourselves of the grey market. We need to educate owners and operators and their customers, but also they must realise there are consequences.”

Al-Quran revealed that Jordan is studying the potential for a new airport that would allow training providers the space to operate, as well as providing a base for smaller business jet and tourism.

“Jordan as a nation is committed to aviation; we had ideas about developing a regional training centre for aviation. The events of the Arab Spring and then the current conflicts meant those plans were not realised. But they are a key part of our future plans,” he said.

“The Amman civil aviation airport at Marka is busy and there is little opportunity for training. There are several options for a new airport that could work for training. One of these is near Petra and would work well for

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tourism, but we are studying other alternatives in both the north and the south of the country.”

Chairman of the conference, Alan Peaford, editor-in-chief of *Arabian Aerospace* magazine, has identified training and pressure on airspace and airport space as key issues facing the business aviation industry.

“Growth of 13% in commercial aviation movements last year and the incredible rise in the number of passengers means that everyone is focused on the air transport business,” he said.

“Airbus and Boeing have both forecast massive increases in the number of aircraft needed over the next 20 years and Boeing has identified the need for some 55,000 pilots and 65,000 engineers and technicians for the Middle East alone. Given that the training schools can’t meet that demand now, it begs the question where is business aviation going to get its pilots from?”

Marwan Attalla, CEO of the Ayla Academy, said he recognised the problem and also warned that airlines would need to change their attitude. “Training is seen as a periphery issue for them. They should understand it is an integral part of their future.”

Attalla said there were a number of issues driving the pilot shortage. “There has been an unprecedented retirement rate of experienced pilots, we have seen a tightening of crewing regulations and greater utilisation of aircraft but, at the same time, there has been a slowdown of new blood entering the field as the military is no longer the main source of pilots.

“I find the saddest thing is that inexperienced pilots are not able to work in this region. There is a responsibility for the airlines to do more and to help these young people, who have completed their training, to get in the right-hand seat. Airlines need to get more involved; seeing a young Jordanian pilot sitting at home does not send a good message out to other young people.”

Shortage of instructors

Attalla said there was a shortage of instructors and he had also witnessed a reduced career interest by the younger generation. “Aviation is no longer the draw that it was,” he said.

Ali Al Naqbi, founding chairman of MEBAA and the host of the conference, said that the association should be doing more. “We have agreed to have a futures day at the MEBA show in December, and we are talking to educational establishments about creating a special category of membership so that we can get people thinking about aviation in general and business aviation in particular.”

Attalla said that Ayla was launching a foundation course in partnership with Airways Aviation that would help introduce young people from the region to aviation training and bring them up to standard on key subjects before embarking on full pilot training.



“There is a responsibility for the airlines to do more and to help these young people, who have completed their training, to get in the right-hand seat.”

MARWAN ATTALLA



“You can change the culture of a company. It just takes time and it has to be driven by the example of the top management.”

BASHIR ABDEL HADI

“We will be covering things like aviation English, physics and maths, and will be advising them on whether they could do the pilot training before they make the \$90,000 investment in the course. The course will last 15 weeks and will cost around \$4,000 but it is an insurance against making the wrong decision and will help them if they do go ahead.”

He also said the Ayla was investigating the potential for business aviation-targeted training, almost in the way the multi-crew pilot licence (MPL) had done for the airlines.

Delegates speaking from the floor warned that many business aviation customers were averse to junior, inexperienced pilots and also concerned that operators with multi-type fleets would always face a challenge getting pilots type rated.

Safety was also high on the MEBAC agenda. Bashir Abdel Hadi, director of the Royal Flight of Jordan, spoke about the requirement to implement safety management systems (SMS).

He said that business aviation operators needed to ensure that the SMS was fit for purpose. “A two-aircraft operation is completely different to American Airlines for example,” he said. “Most of the things required by the new rules are probably already being done, they just need structure.”

Hadi said it was essential that companies worked on developing a sound safety culture. “You can change the culture of a company,” he said, “It just takes time and it has to be driven by the example of the top management.”

On-going support

The MEBAC event was held at the Four Seasons Hotel in Amman under the auspices of CARC, and Al Naqbi praised the Jordanian authority for its on-going support for aviation. He said that research by MEBAA showed that Jordan was maintaining its positive year-on-year growth by 2.2%, giving it a Middle East market share of 6.5% in terms of total professionally operated flights.

Hamburg-based WINGX Advance, commissioned by MEBAA, provided an analysis of the regional industry, highlighting a mixed picture.

While the number of active and registered business jets had levelled off since 2000, with a compound annual growth rate (CAGR) of -0.1%, the number of operators had increased at an annual rate of 2.7%, reinforcing MEBAA predictions that the industry would be worth \$1 billion by 2020.

Al Naqbi said: “Jordan introduced business aviation into the Middle East when the first operator began flying with support of the late King Hussein, who was keen to make Amman a business aviation centre for the region. Today Jordan is still making steady progress and is one of four countries whose industry has grown in the last year. Its renovation of Queen Alia Airport will only help provide improved infrastructure to support business aviation and we are delighted to be in Jordan to support and promote its progression.”

The next MEBAC will take place just ahead of the MEBA show in Dubai in December.

Turkish president's Prestige delivery

Turkey's new presidential aircraft, a modified Airbus A330-243 Prestige, has entered service with the Turkish Government's VIP transport flight (managed by Turkish Airlines on behalf of the president and prime minister), registered as TC-TUR.

The aircraft was handed over to Turkey as a 'green' airframe on October 6 2011 and then flown to Gore Design's facilities at San Antonio on February 15 2012 for outfitting with a VIP interior, satellite communications equipment, conference rooms and a comprehensive but unspecified defensive aids system.

The Texas-based company has 25 years' experience in converting wide-body aircraft into business jets.

The A330-200 Prestige normally accommodates 60 passengers with a range of 8,300nm (15,400km), though the Turkish example is understood to be configured for 90 passengers.

In April 2013 it was reported that Turkish Airlines was negotiating a possible takeover of Gore Design Completions, with the airline issuing a statement to the Istanbul Stock



Exchange saying that its MRO subsidiary, Turkish Technic, had signed a letter of intent with Gore Design, expressing interest in a future partnership.

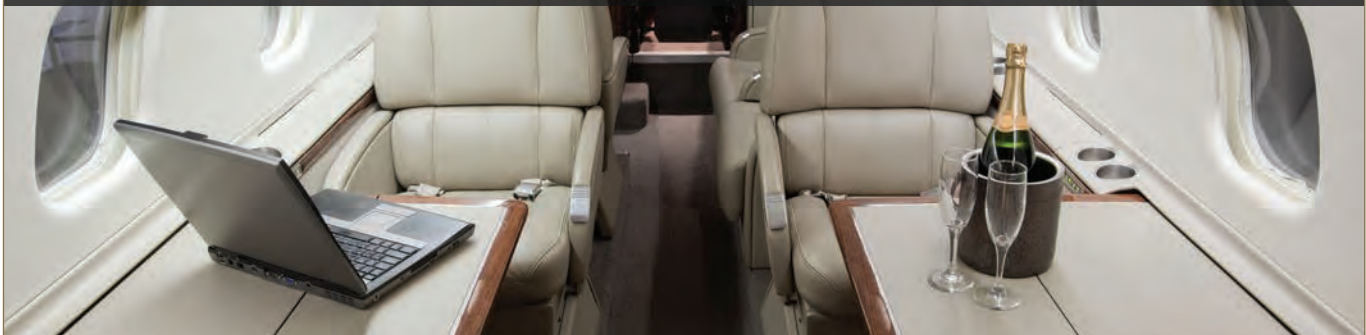
TC-TUR landed at Istanbul's Sabiha Gökçen Airport in the early hours of August 29 coloured white. Over the next three days it was painted in the red and white colours of the Turkish flag, with a crescent moon and star on the tail and the legend Türkiye Cumhuriyeti and Republic of Turkey on the fuselage sides (Turkish to port, English to starboard). It officially entered service on September 1.

Recep Tayyip Erdogan used the jet for the

first time that day for his first official visit as Turkey's president to Northern Cyprus, and then on September 3 flew on the aircraft to Cardiff for the NATO summit.

The purchase has provoked some controversy in Turkey, prompting the Government to issue a statement to the effect that the existing Turkish VIP aircraft (an Airbus A319-115CJ, two Gulfstream IVs, two G550s and a pair of Citation Vs) lacked sufficient range to be able to complete direct intercontinental flights. Turkey also operates three Sikorsky S-92 helicopters in the VIP role, and has a requirement for two more.

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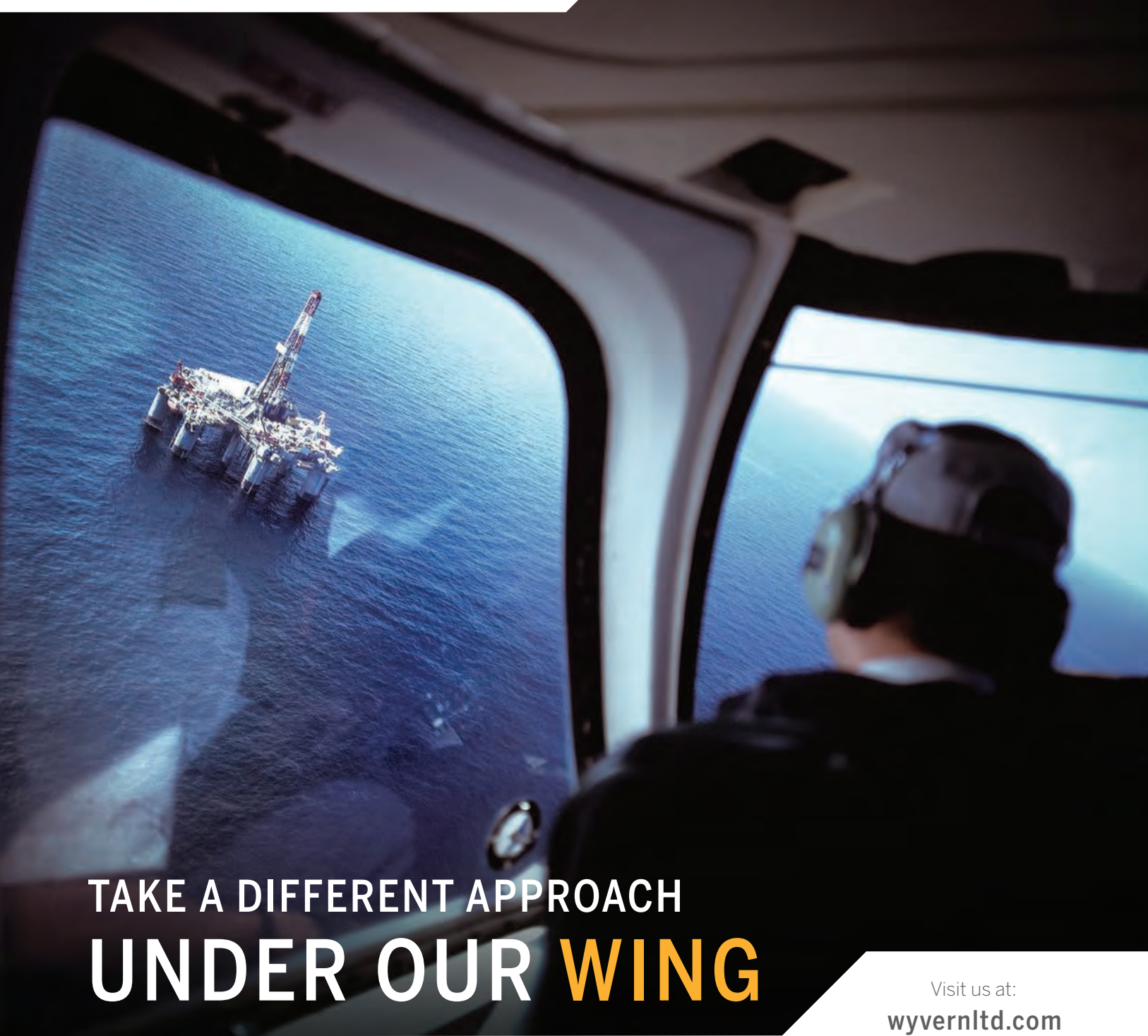


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Very Very Important jumbo completions...

Completions centres around the world are full with wide-body aircraft being prepared for the VVIP market.

Alan Peaford
takes a look at the latest position.

Lufthansa Technik's giant scale model showing the spectacular interior of one of the 747s.

The first of nine Boeing BBJ747-8 head-of-state aircraft is nearing delivery. Across the globe, the specialist completion houses are busy putting the final touches to the projects that utilise the blank canvas of the giant airframe.

Kuwait, Qatar and the UAE have all ordered wide-bodies for their royal fleets, while other high-net-worth individuals have also identified aircraft, such as the Boeing 787 or the A330, as their business jet of choice.

The first aircraft to be handed over is likely to come from Basle, where AMAC Aerospace is very close to completing the BBJ747-8.

The Swiss completions and maintenance house has been building a fourth hangar at its Basle base to cope with what chairman, Kadri Muhiddin, described as a "growing pipeline of interior conversions" on the large VIP aircraft.

Two years ago it opened its third hangar – a 8,400sqm (90,000sqft) space able to cope with two wide-body aircraft. It was immediately put to use with the 747-8 for a Middle Eastern customer.

On-going support

The interior includes the Aeroloft, developed by Greenpoint Technologies, which adds 325sqft of additional rest or recreational area with eight private sleeping berths in the aft, upper section of the aircraft.

AMAC is hoping to hand over the finished aircraft to its customer by the end of the year.

At Lufthansa Technik, in Hamburg, work is progressing simultaneously on two 747-8s. The German company is hoping that the first could be delivered by the end of 2014, or very early 2015, with the second superjumbo following soon afterwards.

A spokesman for Lufthansa Technik said "We are not rushing to be the first, it is about doing it right."

At the NBAA Convention in Orlando, Florida in

October, Lufthansa Technik had a giant scaled model showing the spectacular interior of one of the 747s.

Another centre to be doubling up is Texas-based L-3 Platform Integration, which is hard at work on two 747-8s, each for a different head-of-state. The first arrived in November 2012 and the second just a month later. Customer delivery of both is anticipated before the end of the year.

The Dubai Aerospace Enterprise (DAE) subsidiary, Associated Air Center (AAC), based in Dallas, also has a 747-8 in the works and the company said it is hoping for a customer delivery before the end of 2015.

AAC has also just begun work on a BBJ787, one of 14 of the type ordered from Boeing Business Jets.

Monuments and furnishings for the interior configuration have already been completed ahead of the green aircraft's arrival and will be ready for installation once the supporting structure, wiring, plumbing and sound insulation have been installed. Interior design is being conducted by the in-house design team.

"The composite structure and advanced systems on the 787 require special engineering, tooling and technical capabilities – it's a whole new ball game," said AAC's president James Colleary.

AAC plans the redelivery of the completed aircraft by the end of 2015.

On-going support

Recently re-branded GDC Technics (formerly Gore), the San Antonio-based facility owned by a Saudi Arabia consortia headed by Mohammed Al Zeer, is already hard at work completing two 787s simultaneously, both being outfitted as head-of-state aircraft.

Greenpoint Technologies received its first 787 earlier this year and a second is expected in 2015.

The order book for VVIP Airbus ACJ350 XWBs rests at one aircraft. Al Zeer's MAZ Aviation cancelled orders for six of the type.

Other Airbus wide-bodies have also been taking space in the completions hangars.

AAC delivered its first green Airbus A330-200 VVIP wide-body aircraft to a Middle East-based customer in September.

The project included a full cabin (nose-to-tail) customisation, equipped with high-speed data, high-definition in-flight entertainment (IFE), a comprehensive sound insulation package, stand-up shower, full cooking and food preparation, forward and aft galleys and complete interior zonal drier and humidification system.

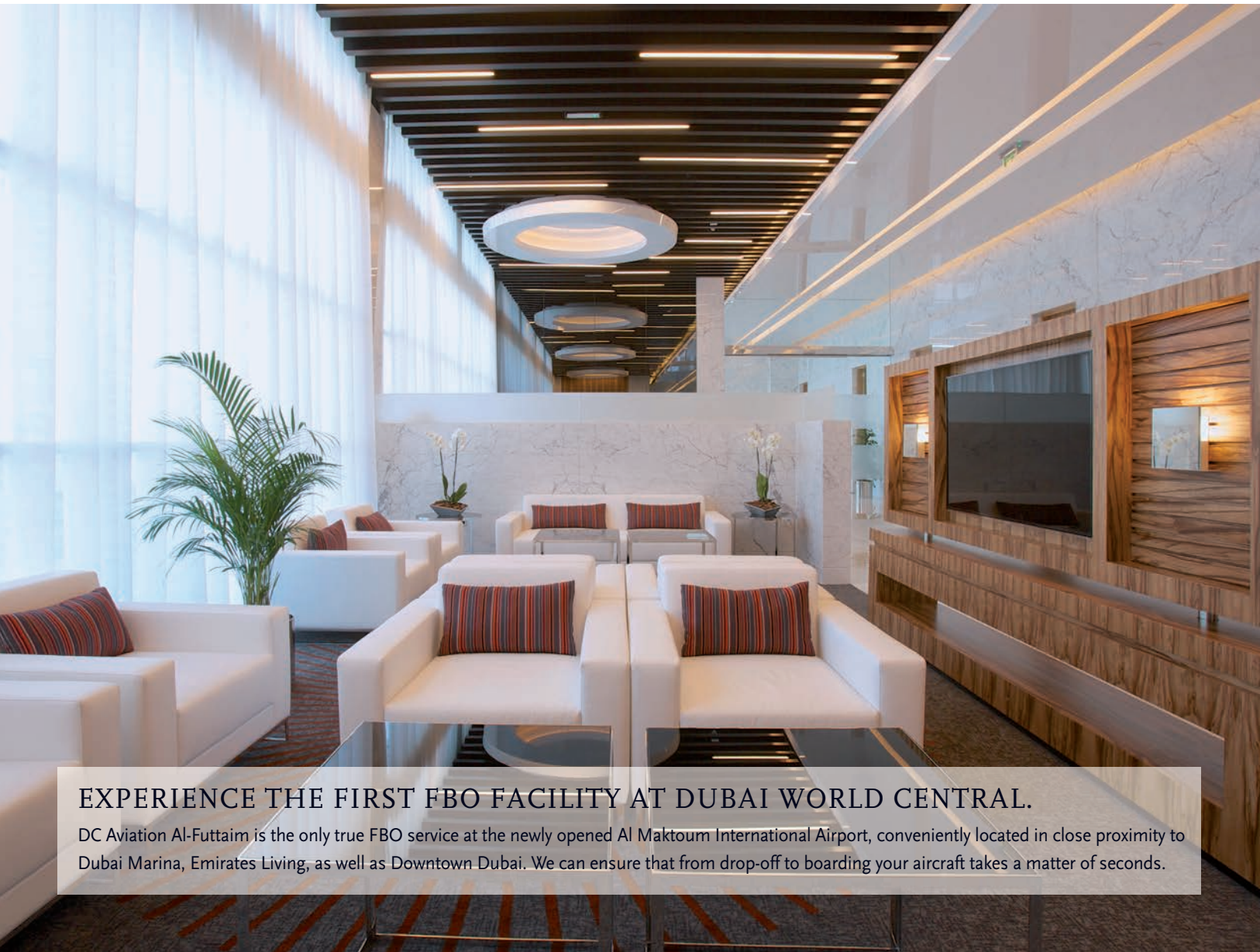
"The A330-200 was a very large and complex completion programme," said Colleary. "As part of the process, we added staff and expanded our current facilities to accommodate this and future wide-bodies. There were many engineering challenges and customer revisions throughout the process but our employees delivered and we have returned a safe and beautiful aircraft to a very happy customer."





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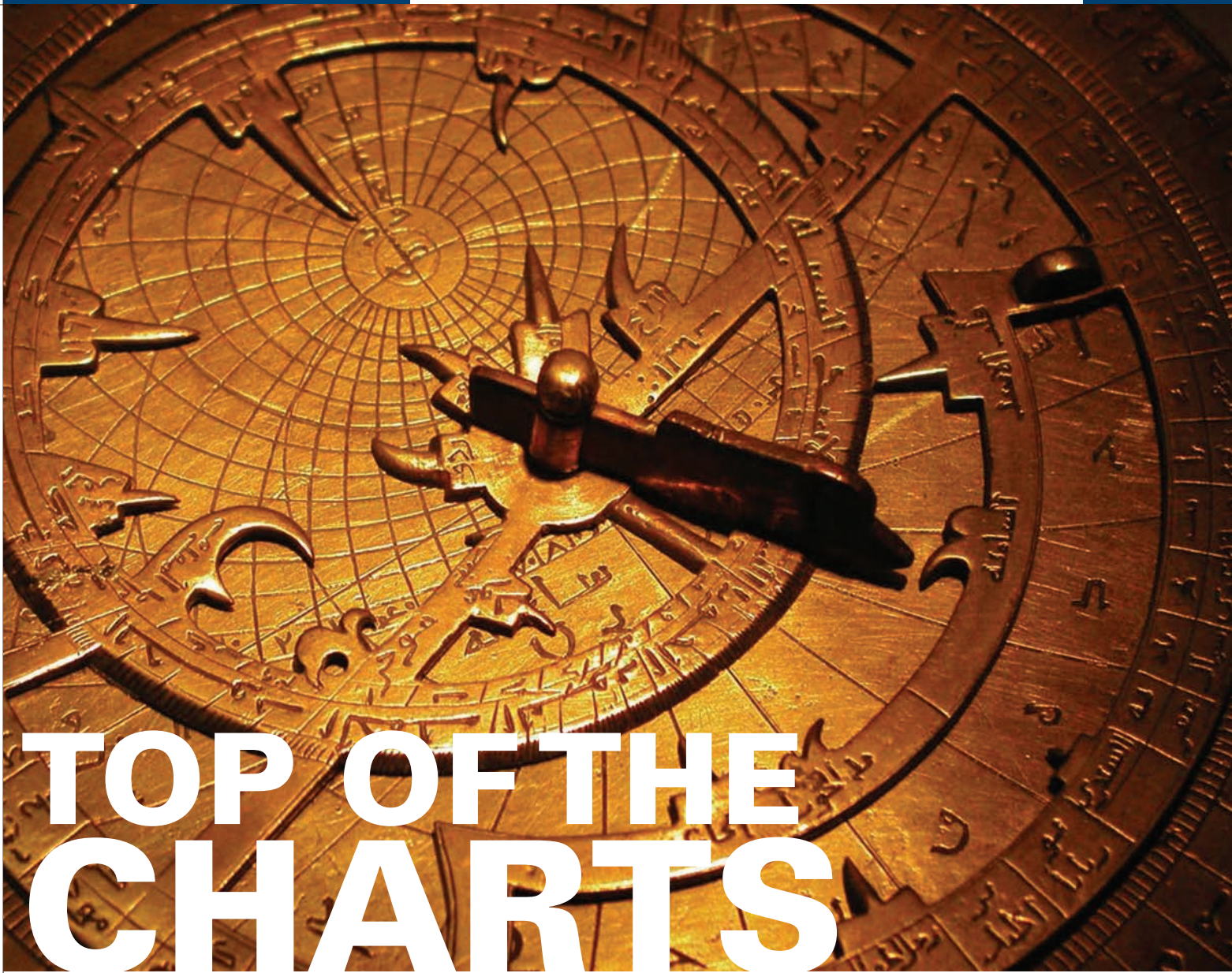
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TOP OF THE CHARTS

Trip support providers do so much more than suggest flight paths from A to B.

Liz Moscrop
checks out the X factor.

Admirers called him the ‘Shooting Star’ because of his fearless skill navigating the seas in the 15th century. Had the celebrated Arab sailor, Ahmad ibn M. jid, been born today, he would surely have been fascinated by the work of trip support companies, which help individuals and companies plan international flights all over the globe.

There are many similarities between his work and theirs. Ibn M. jid gained fame in the west as the guide who helped Portuguese explorer Vasco da Gama find his way from Africa to India. He was also the author of nearly 40 works of poetry and prose describing the basic principles of navigation.

Among other topics, he covered rhumb lines, the locations of ports from east Africa to Indonesia, as well as accounts of the monsoon and other seasonal winds.

Understanding weather and finding safe ports are as vital in aeronautical planning today as they were for seafarers all those centuries ago. Today’s libraries are contained in the clouds, and constantly updated with topical data on weather, traffic and destination airfields. However, without a grasp of what this means, such data is useless. Most trip support

providers employ pilots, engineers and other aviation professionals, who help decipher relevant information for their customers.

The Middle East has several such home-grown companies – Hadid, Jetex and UAS, for example. There are also long-established providers, such as Skyplan, Rockwell Collins (via its Ascend division) and Universal Weather and Aviation to offer counsel. Wise corporate aviators lean heavily on them for help with planning.

Often there is a maze of bureaucracy to work through when entering a country, depending on entry rules, the origin of the flight and the nationality of the passengers. What tends to happen is trip support providers hire their own ibn M. jids in the form of country managers, who work alongside local ground handlers to enhance operational safety, minimise language and cultural barriers, and co-ordinate credit for aviation fuel and services.

The famous explorer would doubtless have loved the wealth of data available to today’s travellers in the form of tiny downloadable

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apps that pilots and operators can store on smartphones, eliminating hours of research and making the sky a safer place.

Dubai-headquartered UAS offers its customers what it calls its “TMS” service via a free app. Clients receive a unique username and password to use the system, which gives them real-time access to all their past and current requests. Instead of having to make separate phone calls or e-mails to different teams for elements like permits, fuel or flight itineraries, customers can use TMS to receive the same level of information as UAS’ in-house staff.

Executive president Mohammed Husary said:

including a direct in-house satellite feed. A spokesman said: “We can provide affordable and stress-free flight planning. Whether it’s through our certified dispatchers, or remote access to our system via the internet.”

The firm offers plans, including the most effective dynamic random route or a fixed route on multiple cruise modes: Mach, long-range, engine out, and special modes. It also looks at altitude control, as well as alternate landing sites, fuel uplift requirements and flexible flight plans.

The spokesman continued: “You should be aware that a number of countries require over-flight or landing approval prior to entering their

He added: “Sharjah is another good option. It is approximately a 30-minute drive to the Dubai financial district and 35 minutes to the Jumeirah hotel district and Palm. Airport slots are not required, and ample aircraft parking is available.”

Ibn M jid described the ports he visited for his readers. Today, too, it is vital to understand that different cultural requirements come into play when entering a country. In Saudi Arabia, for example, it is important that a sponsor meets female visitors. They must also wear an Abaya, and any alcohol should be locked up when landing.

Saudi Arabia also requires both visas and sponsor letters for many nationalities. Most other countries in the region want to know in advance the purpose of a visit, plus any contact information.

The Qatar Civil Aviation Authority requires business contact information prior to approving a permit. It’s always best practice to secure required visas in advance. While Saudi Arabia will issue 72-hour crew visas on arrival, this can be restrictive. For example, if a crew member obtains a visa on arrival and stays beyond the approved 72 hours, he or she may be detained.

New technologies

US operators should also be aware that there are Federal Aviation Authority (FAA) sanctions in place preventing US-registered aircraft from over-flying or landing in Iraq and Syria until the end of 2014. The ban applies to all US air carriers, commercial operators and pilots, as well as operators of aircraft registered in the US.

The European Aviation Safety Agency (EASA), too, has issued a safety information bulletin that advises operators planning flights in the region to “exercise caution”. However, Nick Klenske writes on the Jetex blog: “Despite what you read in the headlines, business goes on in Baghdad.” He points out that, although some regional commercial carriers are avoiding the conflict zones – Emirates and Kuwait Airways have rerouted flights for instance – the majority of local airlines continue to operate there. He writes that Jetex ground handlers are reporting that flights continue to fly without incident.

Travellers must make up their own minds. UAW’s Barnes suggested: “The best advice I can give is to contact your service provider and find someone who has been to the places you’re going to. Talk pilot-to-pilot or operator-to-operator about the requirements and what are the hiccups you might encounter. You will get specific and useful information that way.”

Some say that ibn M jid’s true legacy was the substantial body of writing on sailing that he left behind, addressing celestial navigation, weather patterns and charts of dangerous areas. Today’s cartography comes from the cloud rather than the stars, but the spirit of adventure, coupled with the need for a skilled navigator is still a match made in heaven.



Drew Barnes: “Dubai International is offering slots, but often these differ widely from people’s desired schedules.”

“It’s like having a full operations team right in your phone. We learned that the majority of our clients are technology enthusiasts, who highly value on-demand access and mobility.”

Meanwhile, fellow UAE company Jetex Flight Support has a presence in Europe, Asia, the Middle East and Africa, with fixed base operations (FBOs) in Paris, Dubai and Shannon, and operations centres in Kiev, Beijing, Dubai, Paris, and Shannon, plus a supervisory network spread across Africa.

Its offerings include an app that allows clients to access fuel pricing at thousands of airports worldwide, request fuel uplifts, get status updates and have live chats with the Jetex operations team 24 hours a day. The firm has also collaborated with Honeywell on a trip planning application that gives its clients access to Honeywell GDC flight support services on the move.

Canada’s Skyplan, too, has a presence in Dubai. The company offers despatch services to both commercial and corporate carriers via flight planning, weather and notice to airmen (NOTAM) data from six independent sources,

airspace or operating into a specific airport. Governments track aircraft traversing their country and also charge navigational and landing fees.”

On that note, it’s worth pointing out that the Middle East is generally fairly easy to enter, especially the most popular destination Dubai, but it is also worth knowing where to fly and how long it will take to reach your destination once on the ground, since the Emirate can be very congested. Drew Barnes, master trip owner for Universal explained: “Dubai International is offering slots, but often these differ widely from people’s desired schedules.”

Colleague Hassan Hilliard elaborated: “There are three major airports to choose from: Al Maktoum International, Dubai International, and Sharjah. Al Maktoum is a great option, and approximately a 25-minute drive to the Jumeirah hotel area. Arrival and departure airport slots are required, but there are usually no issues with availability. This location does not experience delays with landing and holding times, whereas delays at Dubai International may be up to 45 minutes.”



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ON SITE PAINT SUPERVISION

Photo © Bernard SEBASTIEN OGNIEP

Air brushing:
Didier Wolff goes
under cover while
supervising a project.

Let us spray...

Creating heavenly aircraft liveries requires more than divine inspiration.

Liz Moscrop gets the picture from a brace of designers with two very different angles of attack.

The world's most exclusive art gallery is 25,000ft above the ground, flies at Mach speeds, and you might be lucky enough to catch a glimpse of an exhibit, should you be using the same airspace.

This is French designer Didier Wolff of Happy Design Studio's vision – to use aircraft as moving canvases.

He said: "It is very important to imagine the aircraft in flight."

One of the stars of this aerial showcase is his decoration of a Bombardier Global 5000, for which he has won several awards. The design was born from a bread plate. A man loved the symmetry and colours of a pattern of squares on a plate he owned and wanted to translate its essence on to his aircraft. Wolff thinks in 3-D, so a fuselage becomes a living entity for him, as he pictures the shape it traces traversing the sky. He explained: "I met with the owner and his family and we sat for a day around his table, which was a wonderful collaborative process."

Wolff is a familiar name in the Gulf, thanks to his work for Maximus Air Cargo, as well as other striking projects. He now has two new airliner schemes under way, one of which is for an undisclosed Middle Eastern client.

While Wolff has his heart in the clouds, one of the world's most successful livery designers takes the opposite stance. His feet are planted firmly on the ground.

South African Craig Barnett founded Scheme Designers almost two decades ago, after creating a design for his own aircraft, which was so technically brilliant that the paint shop he took it to asked him to work with its software to replicate the idea. One airframe led to another and, today, his company has developed more than 11,000 paint schemes.

As a child, Barnett helped his father restore a World War II Spitfire IX to flying condition. He earned his pilot's licence at 17 and moved to the US in 1985, where he became an instrument-rated commercial pilot.

His designs range from aggressive sharks and leaping dolphins to regular stripes – in fact anything that an owner cares to choose. Barnett explained: "Most owners see their aircraft on the ground, so the design has to work for that configuration."

Indeed, often people choose to put a line along the fuselage, and may make the mistake of angling that up, as if the aircraft were climbing, which looks odd on the ground, particularly in smaller tricycle gear types.

He added: "An aircraft's paint scheme is the most emotional and visible part. To engineer the perfect look, a designer has to have a visceral understanding of what brings out the beauty of each individual aircraft."

Thoughts and words

Wolff has always wanted to work with aircraft. At one point he taught children with autism. He said: "When I spoke with them I realised they had no filter between their thoughts and words, and did not judge themselves. They taught me a lot about creativity." This experience helped him sell his home in 2009 to invest in his own business.

Both artists say that often clients do not really know what they want. Part of their skill is to tease that out. Wolff explained: "I usually get a phone call from the owner. When we speak together I start to feel good about the collaboration. The result comes alive on the aircraft – you can't just adapt one livery across a fleet – you have to look at each one."

Scheme Designers charges a flat fee and prepares a range of initial design concepts based on a client's input. However, the designers won't stop until the customer is satisfied. They have worked with many Middle East clients, both on large and small projects for princes who are fascinated with all things aeronautical.

Barnett concluded: "When I'm dealing with someone who is mad about aviation, we just connect on that level."



Clients floored by the Ruag in the aisle...

Novel ideas for flooring material is a big step, writes Marcelle Nethersole.

Ruag Aviation often stresses that the interior of your aircraft is a place of business and relaxation, with the emphasis on stylishness and intelligent functionality.

“In close cooperation with world-class designers, we provide cabin interior completions and refurbishments, cabin restylings and integrated high-class communication and entertainment system upgrades,” said Tobias Laps, head of sales, marketing and business development at Ruag Aviation.

“As a company, we like to work closely with our customers on either upgrades or completely new installations. We like to think ahead too.”

And thinking ahead is what the Swiss company has done, as it now provides real wood flooring as an option for owners and operators looking to enhance the quality of their cabin environment.

Developed by Austria’s List components and furniture, the wood flooring can be installed by RUAG Aviation on various different aircraft types.

Approximately 10mm thick, the wood flooring adds no additional weight to the aircraft. It is available in a variety of veneers, and can be laid in different patterns in an aircraft’s entry, shower and toilet areas, as well as in sections of the main cabin. Designed to please the eye, the wood flooring possesses an attractive natural satin finish, and is

compatible with diverse floor layouts through the use of rectangular or single curved panels. It can also be personalised with inlays as well as marquetry and even lighting.

“Real wood flooring brings a touch of elegance to an aircraft cabin, a rare and distinguished charm,” said Andreas Aigner, director research and development at LIST. “Function is naturally as important as aesthetics, however, and our wood flooring is also completely safe and highly durable.”

Slip-resistant

Fully certified according to the European Aviation Standards Authority (EASA) and the Federal Aviation Authority (FAA), the slip-resistant wood flooring meets all safety and flammability requirements. A special locking system and floating installation make it easy to install and to maintain, while its high resistance to scratches and abrasions ensures convenient cleaning.

“Our continued commitment to delivering premium solutions for our customers is reflected in this exclusive new capability,” added Laps. “We are very pleased to be working with LIST to provide real wood flooring installations on business aircraft.”

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Mike Burke: "Abu Dhabi Aviation has a terrific opportunity to take advantage of areas in which the company has developed expertise."



ADA trains its focus on expansion

Abu Dhabi Aviation is set for expansion in new directions as it steps up its activities in the training and maintenance sectors.

Alan Dron reports.

Work is under way on a major new training facility at Abu Dhabi Aviation's (ADA) base at the emirate's international airport. Due to be completed in late 2015, it will contain an eight-bay simulator centre.

The first simulator on order is for the AgustaWestland AW139, while on the day *Arabian Aerospace* visited the company in October, a contract had been signed for a Bell 412 simulator.

ADA's advisor to the training centre Mike Burke, who also assists the company's business development function, said: "We're working with both civil and military customers to fit out the remainder of the eight bays."

Previously, ADA has used simulators in Dubai and Italy to provide training for its own personnel, but the creation of the new on-site centre will allow the company to undertake this work itself.

The length of training courses offered by ADA varies, but a type certification course for the AW139, for example, consists of two weeks' ground school plus 22 hours of simulator training. A 'Level D' simulator – one which has capabilities that mimic those of the real aircraft so faithfully that an hour in the simulator counts as an hour in the air – is used.

"The majority of our training will be primarily civil, to satisfy our own needs, but also the needs of the region," said Burke. However, he added, the military was also looking forward to the completion of the new centre and it was likely the facility would also play a significant role in the latter sector: "I think everyone who takes a look at what's going on in the region realises there are defence commitments that need to be met."

Significant increase

Among air arms whose pilots currently train at ADA are the Dubai Air Wing and the Royal Jordanian Air Force. Burke foresaw a "significant increase" in third-party training and the number of countries to have contacted ADA, from both the MENA region as well as the Indian sub-continent, has continued to grow.

"We're not doing ab initio [training] but in the future, as the military requirements increase, because there is an Emiratisation requirement to create these young pilots, we see that as a growth area," said Burke.

Currently, the split between civil and military training is about 60:40, but this is anticipated to reach parity in the relatively near future.

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on Page 116

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ADA has around 130 helicopter pilots. Each comes to the training centre twice a year to ensure their flying skills are maintained at the required level.

But it's not just for pilots. ADA also trains engineers, flight attendants and other staff; it uses Etihad Airways' training centre for much of its flight attendant work.

The pilots also use ADA for specific safety-related training, such as egress from an aircraft, survival skills and how to handle dangerous goods.

Considerable opportunities

With only one other training centre in the region incorporating simulators, and which was largely concerned with training its own, rather than third-party personnel, there were considerable opportunities for ADA in this sector, said Burke.

By the time the centre is into its second year of operation, he estimates that it will be providing more than 3,000 hours of simulator operation annually.

"The beauty of a simulator is that it's available 20 hours a day, doesn't burn any fuel and doesn't break down very frequently," he said.

"Training has changed considerably since I arrived here. Initially, we used the aircraft but this was not ideal, firstly, because you're putting an aircraft at risk and, secondly, because it's not available to earn revenue."

It took a while, he admitted, to convince the

The company is increasingly branching out from its traditional business of providing transport for Abu Dhabi's offshore oil and gas sector.



company hierarchy that simulators were the way forward: they believed that, by using their own helicopters, the only cost the company incurred was for fuel. However, when using a real aircraft: "You're getting sub-optimal training because some emergencies you can discuss but not practise."

Simulator training for the Bell 412, a well-established type with a lot of customers in the offshore sector, is likely to be particularly in demand: "I think we'll maximise the utilisation of that rather quickly."

As well as pilots and cabin crew, ADA provides engineering training for its own personnel and is in discussions with AgustaWestland to expand this area through a '147 licence' that will allow it to train third-party engineers. "There's a large need for qualified, licenced engineers equal to, if not exceeding, the requirement for pilots," said Burke. "If you can't repair aircraft, you can't fly them."

"Right now, primarily what we're training is licenced engineers for a new type rating; they come in with a licence and we need to upgrade that to [cover] a new aircraft type. We also have a raft of other types of training that's required – human factors and documentation etc – for all our engineers."

ADA rings up more Bells for offshore work

Abu Dhabi Aviation (ADA) is already the largest commercial helicopter operator in the Middle East, using around 60 helicopters.

These are mainly from the Bell stable – a mix of the workhorse Bell 412s and 212s, plus a few of the smaller 206s – and a fleet of around 15 AgustaWestland AW139s.

Three Bombardier Dash 8 turboprops – two DHC-8-300s and a single DHC-8-200 – are also in the fleet. (The company also operates several other Dash 8s on behalf of the Abu Dhabi Government.)

"We have 10 Bell 525s on order, plus two new Bombardier Dash 8 Q400s," said ADA's Mike Burke.

"The helicopters, which will be additional to what we already have, are scheduled to arrive from the second quarter of 2016, while the first Q400 will arrive in June 2015 and the second, shortly afterwards."



The Dash 8s are used on daily flights to Abu Dhabi's offshore islands, both on oil industry support duties and on conventional passenger transport services on behalf of the emirate's government.

The new Bells will typically carry 16 passengers and two pilots with fairly significant range; the anticipation is that they would be used for longer offshore legs.

"I think the [offshore] market will continue to grow for as long as civilisation continues to burn hydrocarbons and that it will move further and further offshore, taking advantage of oil reserves that haven't even been found yet," said Burke.

Providing helicopter transport servicing the offshore

oil and gas industry has been ADA's core business for many years, but Burke said many other aspects of the commercial helicopter market had not yet been fully developed.

"For example, all the high tension wires you see running through the country have to be inspected. The best and most efficient way to do that is from the air."

As well as checking the cables, ADA is also using its rotary-wing assets for assessing the condition of the insulators on the power pylons; as desert sand and other debris gradually builds up on the insulators, there is a detrimental effect on their transmission properties, which can become quite significant – a loss of up to 22% in transmission capabilities.

ADA has equipment on its helicopters that can clean the insulators with high-pressure water. Spraying a jet of water on high-voltage cables is not normally something to be recommended, but as the helicopter is in the air and thus not grounded, the possibility of receiving a massive electric shock does not occur. From the commercial perspective, it has the added advantage that the power company does not have to shut off the supply while the cleaning process is being carried out.

Pipeline inspections can also be carried out more swiftly from the air than from a ground vehicle and the view is considerably better.

Another area of activity being explored is helicopter emergency medical services (HEMS): "That market is in its infancy here. We are in discussions with Cleveland Clinic, which is opening a hospital here, about providing that sort of service for them," concluded Burke.

Global footprint

For a relatively small company, said Burke, ADA has a global footprint. It stations aircraft and personnel in nations around the globe including Spain, Brazil, Malaysia and Indonesia, handling not only the company's traditional oil industry services but also duties such as fire-fighting.

On the maintenance side, meanwhile, ADA is expanding its maintenance operations in association with AgustaWestland.

The two companies agreed to set up AgustaWestland Aviation Services (AWAS) as a joint venture in 2011, offering helicopter spare parts and helicopter and component repair and overhaul, as well as customisation, modification and upgrades.

At the Abu Dhabi Air Expo in February this year, the companies announced the establishment of AWAS, providing maintenance facilities for some 150 AgustaWestland helicopters in the Gulf and wider Middle East region.

The establishment of AWAS is a further example of the expansion of ADA's activities.

"We have a terrific opportunity to take advantage of areas in which the company has developed expertise," said Burke. "Going forward, whatever we can imagine, I think we can make happen."

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The sixth series of the Dubai Helishow is set to run from November 4-6 2014 at the Grand Stand, Meydan Hotel, Meydan Racecourse. **Marcelle Nethersole** looks forward to the event.

Dubai gears up for sixth Helishow

The biennial Helicopter Technology & Operations Exhibition was first launched in 2004 as an opportunity for the international helicopter community to showcase its products, services and technologies covering the commercial, civil defence and military helicopter sectors.

The Domus Group, which organises the event, said this year's exhibition would focus on homeland security products and services aimed at protecting a nation's citizens from external or internal threats.

Managing director Ahmad Abulhoul said: "The show provides an ideal platform to meet and interact with prospective customers from the Middle East. The success of the 2012 event demonstrates how important the Middle East is to the industry as an emerging lucrative market.

"This year's show will not only see the expansion of homeland security products and services but also the air medical and rescue sector of the show highlights the evolution and continuing growth within this industry."

He added: "The helicopter industry is experiencing solid growth on a global level as more countries continue to develop their aviation infrastructure. A safe, efficient and vibrant aviation system in the region is crucial to our nation's economic health. The introduction of a military and homeland security sector this year, along with a continuing focus on air medical and rescue demonstrates our commitment to develop the show in line with industry expectations."

Considerable opportunities

The exhibition company has announced that the event will showcase key helicopter companies from across the globe, including Russian Helicopters, AAL Group, Petroleum Air Services, Turner Aviation, Aerogulf Services, Ivan Kristoff, Lockheed Martin Corporation, Sikorsky Aircraft Corporation, Motor Sich Middle East, and A2B Aero Limited.

AeroGulf, one of the exhibition partners and the oldest commercial helicopter company in Dubai, will be offering helicopter aerial tours from the venue this year. Captain Mike Ellis, director of operation said: "AeroGulf Services is proud to have been able to serve the United Arab Emirates region since 1976 and we look forward to continuing to do so for the next 37 years and beyond."

Russian Helicopters, the main show sponsors for 2014, has been exhibiting since 2008 and a spokesperson said: "Every time we participate in Dubai Helishow we gain the best exhibition, business and cultural experience. From our point of view, Dubai Helishow is one of the best exhibitions organisationally and in terms of business development perspectives.

"For the 2014 show, our main purpose is to promote perspective multi-role Russian-made helicopters in the Middle East Region and strengthen existing partnership relations."



Russian Helicopters will be promoting its experience at fire fighting demonstrated by its Ka-32A11BC fire-fighting helicopter.

"The air medical and rescue sector of the show highlights the evolution and continuing growth within this industry."

AHMAD ABULHOUL

Continental Aviation Services, another key exhibitor, is one of the oldest fully Emirati-owned aviation and military support companies in the Middle East and its CEO, Juergen Fiebig, said: "We are pleased to return to the show with our second participation.

"We welcome another opportunity to refresh our acquaintance with existing and new customers, and to have the opportunity again to network with co-exhibitors and establish new bonds and friendships.

"We hope to contribute to the show with our updated range of products and services, which we feel will benefit regional helicopter owners, operators and service providers and in general promote aviation as one of the fastest growing transportation sectors in the region."

The Dubai Helishow is the third largest helicopter show in the world and Abulhoul expects this year's event to be its biggest success to date. "The sixth edition of the exhibition, demonstrates the success of the show in adding business opportunities from the GCC and the MENA Region," he said.

"It is a true indicator of the appeal of international exhibitors to the Middle East region as it is their portal to business opportunities and partnerships. At its launch in 2004, the event turned out to be an instant success by attracting more than 2,500 industry visitors representing 20 countries, including high-powered key delegations from GCC countries, and we are looking forward to welcoming even more exhibitors and visitors to this year's show."



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EIAST joins global satellite alliance PanGeo

The Emirates Institution for Advanced Science and Technology (EIAST) has joined the first global alliance of Earth observation satellite operators, PanGeo.

The alliance was announced at the annual summit on Earth observation business, in its sixth edition, in Paris and is a coalition between EIAST and three other parties, to share the products, data and images derived from their satellites.

The PanGeo Alliance currently includes four satellite entities from around the world: Dauria Aerospace (US/Russia), EIAST, Elecnor Deimos

(Spain) and Beijing Space Eye Innovation Technology (China).

Salem Humaid Al Marri, EIAST's assistant director general for scientific and technical affairs, was a speaker at the summit and talked about EIAST's strategy and the latest achievements of the institution, including the launch of DubaiSat-1 and 2. He also updated the attendees on the KhalifaSat project, which will be the first to be manufactured by Emirati engineers in the UAE.

HE Yousuf Hamad Al Shaibani, director general of

EIAST said: "The Middle East and Africa have a genuine need for a large amount of satellite imagery to support their activities in energy, natural resources, the environment and infrastructure development.

EIAST will benefit from the PanGeo coalition as the alliance will co-ordinate access to archives for all members, so that each member can see what is available and directly request images from the entire alliance archive.

The PanGeo fleet is composed of nine satellites currently in orbit: Perseus-M1, Perseus-M2, Dauria-

DX-1, DubaiSat-1, DubaiSat-2, Deimos-1, Deimos-2, TH-1-01 and TH-1-02. This fleet will be expanded to more than 30 satellites with the launch of KhalifaSat, the Perseus-O and Auriga constellations, and with the expansion of the TH-1 constellation, plus satellites brought into the alliance by prospective new members.

The alliance will benefit from EIAST because of the products and services that it provides. These include different processing levels on standard image products, standard base-maps, and super-resolution techniques. Further value-added products and applications include civil development and construction, environment, emergency response and disaster management.

In terms of ground stations, both antenna hosting and ground support services are provided by the UAE organisation.

WhiteKnightTwo: two days of flying in the New Mexico and El Paso air space.



Virgin Galactic, the privately-funded space company owned by Abu Dhabi's Aabar Investments and Sir Richard Branson's Virgin Group, has taken another giant step towards the start of operations of the world's first spaceline.

The company deployed WhiteKnightTwo (WK2) to Spaceport America for two days of flying in the New Mexico and El Paso air space.

With this exercise, the world's first commercial spaceline continues testing, incorporating pilots and team members, who are responsible for the flight programme.

The aim of the test flights was to continue to familiarise the spaceline with scheduling and the

Spaceport flight is a giant leap for Virgin's WhiteKnightTwo

New Mexico airspace processes.

Over the two days, WK2 flew several simulated launch profiles, spaceship approaches, and a divert to El Paso airport, putting Virgin Galactic one step closer to launch.

"I am delighted to see WhiteKnightTwo flying in the skies of New Mexico. This is a great step on such an incredible journey," said Christine Anderson, executive director of the New Mexico Spaceport Authority (NMSA).

During the exercises, WK2 conducted Spaceport practise approaches, flew

on simulated launch missions, refuelled and changed crews, and landed at El Paso airport on a simulated divert profile.

"Bringing WK2 and crew back to New Mexico is part of our on-going preparations and puts us one step closer to our first commercial flight," said George Whitesides, CEO of Virgin Galactic.

Dreams

"We thank NMSA for their continued role and leadership in realising so many people's dreams for space travel."

So far, the company has

accepted more than \$80 million in deposits from approximately 700 individuals, which is 20% more than the total number of people who have ever gone to space.

The new spaceship (SpaceShipTwo, VSS Enterprise) and carrier craft (WhiteKnightTwo, VMS Eve) have both been developed for Virgin Galactic's vehicle fleet by Mojave-based Scaled Composites.

Founded by Burt Rutan, Scaled developed SpaceShipOne, which, in 2004, claimed the \$10 million Ansari X Prize as

the world's first privately-developed manned spacecraft.

Virgin Galactic's new reusable vehicles, which will be manufactured by The Spaceship Company in California, share much of the same basic design, but are being built to carry six customers, or the equivalent scientific research payload to space.

The vehicles will allow an out-of-the-seat, zero-gravity experience with astounding views of the planet from the black sky of space for tourist astronauts, and a unique microgravity platform for researchers.

Rockwell Collins' Lee Costin demonstrates Cabin Connect.



RC connecting to the Middle East

After acquiring ARINC nine months ago, Rockwell Collins now has big plans to improve services in a variety of directions, as Steve Nichols has been finding out.

Rockwell Collins is predicting a big future for its international and global airports division.

Mike DiGeorge, former head of Rockwell Collins' information management services (IMS) Asia Pacific division, has moved from Singapore to the UK to lead the division and says that it has great potential.

DiGeorge was speaking at a press briefing, set up to outline the company's plans and aspirations with the ARINC business.

Rockwell Collins has a newly structured senior management team and said its culture remains "customer focused".

"We are continuing to make commitments to the business and investing in new product development and we see tremendous opportunities for international growth," DiGeorge said.

"We also see strong synergies between the two businesses and, more importantly, our customers are telling us they appreciate the fact they can get more services and technology from a single source."

ARINC's airport division is likely to see a big investment from Rockwell Collins after the results of a thorough review of the business, which is currently under way. The results will be known by the end of the year.

DiGeorge said the company was also extending its ARINC AviNet global network, with new VHF base stations to extend coverage around the world.

"We see a lot of potential in the Middle East and are also planning 25-40 new ground stations across Africa. The timescale for doing this is sooner rather than later to help fill the gaps in our network. Our expansion is never complete, but we have done all the easy locations and need to work on others where there may be political or organisational blockages."

DiGeorge added: "Our unique offering is also our HF datalink solutions, which are supported globally."

Meanwhile, ARINC has an impressive track record of airport

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systems sales in the Middle East and is continuing to pitch for new contracts.

Paul Hickox, senior director, EMEA airports and security solutions, said it was in the process of bidding on a number of contracts for Kuwait's new airport.

Kuwait International Airport is planned to significantly increase its capacity and establish a new regional air hub in the Gulf. The first phase will accommodate up to 13 million passengers annually.

The plans will also have the flexibility to increase this to 25 million and ultimately 50 million passengers per year.

"We will be submitting our tender documents in November," Hickox said. "This will be for networking, passenger processing, check-in kiosks, airport operations and security."

Hickox added that it is also pursuing contracts for five airports in Egypt. This is for common use terminals in the country, plus work on airport operations solutions.

Rockwell Collins submitted its tenders in September and hopes to hear an announcement in the new year.

New technologies

The company also said it would soon have news of further work at Qatar's Hamad International Airport. ARINC has been working at the airport for around seven years, mainly on a \$400 million systems integration project. It said it would be soon announcing news of a contract for "new technologies", in partnership with another major supplier – most likely Thales.

Hickox added that Hamad International Airport was "taking a pause" prior to the next round of developments in Qatar, work in which Rockwell Collins/ARINC is keen to be involved.

He also said that the company is involved in supporting Dubai World Central (DWC) in its next phase.

"There are big plans for DWC," said Hickox. "We will be extending our systems at the new complex. We have also been helping support passenger systems at DWC while Dubai International (DXB) has been undergoing runway improvement work."

The company is also bidding on a full systems integration contract at Egypt's Alexandria Airport.

In the air, Rockwell Collins is putting a lot of faith in its so-called "future connectivity" services. That is, offering to connect the cockpit and the cabin with the ground, aiming to deliver more aircraft applications and content. Key to this will be its value-added reseller partnership with Inmarsat on the upcoming GX Aviation Ka-band broadband satellite service, currently due for global launch in mid 2015.

Inmarsat has one of its trio of I-5 satellites in orbit but still has two more to launch. Unspecified issues with the Russian Proton launcher, which failed to deliver a satellite into orbit upon launch in May, meant that the GX programme slipped.



Paul Hickox: "There are big plans for DWC. We will be extending our systems at the new complex."

Proton did successfully launch again in late September, carrying a Russian Government satellite. At the time of writing, Inmarsat's next two launch dates were unknown, but are likely to be in late 2014 or early 2015.

Rockwell Collins has big plans to integrate its ARINC Cabin Connect in-flight Wi-Fi solution with the GX Aviation service. It says GX's (up to) 50Mbps bandwidth will allow it to stream near real-time TV content from global events. It is also working on SMS and telephony applications, delivered over the system's Wi-Fi connection.

Alexis Hickox, senior director, aviation solutions, information management services, said there was a lot of interest from airlines about the company's future GX capabilities. It did, however, receive a recent setback when Virgin Atlantic announced it would be fitting Gogo's K-band system on its fleet.

ARINC has been flying its SwiftBroadband-based Cabin Connect system on three Virgin Atlantic Airbus A330s on an extended trial. Hickox said it had been working well and there were currently no plans to remove it from Virgin's A330s.

She added: "A whole new generation of connected cabin services will be coming down the line in the future. And right now we are transferring five terabytes of data and nearly one million credit card authorisations to aircraft each year via SwiftBroadband."

In terms of Cabin Connect, ARINC/Rockwell Collins may be a casualty of politics/corporate tie-ups rather than there being any fault with the system's performance.

One of Gogo's main customers in the US is Delta, which is a big user of its air-to-ground (ATG) connectivity service. Delta also happens to be a big shareholder in Virgin Atlantic, which may explain its interest in supporting Gogo, especially with AT&T's rival ATG system ready to come off the drawing board and into reality over the next few years.

Delta has a big interest in making sure its

investment in Gogo ATG technology on its aircraft is safeguarded.

Finally, Rockwell Collins said that its ARINC Direct business aircraft solutions business now supports 3,500 business aircraft around the world every day and there were a number of new solutions in the pipeline.

It is about to launch a new multi-leg fuel planning service that aims to reduce the overall aircraft fuel bill over time by better managing the cost of filling up on each leg. There is likely to be a small average benefit per leg, but ARINC Direct said it would add up over time to make substantial savings.

ARINC Direct is also offering a new multi-country advanced passenger information system (APIS) for business aviation flights. Until recently only the USA required APIS submissions for business flights, but ARINC Direct can offer the services for all countries, holding the passenger information securely.

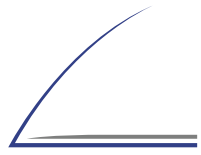
Earned the right

The ARINC Direct iPad app has also been expanded to cover stand-alone weight and balance calculations, pulling existing performance data for each leg of the journey and saving it to a website/the cloud for record-keeping purposes.

Coupled with the iPad's WiFi connection and an Inmarsat SwiftBroadband satellite link, the app creates a conduit for live weather data, geo-referenced charting and constant connectivity with dispatch and flight management offices.

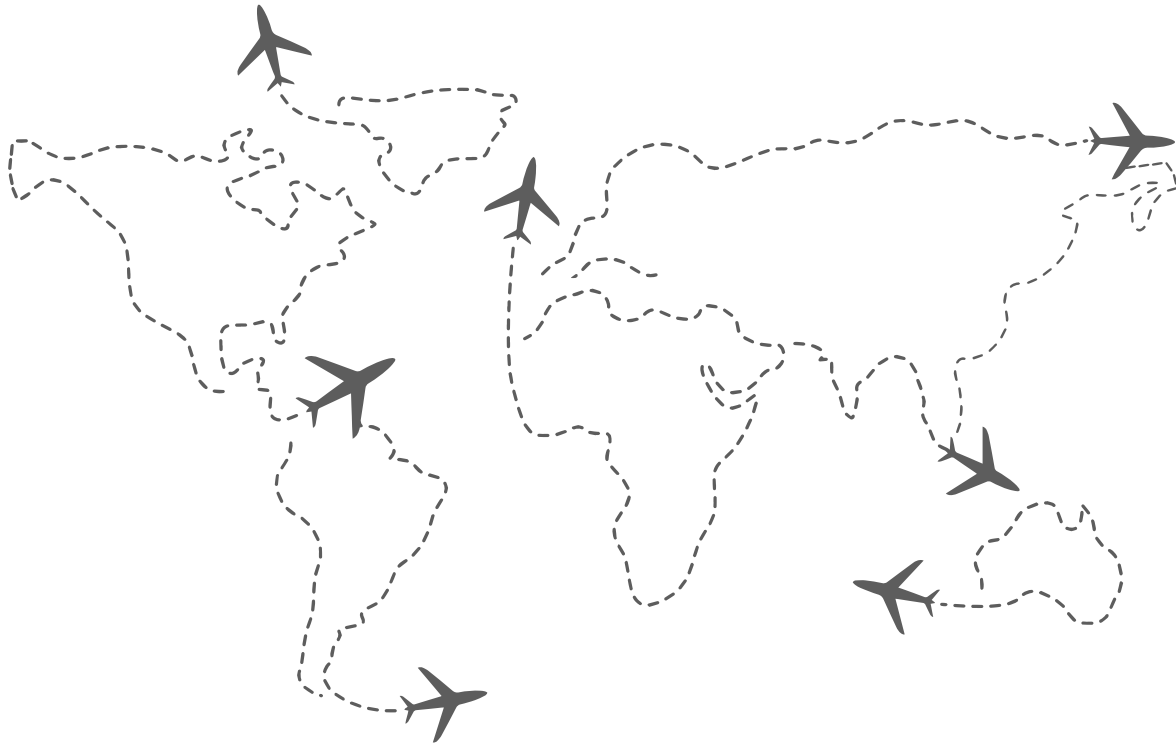
DiGeorge concluded by saying that it was an exciting time for Rockwell Collins and ARINC. "Many of the employees within both companies were excited about the acquisition when it was announced and they haven't been disappointed," he said.

"Both companies have been serving the aviation industry for 80 years. We are a good cultural fit and will continue to grow our core businesses."



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The Lufthansa brand may open doors for LH Consulting but it's the solid work of a group of aviation professionals that ensures it doesn't slam shut again.

Chuck Grieve talks to Alexander Manakos, the German consultancy's man in the Middle East, about the opportunities and challenges in the region.

LCG keeps knocking on the door of opportunity

The unprecedented growth of aviation in the Middle East creates challenges that will be seen – depending on your perspective – as threats or opportunities. Lufthansa Consulting GmbH (LCG) is firmly of the latter opinion.

With more than 25 years of problem-solving behind it, this offshoot of the respected global Lufthansa brand takes pride in finding solutions that work in the real world of aviation.

For Alexander Manakos, the partner responsible for LCG's business in the Middle East, it is an interesting time for that market. "We can see several groups of airlines and airports, each group sharing similar challenges that are completely different from those of another group," he said.

Some airlines and airports are "struggling for their place" in what is a highly competitive market. Opportunities arise from such tough competition, and Lufthansa Consulting hopes to be there when they do.

"Our greatest satisfaction comes from seeing the successful implementation of strategies and plans that we have developed with our clients," said Manakos.

LCG was set up in 1988 in response to international demand for the aviation know-how available at Lufthansa. In its early years, it often found itself working alongside the German foreign development agencies: the Federal Ministry for Economic Cooperation and Development (BMZ) and the German Society for Technical Cooperation (GTZ).

Over the next decade, the company focused on large airline restructuring projects, extending its services into airports from 2006 with successful planning and privatisation work.

Like the industry it serves, LCG has evolved from an organisation that mainly helped governments and institutions develop their air transport industry to an aviation management consultancy creating sustainable value for its clients and their shareholders.

In 2012, LCG completed its own transformation into a market-oriented, customer-focused set-up. "We felt the company should move closer to its clients," said Manakos. "Now partners and associate partners are responsible for dedicated geographic markets where we have identified significant and growing demand for consulting services.

Tremendous growth

"One of these markets is the Middle East, where we have been working successfully for many years and where we see tremendous growth in the aviation sector, in particular in the GCC."

The company's four solution groups – operations, finance, transformation and commercial – work with the heads of geographic markets to develop tailored solutions.

LCG projects usually spread across several of the solution groups. Manakos explained: "For a start-up or restructuring project, you'll need the perspective from financial, operations and commercial, plus strong input from

transformation when it comes to implementing and managing changes.

"We also see less complex projects, such as the revenue management for an airline or the development of customer relationship management (CRM) capabilities in an organisation, which would be supported by the know-how of our commercial solution group.

"Since Lufthansa Consulting is an industry specialist, we are regularly called in to manage airline start-up projects," said Manakos. "For the same reason, as well as for our strength in implementation management, we run large transformation processes. For example, we have worked with a GCC national carrier over several years in its restructuring and privatisation processes."

LCG has the strength and depth of experience of one of the biggest airline groups behind it. As well as its own team of about 60 full-time consultants, it has access to Lufthansa experts. "We give our clients a very strong quality promise and we know we will deliver it," said Manakos. He, himself, has wide international experience gained through postings in America, Africa and the Middle East.

He spent 18 months in west Africa working on the restructuring of a national carrier before relocating to Cairo, where he oversaw the company's projects with EgyptAir. After two years, he moved to Dubai to take care of regional sales for Africa and the Middle East.

He returned to Frankfurt in 2010 with a global

“There are situations specific to the Middle East that force us to find solutions which are very different to what we might otherwise propose.”

ALEXANDER MANAKOS



brief for cargo projects and an additional focus on clients in Egypt, Saudi Arabia, Lebanon and Jordan. Since 2012, Manakos has held responsibility for all LCG’s Middle East business, which includes project sales and delivery across its entire service portfolio.

LCG’s strong focus on implementation means its people not only develop the strategies and solutions on paper, but also know how to make the recommendations work in real life. “We provide the quality of service that is inherent to our brand.”

Although clients may be looking to embed Lufthansa-style quality, precision and reliability in their organisations, years of experience in the Middle East have taught Manakos and his colleagues the absolute necessity of adapting ideas that have worked at Lufthansa to the local situation.

“There are situations specific to the Middle East that force us to find solutions which are very different to what we might otherwise propose. We have to find options suitable for the regional circumstances that take the requirements of corporate social responsibility on site into consideration. We always proceed in a sensitive and careful manner.”

LCG has enjoyed long-term relationships with many clients, working on major restructuring as well as smaller projects. Its work for EgyptAir, for example, has included projects on corporate structure, performance enhancement for cargo and ground service companies, plus specialised

projects in the commercial area of the passenger airline.

In the Gulf, the company worked with one of its client airlines for more than four years, supporting the implementation of its strategic plan. This included organisational restructuring, process re-engineering and the operation of a project management office. Specific tasks, such as maintenance cost reduction, have been carried out for a national carrier in the GCC.

“We also have developed business plans for different ventures in the Middle East – from a cargo operator in Lebanon to a private aviation company in Saudi Arabia,” said Manakos. “We have quite a variety of projects and clients in the region. It’s a healthy mixture and we are proud of the trust we have established with clients over the long term.”

Satisfaction of clients

What does success look like for LH Consulting? Manakos says it is the satisfaction of clients. “Nothing is more valuable,” he added.

Success can range from cost reductions in specific areas, such as maintenance or fuel. Or it can be increased seat load factors, yields, or total revenues, depending on the project scope.

Manakos expects opportunities to arise from the tough competition in the aviation sector and the constant pressure on airlines – whether owned by the state or in private hands – to operate profitably. “Governments appear to be finding it less and less acceptable to finance flag-carriers

that are losing significant amounts of money, with no improvement in sight,” he said.

“Organisations have to find ways to improve their competitiveness, work on their cost and find ways to generate more revenues by offering value to their customers and by retaining them.

“But, increasingly, airlines are interchangeable in the eyes of their customers. Airlines have to focus on offering value to their passengers to make sure they will still be their passengers tomorrow.”

Manakos says LCG needs a “relatively stable environment” to do its work successfully. The volatility in parts of the Middle East presents a severe challenge.

He and his colleagues are also “well aware” that consultants are among the first casualties of budget cuts, so “our challenge is to demonstrate to our clients that the value we deliver to them is worth the money they pay for it and is something they do not wish to lose”.

As to the future, he said: “It is interesting to see how different the strategies are that the big players in the Middle East seem to be following. I believe some airlines are still trying to win a battle that they will most probably lose.”

From an airport perspective, the challenges are as diverse as the size and nature of the operations themselves. Said Manakos: “I think there is still a lot of scope for some airports to fully use the potential of non-aeronautical revenues and also to serve as a stimulator to their national economies.”



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Hareb Thani Al Dhaheri:
 "It's a good step
 for Etihad to have
 their own school."



A bright future on the Horizon

After the sale of its fixed wing division to Etihad, Horizon is focusing on helicopters as Alan Dron finds out.

Just after 5am on a late summer's day in Abu Dhabi and the sun is still low in the sky as the first sorties of the day's training programme at Horizon International Flight Academy lift off the pad at the base outside Al Ain.

As the mercury starts to climb, so does the first wave of orange-and-white Bell 206s and 407s, as they rise, dip their noses to pick up speed and clatter off into the desert to start exercises in the school's designated training areas, well clear of other traffic.

The reason for the early start is, of course, the heat. In the summer months, flying starts at 5am and ends around noon, to avoid at least some of the day's scorching temperatures.

The academy is undergoing major changes. It was announced in May this year that its fixed-wing activities were being transferred to Etihad Airways, to help provide a steady flow of new recruits for the UAE's fast-growing national carrier.

You might think that losing more than half the academy's complement of trainees – it had a capacity of around 250 students when it handled both fixed- and rotary-wing activities – might have depressed the remaining staff. However, CEO Hareb Thani Al Dhaheri

is confident that steadily increasing demand for military helicopter pilots in the Gulf will ensure a good future for the establishment.

Around 95% of the helicopter trainees at Horizon, situated almost literally across the road from Al Ain Airport, are heading for military or para-military roles and, given the geo-political situation in the region, demand for their services is likely to continue to grow.

Al Dhaheri is phlegmatic about the departure of the fixed-wing section. "The decision came to me from [Horizon's parent company] Mubadala. It's a strategic decision and it's a good step for Etihad to have their own school."

Part of the reason for the decision, he believes, is the introduction in recent years of the multi-crew pilot licence (MPL). "That's quite different from the air transport pilot's licence. You have to train your pilots [under the MPL] on your operating manual and I think the growth we have witnessed with Etihad meant they had to have a school of their own to train their own pilots."

Like many ex-military pilots, Al Dhaheri has a 'can-do' attitude and is confident in Horizon's future.

Continued
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Horizon is looking at the Bell 505 as a possible successor to some of its existing fleet.

CONTINUED FROM PAGE 127

The academy has a fleet of around 25 helicopters, split almost evenly between the Bell 206 and its more modern, four-bladed development, the 407. Al Dhaheri describes the latter as an “advanced 206 with a semi-glass cockpit” and more power.

“The 206 had proven itself a long time ago but we are thinking of something new to replace it if we have to. We’re happy with its operation, but new aircraft are coming on to the market.” No decision as to any successor has yet been made, but Horizon is looking at the Bell 505, he said. The current fleet achieves around 15,000 hours a year in the air.

Most of Horizon’s students come from the Gulf Co-operation Council nations, together with some states from outside the region that Al Dhaheri declined to name. The small number of civilian pilots attain a commercial pilot’s licence (CPL) after a 52-week course that starts with 17 weeks of ground school. The equivalent qualification for military trainees is the basic flight training licence, which follows essentially the same syllabus.

Higher courses include those for flight instructor (civil) or qualified helicopter instructor (military).

Horizon also handles other military courses, incorporating some tactical flying including low-level navigation and landings on sand.

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Following the departure of the fixed-wing component, Horizon has close to 100 staff, including around 35 helicopter instructors. They come from around the world, said Al Dhaheri. "Name a country and I have someone from there."

Weather is not normally a problem at Al Ain and, while there are no airspace restrictions, Horizon co-ordinates its flight activities with a nearby air force college that also undertakes flying training, to avoid any conflicts.

"The Horizon helicopters get flight clearance from the adjacent airport as they head off to the academy's dedicated training areas 15-20 miles away. These are sufficiently remote to allow training to proceed without bothering anyone," said Al Dhaheri.

Once military pilots leave Horizon, they go back to their respective countries to do conversions on types as varied as the Sikorsky S-70 Black Hawk, Boeing CH-47 Chinook and Eurocopter AS565 Panther.

Al Dhaheri, himself, was a Super Puma pilot with the UAE Air Force and went on to set up the country's naval aviation arm, before retiring as a brigadier a few years ago.

When the offer came to take over Horizon, he immediately knew it was the ideal job. Originally from Al Ain, he and his family still live nearby

and he is happy to be back in harness again: "A pilot smelling the [fuel] fumes... it's like perfume for him," he said, smiling.

The area around Horizon is being developed as an aviation hub. Apart from neighbouring Al Ain Airport, composites specialist Strata Manufacturing is located a few hundred metres up the road and more aerospace-related organisations are expected to move in over coming years.

Looking into the future, there is room to expand at the Al Ain site and increasing emphasis is being put on synthetic training.

"The future is concentrating on synthetic training; it's a must. Frankly, it's less of a headache. You don't have weather or slot problems."

The academy currently has two generic simulators, with another on order and a fourth acquisition planned. The new ones will be specific for the Bell 206 and 407.

Horizon's reputation as a flight training organisation is already spreading beyond the Middle East, said Al Dhaheri, hinting that expansion could be in the air if demand from either the UAE or outside grows. "We would open other sites in other countries if required. We would go somewhere that we could lower our overhead costs and where there were no restrictions on airspace," he concluded.



Hareb Thani Al Dhaheri, is a former military Super Puma pilot.






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Captain William Roe and SAFAs new Extra training tool.

SAFA wants you to be upset

Saudi Aviation Flight Academy (SAFA) is to launch an upset prevention and recovery training (UPRT) programme from its campus base at Thumamah, near Riyadh.

The programme will deliver to trainee pilots the skills required to safely prevent and recover from an aircraft upset, a precursor to loss-of-control in flight (LOC-I) – the leading cause of fatalities in aviation worldwide.

LOC-I is defined as flight that occurs outside of the normal flight envelope with an inability of the pilot to control the aircraft.

In order to deliver the programme, SAFA has partnered with Aviation Performance Solutions (APS).

To meet the flying requirement, SAFA has taken delivery of an Extra 330LX unlimited category aerobatic aircraft to conduct the UPRT programme.

Tremendous growth

Captain William Roe, SAFA’s managing director said: “The Extra 330LX was chosen due to its extraordinary operating envelope of +/-10Gs, which creates an exceptional margin of safety while conducting upset prevention and recovery training.

“We have partnered with APS because they have a proven record of providing fully comprehensive and guaranteed life-saving skills to enhance a pilot’s ability to recognise, avoid and recover from virtually any aircraft upset, unusual altitude or stall/spin entry flight condition.”

LOC-I has been the number one cause of fatal aircraft accidents worldwide over the past 10 years and is increasingly likely to be added to ab-initio programmes.

“Now, with the UPRT programme available in Saudi Arabia, SAFA opens up great opportunities to our ab-initio cadet pilots, professional pilots, and airlines in the region,” Roe said.

“SAFA will currently be the only civilian flight academy in the GCC to provide a comprehensive, industry-compliant UPRT programme. I have personally completed the course and can verify that it provides transferable skills necessary to deliberately and safely prevent and, if necessary, recover from upsets and stalled flight conditions applicable to a wide variety of general aviation and commercial aircraft.”

SAFA’s first UPRT training course is expected to start this month – November 2014.

Nowhere is the use of smart devices more practical than in the aircraft maintenance, repair and overhaul (MRO) world. With the civil aviation support industry changing rapidly, new and different demands need to be addressed. **Espen Olsen** looks at the opportunities offered by mobile technology.

Keep taking the tablets...

The number of aircraft in service today is unprecedented and MRO has evolved to become a major market within the aviation industry.

New developments have to take account of increasingly competitive profit margins, extensive regulatory frameworks and passenger safety.

With some statistics claiming that 99% of airline flight revenue is needed simply to break even, MRO is taking centre stage in the battle to maintain airline profitability.

In this age of 'bring your own device' (BYOD), mobile applications can drive innovation. New mobile applications, combined with an agile enterprise resource planning (ERP) support solution, will enable MRO shops to keep up with the pace of change.

Traditional MRO in civil aviation works with a lot of paper maintenance manuals; a mobile app offers these on a device in a technician's pocket. These devices enable work to become more interactive, more interesting and, arguably, more effective with the inclusion of videos and 360-degree rotational images.

Naturally adaptable

Similarly, tablets are naturally adaptable to the support of general MRO. Portable and relatively robust, they also provide the instant ability to take photographs of a specific part that needs repairing, as well as incorporating wearable technology.

It is the maintenance engineers on the ground who will benefit most from this. Instead of assessing the situation, attempting to identify the specific manufacturer part number, returning to the warehouse to retrieve the relevant part and finding that it isn't currently in stock, engineers will be able to examine faults on an aircraft in real time using a mobile device to identify the asset, immediately ascertain whether it is

available and arrange for someone to bring it to them.

By giving the technician the ability to approve a work order, view stock availability or check repair history at the touch of a screen or button, mobile devices are maximising efficiencies and time savings in MRO and broader support processes.

Mobile devices offer a window to the broad-based ERP software, its maintenance processes, sign-off, supply chain and configuration management.

Businesses should look to extend and enhance their investments in ERP by integrating mobile apps as an extension of their full ERP suite, as opposed to a separate entity.

In this way, MRO providers can significantly improve efficiency, improve the accuracy of data captured, and dramatically simplify what is traditionally a slow, paper-based process.

Management information

The more holistic an ERP solution is, the more simple it becomes to extract management information and drive out a benefit to the bottom line – and this includes the integration and use of mobile technology. In short, a mechanic can target the exact information he or she needs to carry out a repair at any location and follow a rigorous MRO process, whether it's within a sprawling hangar complex, or at a remote location.

But the use of mobile applications must not overload the user with too much information. Apps rather than full applications are the way forward in this stressful, complex operational environment.

Longer-term, with the advent of the 'internet of things' or health-and-usage-monitoring (HUMS), perhaps we'll see mobile technology develop further, with the asset itself immediately understanding its state of repair and where it needs to be in the maintenance process, with the fleet managed accordingly.

Add to this the development of wearable technology, context-aware solutions, and predictive analytics, and we could see significant reductions in complexity and workload for civil aviation MRO operators.

At IFS, our R&D team is already trialling notifications from applications on a Samsung Gear 2 smart watch as a proof-of-concept to demonstrate the ability to engage with content from ERP and EAM systems to not only read updates, but also make transactions, send alerts for certain processes and to receive important notifications in real-time – showcasing the potential of further increasing efficiencies on the shop floor.

In many instances, engineers themselves are driving the changes. By enabling mobility on the shop floor – or in the cockpit – organisations will see significant benefits in terms of remaining competitive in this market.

■ **Espen Olsen is the European director for aerospace and defence at IFS and the author of a White Paper entitled Civil Aviation MRO – the pivotal role of mobile in a dramatically changing market, which can be downloaded from www4.ifsworld.com/civil-aviation-mobile-MRO.**

Tablets are a labour saving device for the maintenance industry.





Osama Fattaleh: "We are the only truly independent MRO in the region."

Joramco has grown from a wholly-owned subsidiary of a legacy carrier into an independent MRO provider at the heart of the Middle East's growth market.

Alan Peaford *meets the man leading the charge.*

Joramco wins the vote for independence

Unlike leaders of many other MRO providers around the world, Osama Fattaleh didn't spend his formative years up to his arms in grease and studying engineering technical drawing.

Instead Fattaleh brings to the table a background of entrepreneurship, leadership and a knowledge of people.

"At Joramco we have great engineers and technicians. There is always someone who has the solutions to technical challenges. I have knowledge of the culture of the skilled Jordanian workforce and an understanding of how to build a customer-focused organisation," Fattaleh said.

Now more than two years into the job, the former Aramex chief operating officer and computer science graduate has made his mark on the Jordanian MRO business and is leading a culture change that is demonstrated by employees across the company who talk about "customer focus, quality and flexibility".

Jordan was a pioneer in Middle Eastern aviation. The country has always been committed to the industry and its national carrier, Royal Jordanian (RJ), celebrated 50 years of business in 2013.

It launched what is now Joramco in 1963 as the carrier's engineering arm, which was privatised in 2005 when the private equity firm, The Abraaj Group, acquired 80% of the new entity, leaving the national carrier as a minority shareholder.

"That makes us very different," Fattaleh said. "If you look around us at the MRO landscape, others are owned and dominated by national carriers such as EgyptAir Engineering, Turkish Technic and now Etihad (which acquired ADAT). We are the only truly independent MRO in the region, servicing a wide range of airlines who opt to outsource their heavy maintenance activities."

Aside from the 'big three' Gulf carriers, many

of the major players across the wider region choose Joramco as a service partner.

"In addition to performing all light and heavy maintenance on the RJ fleet, some of the Middle East national carriers regularly visit our facility at Queen Alia International Airport (QAIA). They include Gulf Air, Kuwait Airways, and Oman Air," Fattaleh said.

As well as the legacy carriers, all of the Middle East low-cost and hybrid airlines, such as, Flydubai, Air Arabia, Flynas, and Jazeera, are Joramco customers.

Expanding beyond the immediate region has been a goal for Joramco for some time. Joramco's partnerships now extend to customers from other regions, such as South Asia, Turkey, the CIS, and Africa. Most recently it was able to attract customers from Europe, such as Thomas Cook, XL Airways and Hifly.

Cabin modification

In addition to carrying out all heavy maintenance checks for Flydubai, the low-cost carrier selected Joramco to provide cabin modification, IFE installation, and satcom installation on its existing and new Next-Generation Boeing 737-800 aircraft.

This allowed the Jordanian MRO to develop a new niche in avionics and cabin modifications, as well as strengthening its capability to maintain Boeing 737NGs.

"Serving low-cost carriers is not about pricing only, it is about partnering with the airline to lower its overall maintenance cost and increasing the availability and reliability of the fleet," Fattaleh said. "They rely on quality MRO and a speedy MRO. We have not had a single delay, not one. And that counts for a lot."

Joramco has been working closely with LCCs to offer high quality, reliable maintenance at competitive pricing, while meeting the flexibility demanded by these airlines.



Fattaleh speaks proudly of Joramco's three-pronged value proposition – geographical location; a highly skilled labour force; and flexible high-quality services at a competitive price.

“We are in close proximity to handle light and heavy checks from Middle East-based carriers, while accommodating heavy checks from European, African and Asian customers,” he explained.

“We have a highly skilled workforce that just happens to be in a low-cost environment. Above all, we are flexible, and have the ability to partner with customers to meet their diversified requirements; aggressive turnaround times or integrated IT solutions are only some examples of our offering.”

Financial performance

Having suffered during the global economic downturn, Fattaleh said Joramco's financial performance is back on track. “We are one of the few profitable airframe MROs,” he said. “We look forward to the next phase of Joramco's tenure. We have already added the capability to maintain the Boeing 787 Dreamliner aircraft to service our biggest customer, RJ. We also invested heavily in equipping our composite shop and carried out extensive training on composite repairs to service new technology aircraft.”

Joramco has also invested in people.

In 2007 the company had the foresight to invest in developing a highly-skilled workforce by partnering with AST to create a specialised academy to EASA Part 147 standard that graduates mechanics accredited by the UK's Civil Aviation Authority. “Joramco Academy provides the company with a steady stream of Part 66 Category B licenced mechanics. This allows us to rely on an exclusive Jordanian workforce,” Fattaleh said.

Like others in the wider region, as well as Europe and Africa, Fattaleh recognises that this makes the Joramco graduates very attractive to other providers with deeper pockets.

“That's the way it is. And that is what Jordan has done for years,” he said. “We have well-educated, flexible, hard working people. It's part of our culture and part of what makes this country stable. We

know they are in demand. But listen, they go – but they don't forget. We will often meet our customers from airlines around the region and find they trained here. They know the quality they will get.

“And we also see reverse migration. Young engineers go and earn the money but then they come back to Jordan to raise families,” Fattaleh concluded.

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The sky's the limit ...on the ground

Al Maktoum International Airport at Dubai World Central will become the world's largest airport once new expansion plans are complete.

Keith Mwanalushi looks closely at the project to uncover the intricate details.

In September, Dubai Airports announced the endorsement of an AED120 billion (\$32 billion) expansion of Al Maktoum International at Dubai World Central (DWC), which will ultimately accommodate more than 200 million passengers a year.

The development is anticipated to be the biggest airport project in the world and will be built in two phases.

Saj Ahmed, chief analyst at StrategicAero Research, is not surprised with the scale of the development. "The investment in airport infrastructure by the Dubai Government is a direct result of demand and they want to be able to cater for it so that, by the time the capacity comes on stream, the airport at DWC will be ready to handle the millions of passengers that will use the facility.

"Unlike Heathrow (in the UK), DWC will put money where its mouth is and expand now, rather than get congested tomorrow and not have the ability to expand."

After the 2007 financial crises in Dubai, many

thought that the mythical bubble had burst and that all the big-dollar aircraft purchases and traffic figures would somehow evaporate. "They couldn't be more wrong," Ahmed stated, adding that whether critics liked it or not, the reality is that Dubai is now the nexus for all international travel.

Growing at more than 15% per year, Dubai International (DXB) is on track to displace London Heathrow next spring as the busiest international airport. Despite 80 days of runway upgrading and being limited to one runway, the airport is still on track to eclipse passenger traffic and create another annual record in 2014.

Over the past year Dubai's aviation sector board has been formulating a plan to accommodate the anticipated demand, with top-flight infrastructure and a completely new approach to airport design, which will enable the continued escalation of traffic while reaching new heights for connectivity and passenger service.

Dubai Airports recognises that the current



Saj Ahmed: "Unlike Heathrow (in the UK), DWC will put money where its mouth is and expand now, rather than get congested tomorrow and not have the ability to expand."

design parameters, processes and technology used in airports today cannot be applied to a larger scale airport without efficiency and service quality being adversely affected. Legacy approaches and systems must be either reworked or discarded completely to evolve and improve the passenger experience.

The first phase of the DWC project includes two satellite buildings with, collectively, a capacity of 120 million passengers annually. They will accommodate 100 A380 aircraft at any one time and will take between six and eight years to complete. The entire development will cover an area of 56sqkm.

Aviation officials in Dubai say DWC's "uniqueness lies in a radically new approach to ensure that the latest technology and efficient processes will cut the time spent completing travel formalities and reduce walking distances, enabling passengers to make fast and efficient connections between hundreds of destinations worldwide".

Dubai Airports explained how this will be

achieved: "The entire airport facility is designed around the passengers and ensuring that their journey is convenient and efficient," said Julius Baumann corporate communications manager at Dubai Airports.

He added that, for arriving passengers, the immigration process would centre on fast, efficient smart gates using biometrics. "A fast-track option will be available to arriving passengers without baggage, or with baggage that has been directed to another destination."

Interesting concept

An interesting concept is that baggage will arrive at the customer's place of choice – "at home, hotel or airport – at the same time as the passenger, or exactly when they want it delivered," Baumann noted. "If traditional baggage pick-up upon airport exit is preferred, the baggage arrivals hall will offer a clear line of sight from carousel to exit and no changes to floor level," he added.

These are just a few of the design concepts that

the Dubai authorities believe will change the way passengers travel in future. They will continue to evolve as the technology evolves and design of these processes and systems are researched, enhanced and finalised.

According to Dubai Airports, cumbersome and time-consuming airport processes continue to frustrate the traveller. Security is intrusive and inefficient and uses the same basic technology from the 1970s. Similarly, the check-in and transfer processes are wasteful and have yet to take full advantage of existing technologies.

At the root of this malaise is the fact that all of these activities take place in separate, vertical silos, while passengers bump roughly across the joins between them. This is a microcosm of the industry's current challenge. To delight customers, an integrated, customer-centric approach is now urgently needed to ensure passengers continue to return to Dubai.

With passenger traffic expected to reach almost 100 million at DXB by the end of

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2020, the further development of DWC will be a vital step towards providing the necessary facilities to accommodate passenger and cargo growth in the decades ahead and pave the way for Emirates to relocate its intercontinental hub and possibly move operations to DWC by the mid-2020s.

Ahmed emphasised that no one anywhere in Dubai had talked about closing DXB in favour of DWC and added that Emirates had not decided whether to stay or move to DWC. “Many major international hubs have two, maybe three airports serving the city. As Dubai has now expanded beyond the old city right beyond Jebel Ali, effectively mid-way to the UAE capital of Abu Dhabi, the vast desert expanse always made perfect sense to locate DWC there. Not just to have a huge footprint, but also to capture traffic from Abu Dhabi as well,” said Ahmed.

Further growth

As there is no more land available for development at DXB, Baumann said the decision to build the next phase of airport development at DWC enabled further growth to be accommodated.

However, he confirmed that the decision had been taken to continue to operate Dubai International, with its relatively new infrastructure base, for some time into the future. “A decision about whether Dubai will remain a two airport city – or whether the full development of DWC will replace Dubai International – will not be required until at least 2030 or beyond,” Baumann clarified.

Needless to say, moving Emirates to DWC will be a monumental effort. “There are good grounds for them to stay where they are downtown and, instead, monopolise DXB for

their own end and the Dubai Government could, like they did with the runway upgrades, shift other airlines to DWC,” Ahmed observed.

Not only would this mean that Emirates has a massive airport to itself, right in the thick of things in Dubai, it would also mean that rival airlines that often complain that they cannot get additional slots in Dubai will be able to have a better selection at DWC, given the huge numbers that that airport will eventually cater for. “It’s a win-win situation,” Ahmed believed.

On the other hand, Ahmed suggested that Emirates may want to split its operations – that would allow even more passenger choice as flights to one destination could be selected from either DXB or DWC. “Given that Emirates SkyCargo already has a sizeable presence at DWC, I suspect in the initial stage(s) that Emirates will move some flights to DWC from DXB and launch new flights from DWC as well,” he said.

“If they do make the move to DWC in full, then it’s likely that their vacant space at DXB would be shared amongst the existing operators. And, with Flydubai arguably growing faster than any other airline in the world and already the second largest operator at DXB, they seem the most likely candidate to benefit.”

Baumann rejects statements by sceptics who believe that, in reality, facilities such as DWC are just too big for their boots. He said the plans for DWC were based on historic growth rates, which have averaged more than 15% per annum over the past 50-plus years, as well as forecasts on future passenger growth informed, in particular, by the fleet and network expansion of home carriers Emirates and Flydubai.

“Dubai Airports aims to bring on stream passenger and cargo capacity as it is required by

our airlines and we are confident our delivery of capacity to accommodate 120 million passengers in the first phase of DWC’s development by the mid-2020 is justified by our passenger forecasts.”

Baumann continued: “Beyond that, numerous factors will influence our growth forecast in the decades ahead and, therefore, one of the reasons in favour of the modular design of the new airport is that it allows us to adjust the delivery timeline of the various passenger facilities to ensure we deliver them as they are needed, rather than all at once.”

Often not discussed [and undisclosed] is the financing for these grand and expensive projects. “The issue of financing and financial resources, when it comes to Dubai, is always controversial,” Ahmed observed.

Financial muscle

The often perceived endless pit of oil money is not quite the case. As an emirate of the UAE, oil revenues are a fraction of what they are in, say, Abu Dhabi. Much of Dubai’s financial muscle comes from financial services, tourism, commerce and trade, shipping, shopping, as well as the spin-off from aviation via hotels, excursions, food, retail and leisure-related businesses.

“That’s just the tip of the iceberg – Dubai’s economy is not dependent on any one thing so to speak,” Ahmed asserted. “What is clear about Dubai is when it comes to aviation investment, nothing stands in the way. Every conceivable penny, however that income is raised, is ploughed back into airport infrastructure, development and expansion, so that, unlike the political strangulation seen in Britain over Heathrow, Dubai will invest and grow and continue to capture global traffic.”

Clearly, the launch of the 777-8X and 777-9X by Emirates is also an extension of this growth. These aircraft will allow non-stop access to anywhere on the planet at the lowest cost.

“Money is not an object here; investing in the future is and that’s why Emirates ordered 150 Boeing 777X jets,” Ahmed continued. “They’ll need another 150-200 for growth and at least the same again to replace the A380 fleet, since that jet will be aged and very inefficient by the time the 777X arrives in 2020. The A380s days at Emirates are already numbered.”

Going back to funding the airport expansion, it is probably wise to note that the annual 15-16% traffic growth at the current DXB airport also shows increased aircraft movements. That translates into more income and revenue as more flights come in and use the airport. “It is this self-sustaining model that is a primary driver as a tool to fund expansion,” said Ahmed. “It’s like a money-making machine that operates autonomously. Or, if you recall some of the early Terminator films, cyborg robots were effectively building other robots. In the same way, DXB is building DWC.”



A radically new approach to passenger flow processes. Photo - Dubai Airports



Efficient: New hangar technologies should improve work flow processes. (Photo HIA)

Getting the hang of sophistication...

In line with other airport infrastructure, aircraft hangars have to adapt to new technologies and changing workflow processes.

Keith Mwanalushi met an expert from Lufthansa Consulting to discuss the main considerations for developing hangars, particularly in the MENA region.

Considering the value of commercial aircraft, it's always important to have reliable aircraft storage, maintenance and servicing facilities.

Back in the day, hangars used to be fairly basic – concrete buildings with minimal facilities. But, with the increasing technical development of aircraft these days, there is a greater need for sophisticated equipment to service them.

Recently constructed hangars at airports in Doha and Dubai are testament to how far design has come. So much so that their sophistication is now on par with other key pieces of airport infrastructure.

The Emirates A380-capable maintenance hangar, for instance, involved advanced engineering work that included intense structural calculation, shop drawings, procurement of special materials and fabrication.

Built in the shape of perfect squares, each hangar measured 110sqm. The total weight of the structural steel utilised amounted to 14,000 tonnes. The project, which took two years to complete, was finished on schedule back in November of 2005.

Any contract to provide hangar facilities, especially to accommodate A380s, is clearly

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an enormous task. Panagiotis Poligenis, associate partner and solution group leader operations at Lufthansa Consulting stipulates that in general, and when planning and developing hangar projects, key issues such as the long-term purpose of the utility and intended future capabilities of the hangar operator need to be taken into consideration.

“The facilities must holistically consider the maintenance requirements of the current fleet as well as the aircraft fleet to be served in the future. The hangar operator and the airport need to be clear on the land property allocation,” Poligenis advised.

Very often, aircraft hangars are being planned and constructed in phases with future expansion considered from day one in the airport master plan. “Additional hangar space can be added by constructing an extension to the existing building as the space requirements grow with the increased client bases or an airline’s own aircraft fleet. If an expansion is not considered in the master plan and different locations need to be considered for the next phases, it is difficult to achieve an optimised workflow,” Poligenis said.

Vital role

Poligenis further emphasised that operational and maintenance costs of the building always play a vital role in the planning process. “While, in other world regions like Europe, heating of the building might be a challenge for the planner, the cooling of huge hangar facilities can be challenging for hangar planners in the MENA region,” he said. “Creating a comfortable working environment not only supports safety and human factor initiatives but it increases work efficiency.”

The cooling effect for MENA operations is vital. That said, UK-based company Jewers Doors has developed the ‘Esavian’ range of hangar doors over several years. These are equipped with sophisticated control systems to reduce temperature changes when doors are opened and a multitude of safety features.

The most recent of a number of Esavian door installations for A380 aircraft hangars is the massive Qatar Airways maintenance hangar at Hamad International, Doha.

Qatar Airways’ Doha hangar is fitted with Jewers’ Type 126 Esavian doors, with one opening 178.74 metres wide and another 218.74 metres – both 27.55 metres high. They were part of the largest-ever hangar doors contract in the history of Jewers Doors.

“In order to conserve energy, insulation and heat loss (or gain) are critical factors in all climates. Esavian hangar doors are, as with all our doors, fully insulated and weather sealed,” said Jonathan Jewers, Esavian director at Jewers Doors.

“They are linked to the environment management system of the hangar and controlled in such a way as to minimise open periods. Our hangar doors conform to the tough leadership in



Planning: Panagiotis Poligenis says facilities must have holistic considerations.

energy and environmental design (LEED) internationally recognised green building certification system and are the ‘greenest’ doors available.”

Jewers said his company now has considerable experience in providing large hangar doors for projects around the world and has supplied more doors for the new generation of A380 and super jumbo hangars than any other company.

“We provide a turnkey design, manufacture and installation service and have considerable experience of the processes involved. We source the materials as required and manufacture key components in the UK and further afield. In terms of construction of the doors on site and their installation, our highly skilled engineers and reliable local contractors carry out this work,” said Jewers.

Jewers Doors also developed tail-slot doors to

upgrade current hangars in order to house the large A380s, for instance at London Heathrow Airport. “Tail slot doors are ideal for accommodating aircraft, particularly large aircraft, in hangars that were not originally designed for them or were purposely built to restricted dimensions. In the Middle East new large hangars are usually built specifically for this new generation of huge aircraft,” Jewers stated.

Looking at the Middle East, Jewers said each project brought different challenges. “In terms of the Middle East our ‘signature’ project is probably the Royal Air Wing hangar in Dubai. We supplied curved doors, which move on a radius of 1.3km. To our knowledge this had not been achieved before nor repeated since,” he said.

Jewers has also supplied the Esavian Type 126 doors for the DC Aviation and Al-Futtaim joint venture executive jet hangar at Al Maktoum International Airport.

Tailgate opening

The hangar, which can accommodate aircraft up to Boeing 757 size, has doors 62.0 metres wide and 13.5 metres high, with a tailgate opening that increases the height to 16.0 metres. They are predominantly clad with highly translucent and well-insulated polycarbonate panels and are fully power operated. “We designed, manufactured and installed the doors within an extremely tight construction programme – matching the exceptional speed that the hangar was erected. The 8,000sqm facility is the first executive jet hangar and fixed-base operation at Dubai World Central,” Jewers added.

The impact and importance of new technology in hangar development, and how this improves the workflow process, is a key issue. Recently, lean six sigma emerged as an upcoming methodology for service enterprises concerning

Energetic: Qatar Airways' A380 hangar doors are LEED recognised.



cost reduction, improvement of profitability and enterprise growth.

Lean six sigma is a set of powerful tools and techniques that will help any organisation to improve its efficiency and productivity.

"In our view, it is imperative to take lean principles into account when planning the hangar and, in particular, the allocation of the utility buildings; for instance workshops, stores and painting areas," Poligenis pointed out.

He added that workflow and walking distances should be simulated during the conceptual planning to ensure that technicians and engineers reduced waiting times at distribution centres and transfer times from the aircraft to the offices and workshops.

"The consideration of radio-frequency identification (RFID) devices for tooling and equipment tracking, mobile workstations and touch pads should play a key role in designing working processes and, as a consequence, the alignment of facilities," Poligenis continued.

The sophisticated approach to hangar design taken by airport operators and their financially versatile home carriers, such as Emirates and Qatar Airways, may not be for everyone. Smaller airports, for instance, may be more focused on cost more than aesthetics. This leaves the questions as to whether smaller MENA airports and airlines can also benefit from sophistication without paying the cost.

Poligenis believes the focus should always be on construction and operational cost first, rather than on aesthetics, and that the principle of "form follows function" is very fitting here. "Good value-for-money solutions do exist for small airports and operators with limited construction budgets, when considering 'pre-fabricated' hangar solutions," he said.

"Certain companies have specialised in supplying solutions for hangars with relatively

small budgets and, at the same time, deliver on aesthetics.

"However, the level of individual planning flexibility is somewhat limited considering that the solutions offered are based on standardised products. In the past we have already cooperated with providers offering smaller solutions like a low budget pre-fabricated hangar," Poligenis said.

Of course, Lufthansa, too, makes use of its own hangar facilities, designed with the incredibly huge dimensions of the A380.

Two new hangars were constructed in Beijing and Frankfurt. With a size of 180 x 140 metres and a height of 45 metres, the Frankfurt facility it is one of the largest industrial buildings in Europe.

Overhead clearance

The hangar provides enough overhead clearance (27.5 metres) to lift the aircraft to any height required for maintenance, even for the huge tailfin of the A380, which is more than 24 metres tall.

Covering more than 25,000sqm, the hangar can easily accommodate two A380s, three Boeing 747s or a combination of both types at the same time.

"From the beginning, one of Lufthansa Consulting's core competencies has been airport planning and facility planning and development," Poligenis stressed. "With the growing demands on airport infrastructure, we strive to expand our expertise in airport infrastructure planning, including conceptual planning for aircraft maintenance hangars.

"As a member of the Lufthansa Group, we are proud to deliver expertise to our clients on a daily basis and, as such, we are very familiar with the demands of aircraft operators and MROs."



Trial work at Riyadh helped Libanet secure the ground handling contract.

Libanet lands three-year Saudi deal

Lebanese aircraft services company, Libanet, has signed a three-year deal with Saudia Ground Services Company (SGS), the Jeddah-based ground handler that supplies services to all of Saudi Arabian airports.

The Beirut-based company will provide a wide scope of services to all carriers at the kingdom's four largest airports – Riyadh, Jeddah, Dammam and Medina.

"This agreement is in line with Libanet's vision and 2011 strategic decision to expand in the Saudi market," said Tony Saade, the company's CEO and founder.

Libanet said the agreement comes at a time when Saudi Arabia is seeing flights increase in line with the General Authorities of Civil Aviation (GACA) long-term strategy to build and renovate its domestic and international hubs to accommodate a projected three-years traffic flow of 57 million passengers.

"Services outsourcing in the aviation industry is a growing trend given the restricted labour laws, whether for airports facilities, management activities or aircraft-related services, which all represent the core activity of the company," Saade said.

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Libanet has committed to perform services to more than 320,000 aircraft for all carriers. During July 2014, it conducted trial night tests at Jeddah King Abdul-Aziz Airport for transiting flights of Saudi Airlines, as well as Turkish Airlines, Pakistan International Airways and Sudan Airways.

The contract takes effect in January 2015, when operations are launched in Riyadh- King Khaled Airport (KKIA), covering 55 commercial carriers, or the equivalent of 100,000 flights a year at KKIA.

Libanet will be virtually doubling its workforce to take up the contract. It currently employs around 1,300 people and would need 1,200 more.

The aircraft services include cabins management – interior cabin cleaning, exterior aircraft washing – in addition to a new service the company is developing: lavatory service and potable water services to shorten grounding time flights.

Libanet services more than 40 airline companies and four international airports in the MENA region already. In 2013, it won a contract to provide airline services to Nasair in both Jeddah and Riyadh stations and in 2012, it was re-selected as the preferred bidder for the facilities management in the new Queen Alia International Airport in Amman, after servicing the old terminal for three years.

TAV moves to firm up presence in Istanbul

As Turkey mounts its challenge to become the major hub between east and west, the country's independent airport operator has invested in Istanbul's secondary airport.

Alan Peaford reports.

Sani Sener: "I am convinced we will be able to accommodate a higher number of flights in Istanbul airport system by leveraging this network."

As one of the leading airport operators in the world, TAV has been demonstrating its capabilities across the region.

Tbilisi and Batumi airports in Georgia, Monastir and Enfidha-Hammamet airports in Tunisia, Skopje and Ohrid airports in Macedonia, Madinah Airport in Saudi Arabia and Zagreb Airport in Croatia are all operated by the Turkish company.

On its home turf Ankara Esenboga, Izmir Adnan Menderes, Milas Bodrum and Alanya Gazipasa airports are all under TAV's control – but the national flagship Atatürk in Istanbul is under threat from a new airport that could even dwarf Dubai World Central. And the Turkish Government's plans did not include TAV.

TAV has been watching its domestic investment carefully and has now made a move to establish a firm supporting foothold for its Istanbul activities.

The company signed a share purchase agreement with the Limak Group for a 40% shareholding of Istanbul Sabiha Gökçen Airport – the secondary airport to the south of Istanbul that is growing thanks to support from low-cost carriers.

The remaining 60% remains with Malaysia Airports Holding, with the two partners having equal management rights.

TAV Airports CEO and president Sani Sener said: "Becoming a partner at Sabiha Gökçen Airport is a bold strategic move for TAV, as Atatürk Airport is planned to be closed when the new airport will be put into service in Istanbul. It is the responsibility of TAV senior management to anticipate the termination of our Atatürk Airport operation by finding the opportunity to extend our footprint in Istanbul and to benefit fully from Istanbul's traffic growth potential until at least 2030."

TAV has adopted a collaborative approach to its investments. Sener used the experience in Saudi Arabia as a good business model. "Especially, we have created a very strong synergy between Istanbul and Madinah," he said. "All these airport operations benefit from the scale and scope of the operations, services and know-how of our main hub in Istanbul. It is the reason why having a presence at Sabiha Gökçen, which will become the second airport of Istanbul when the new airport opens, had become a must.

"One of the major principles in business life is to take advantage of the context to put your company in a position to reach its long-term targets. There were rational reasons for both parties [TAV and Limak] to meet on a common ground and reach an agreement: Limak has become a member of the consortium that won the new airport tender and aspires to focus on that project and TAV was willing to extend its foothold in Istanbul beyond 2021.

"If Malaysia Airports doesn't use its right of first refusal, we would begin making contributions to the operations at Sabiha Gökçen, after receiving the required approvals."

Sener said that having a presence in both Istanbul Atatürk and Sabiha Gökçen Airports in the next five years would help raise productivity and enhance services.

Huge portfolio

"There is a huge portfolio of airlines, including some which could not get slots from Atatürk Airport and do not prefer to use Sabiha Gökçen. We are providing services to the majority of those airlines in our other airports as TAV and our ground handling services company, Hava, also has good relationships with those parties. I am convinced we will be able to accommodate a higher number of flights in Istanbul airport system by leveraging this network.

"We can also offer a comfort zone at those airports for Turkish Airlines and other Turkish airline companies which achieved a massive growth in recent years. I believe there would be good collaborations."

Sener said he could see other opportunities with the Malaysian operator. "We are convinced there could be further collaborations beyond Sabiha Gökçen with Malaysia Airports on other projects," he said. "I think that the intellectual asset and the social capital of these collaborations would be the most precious outcome. Our strategy is built on working for our country's interests and the satisfaction of our employees, customers and investors."

Sabiha Gökçen Airport was put into service in 2001. After the tender held in 2007, a consortium of three companies undertook the operations of the airport: Limak, Malaysia Airports and GMR on a 20-year contract. Earlier this year GMR sold its shares to Malaysia Airports and left the consortium.

Istanbul Sabiha Gökçen Airport served 15.5 million passengers – a 32% increase – over the first eight months of this year. The capacity of the airport is planned to be increased with the construction of a new runway and additional apron standings. Work is also under way to connect the airport to the metro system.





Regional integration to solve congestion issues in the UAE. Photo - ADAC

DISPARATE DANS...

Following an announcement by the Dubai Air Navigation Services (DANS) to invest and upgrade the world's largest 360-degree tower simulator, Keith Mwanalushi finds out what plans are in place to tackle the congestion issues in the UAE.

Dubai Air Navigation Services (DANS) was born out of a separation from Dubai Airports in January 2014, becoming an independent organisation.

It offers air navigation services at Dubai International Airport, Al Maktoum International at DWC and the Northern Emirates.

"The core service is air traffic management (ATM), which is divided into air traffic services; aeronautical information management; and communication, navigation and surveillance (CNS)," explained DANS senior VP Ibrahim Ahli.

In September this year, DANS reported that it would invest \$2.5 million to upgrade a 360° tower simulator that has been developed at a cost of \$5.5 million.

The tower is owned by DANS and can simulate just about any airport in the world, which can help the authorities select the best features from other airports to be trialled and enhanced in the simulator before deployment into the Dubai airspace.

Congested GCC airspace

It's with airspace in mind, that Ahli stressed his thoughts on the already congested GCC airspace and how to resolve air traffic congestion problems in the future. "DANS is working in close cooperation with adjacent air navigation service providers (ANSPs) in the region to ensure that the Dubai airspace is optimised, and is working towards rebuilding the airspace based on the forecast needs of each individual airport in the UAE."

Ahli agreed that the issue of UAE airspace being congested had been a recurring challenge for experts within the air traffic management field since the inception of the Dubai Airport. Other experts have voiced the opinion that the need for regional integration to solve congestion issues is crucial.

Back in 2011, the concern over the lack of regional collaboration sparked comments from the Civil Air Navigation Services Organisation (CANSO), which represents global ATC providers. CANSO said a regional approach would eliminate planning in isolation that had typified the region. Since then, various regional

workgroups have been tasked to determine the state of the region regarding issues such as infrastructure commonality, air traffic management performance and CNS capabilities, as well as performing an airspace structure review.

Experts say the technology to solve congestion problems is, in itself, not a challenge. The problem is the planning required to converge individual state programmes into a regional programme to meet standards over a period of years.

This existing challenge has driven DANS to continuously enhance and develop on an organisational and technical level three key pillars that enable it to develop innovative solutions.

Labour force

Firstly, it is developing the labour force through continuous capitalisation on human resources and providing highly developed training facilities.

It is also developing equipment and procedures, through continuous research, development and implementation of new cutting-edge technologies.

The third plank of the programme is the continuous enhancement of the organisation's standards.

Nils Svan, VP for strategy, said that DANS is currently the leader and driver in numerous projects that would provide the possibility of meeting the future growth demands in Dubai.

Svan added that DANS was leading the UAE airspace restructuring group, which is a national initiative bringing together all of the key stakeholders in the aviation industry, such as the General Civil Aviation Authority, Dubai Airports, Abu Dhabi Airports and GAL. "This project is developing a conceptual design of the UAE airspace by the end of 2014, which will be implemented into the real design in 2015," Svan said.

DANS is also working on capacity enhancement at Dubai Airports and with other projects, including the "airspace upgrade for better optimisation of UAE airspace" scheduled for completion in the second quarter of 2015, and an air traffic controller radar training platform enhancing project.



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The 2014 Airline Passenger Experience (APEX) Expo, held in Anaheim, California in September, showed how tablets are revolutionising the in-flight entertainment and connectivity (IFEC) industry. Steve Nichols was there.



Lufthansa Systems' Norbert Muller and his tablet-based IFEC system. Inset: The convention centre in Anaheim.

CALIFORNIA DREAMING

A number of companies were showcasing the latest developments to let tablets, laptops and smartphones connect to IFEC systems. The advantages are a big weight reduction on the aircraft, cost benefits, plus making sure it is the passenger who invests in the latest technology, not the airline.

Lufthansa Systems had a twist to tablet use with its BoardConnect Wi-Fi IFEC system. It showed that airlines could replace their built-in IFE systems with commercial off the shelf (COTS) tablets, mounted in the seat back. The tablet fits into a simple dedicated support frame in the seat back with just two screws.

Lufthansa Systems' Norbert Muller said the benefit was obvious. "There are huge cost savings to be made by using COTS tablets – they are shipped in millions. If you specify an embedded IFE screen, the chances are that it is out of date before it is delivered. Then you have to have it installed on the aircraft for

seven or more years before it is replaced.

"By using a commercial tablet you get the best of both worlds – the latest technology and the ability to replace it cost-effectively whenever you want."

The system is currently at prototype stage and Lufthansa Systems is talking to seat manufacturers and airlines to gauge interest.

UK-based Bluebox showed another variation on the tablet theme. It provides Apple iPads that can securely handle valuable early-window movie content. Film studios are usually reticent about allowing new movies to be screened on portable devices but Bluebox has managed to make the content so secure that six major studios have granted it permission to screen their latest blockbusters.

Bluebox's Kevin Clark said that it is currently shipping around 5,000 units a year.

BAE Systems was busy promoting its IntelliCabin cabin management

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solution for passenger aircraft.

IntelliCabin's innovations include USB and 110V power points for all seats, which can be individually powered up or down, either via a central control or an app on a smart device.

It also features fully controllable LED mood lighting, dimmable windows, and enhanced seat control.

New for the Expo was IntelliCabin's IFEC interface for tablet computers. This allows passengers to have picture-in-picture control, so that they can watch a movie while reviewing other material, such as a duty free catalogue or menu options.

It has been working with Samsung to develop the tablet theme further than many of its competitors. Moving-map displays and movies can be installed on the device, rather than being streamed. But if an airline-supplied tablet is taken off the aircraft it automatically locks the device so that the movie content can't be retrieved.

BAE Systems was confident that it would soon be announcing a launch customer for IntelliCabin.

Panasonic Avionics had good news for airlines using single-aisle aircraft in the MENA region. It unveiled a new low-weight phased-array Ku-band satellite antenna that promises high performance and good reliability.

Save fuel

The antenna is just 2.7 inches/68mm tall with a very low drag coefficient, which means it can help airlines save fuel without compromising antenna performance. It will be available to the commercial aircraft market in 2016.

Panasonic also said it was progressing well with its roll-out of IFEC equipment to Middle Eastern fleets, including Airbus A330s for Qatar. It is working, too, on upgrades/installations for Emirates, Etihad and Gulf Air.

The technology giant also announced it is introducing near-field communication (NFC) technology to its IFEC systems in the summer of 2015. This will enable payments to be made and information to be exchanged just by the passenger's device being near to the IFEC system.

Passengers and crew will be able to use NFC-enabled smart phones and cards in flight to enable transactions and purchases, or to recognise a passenger's frequent flyer status. NFC will also allow the crew to check in and out for duty automatically, or push information to passengers' devices during their flight.

The new Apple iPhone 6 has NFC built in and it is estimated that, by 2016, 55% of smart phones will be NFC-enabled.

Thales said it is now better positioned than ever to attack the IFEC market with its recent acquisition of Florida-based LiveTV. This gives it access to expertise in the ultra-fast Ka-band market. It also announced that it is now a value-added reseller (VAR) for Inmarsat's upcoming GX Aviation global Ka-band service.

Thales is actively chasing Qatar for a contract to supply the 50Mbps connectivity service aboard the airline's new Airbus A350 fleet and the VAR



Panasonic's Dave Bruner unveils its new ultra-low profile satcom antenna.

appointment will no doubt help.

Inmarsat said it is confident that it will meet its target date of mid 2015 for the global launch of the GX Aviation service.

Leo Mondale, Inmarsat's president aviation, said that the company's first I-5 GX satellite is in orbit and working well, and the next two will be launched in due course.

Mondale allayed concerns over the Russian Proton launch vehicle, which will be used to loft the next two satellites. A Proton failed shortly after lift-off in May this year but Mondale said he is confident that any problems have been ironed out. "We can expect to see the second I-5 satellite moved to the Baikonur launch site in a few months, probably in the New Year," he said.

Launch customer

US-based Gogo surprised everyone by announcing that it had received a bid award letter from Vietnam Airlines to provide the GX Aviation in-flight connectivity service on Vietnam Airlines' fleet of Boeing 787 aircraft and a majority of the airline's Airbus A350 aircraft. This would make it the launch customer for Inmarsat's GX Ka-band service.

Gogo also announced that it is to partner with Virgin Atlantic to offer in-flight connectivity services on Virgin Atlantic's existing fleet. This will be the first European airline to partner with Gogo and will use the company's new 2Ku satellite system, which promises to deliver high bandwidth.

Airbus announced that it has recognised the demand for more capacity on its A320 series. It

was promoting additional seating configurations on the aircraft, or what it calls "increase cabin efficiency (ICE) options". Wider next-generation, low-profile seats mean more leg room, despite a smaller pitch. The aircraft manufacturer also showcased its fourth-generation IFEC solution for the A350 XWB. This features a new network layout that is more robust than earlier types, and cuts the number of cables used to one.

The MENA region did well in the 2014 Passenger Choice Awards, presented during the Expo.

Emirates won 'best airline' in the Middle East region, while Gulf Air scooped 'best in-flight publication'. Turkish Airlines took the accolade for 'best food and beverage' and Ethiopian Airlines ran away with the 'best airline' in the Africa region.

Visitors to the Expo were also able to be wooed by technological developments of the future, including IFE gesture control, virtual reality and passenger personalisation, whereby your food, drink and movie preferences can be stored on a tiny lightweight device.

Just walking on to the aircraft is enough for the system to recognise you, order your favourite drink and food, plus call up your preferred IFEC movie genre.

All in all, the expo showed that we can expect aircraft to get smarter and better connected with the ground in the future, with airlines knowing more about their passengers than ever before. The 2015 Apex Expo is moving to Portland, Oregon (from September 28 until October 1) next year.

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THE TURKEY

Istanbul, the city that joins Europe and Asia, was the host of this year's 10th regional air show.

Marcelle Nethersole was there to speak to some of the many exhibitors.

Pictures by Mike Drummond





BUL MARKET

In the last five-years, Turkey has become one of the biggest global players in the aviation industry. Its infrastructure is expanding with 20 more airports being planned; there is growth in its fleet, a surge in MRO companies, not to mention the significant achievements in its defence industries.

In the first half of 2014, the country received 92.7 million passengers, many of which came through one of the country's many tourist cities including, of course, Istanbul Ataturk Airport, which is now the fifth busiest airport in Europe.

Last year Ataturk handled 53 million passengers and the city is now eagerly anticipating the completion of a third Istanbul airport that expects to deal with 250 million passengers and have six runways.

One of the air show sponsors, TAV Airports, is behind a lot of global airport expansions. Its CEO and president, Sani Sener, said: "We started our journey with Ataturk Airport and now we look forward to going ahead with 14 airports in seven countries on three continents."

Within the next five years flag-carrier Turkish Airlines, another of the air show's main sponsors, will add 252 aircraft,

worth \$33.5 billion, to its fleet, while the country's domestic airline, Pegasus, will buy 100 aircraft for \$12 billion, and SunExpress will get 50 aircraft for \$4.7 billion.

"Turkey is among the most active international civil aviation and airports markets," said Musfik Isik, CEO, of show organiser Mint Exhibitions.

Supply chain

"Also, the aviation industry supply chain is given more weight in parallel to Turkey's macro-plans of manufacturing its own aircraft by 2023.

"Istanbul is also becoming an important business aviation hub in the region, and with new investments made by Turkish Technic and others, the city has also become an important MRO base, which is why it makes perfect sense for the air show to be held here."

More than 50 aircraft were displayed on the static from manufacturers including Bombardier, Cessna, Gulfstream, Cirrus, and Dassault, and over 150 exhibitors announced new products and news – from the big players down to the SMEs.

Static movers:
Clockwise from top left:
The Agusta Westland AW109 Grand New; Piper PA-42; Turkey's fighter trainer Hurkus;
The open nose of Azerbaijan cargo carrier Silkway's Boeing 747 freighter; Turkish Airways dominate the airport's departures; Cessna's C172 Skyhawk now with turbo power.



Fabio Sciacca:
"It makes sense to be close to the OEM."



AMAC Turkey is working towards approval to serve customers with Pilatus PC-12 turboprops.

FlightSafety tempts students with its global reach

FlightSafety was at the Istanbul Airshow for the first time hoping to attract potential Turkish aviation students to attend one of its many training centres. The US company provides more than a million hours of training each year to pilots, maintenance technicians and flight attendants, as well as other aviation professionals from 167 countries.

It operates the world's largest fleet of advanced full-flight simulators at learning centres and training locations around the world, including the USA – where its hub is at LaGuardia in New York – Canada, Japan, China, South Africa and Australia.

In Europe, its main centres are at Le Bourget, France and Farnborough in the UK.

"We have 42 learning centres and offer more than 3,500 individual courses for 135 different fixed and rotor-wing aircraft, taught by more than 1,800 qualified instructors," said Fabio Sciacca, director EMEA sales. "We also operate more than 300 advanced technology simulators – the world's largest fleet."

"For Turkish students, it is likely they would attend either the Farnborough or Le Bourget centres, as they are closer to Turkey. Although, it depends, too, on the desired training. For instance, pilots and mechanics might want to train at our learning centre in Savannah in the US, as we have a strong partnership with Gulfstream, so it makes sense to be close to the OEM. We also have strong relations with Hawker Beechcraft, Sikorsky, Cessna, Bell and Gulf Stream."

Trixy keeps an eye on the surveillance market

Trixy Aviation is an Austrian based company known for its design and development of gyrocopters. While one designed for the general market was being displayed at the show, it was another one that was attracting visitors to the company stand, the TrixyEye.

"The TrixyEye has been developed for professional applications in surveillance as it is fitted with a high-tech camera," explained Rainer Farrag, president and designer. "Several models of the successful series G 4-2 were developed incorporating many innovative details to serve as a base for the TrixyEye. Many served as trainers in flight schools, and others accomplished professional missions in media

broadcasting and aerial photography as well as for defence purposes, border control, traffic observation, coast guarding, search and rescue and police air support – plus many other fields."

The TrixyEye is equipped with the DynaX5 camera, which has been developed by Dynamic Perspective.

"The DynaX5 system is developed for the media industry to provide top quality aerial motion pictures," explained Dr Peter Morawitz, managing director. "Its five axis stabilised base supports a variety of professional cameras with up to 40x optical zoom. We then have the DynaPro, which is a multi-sensor system developed for professional security

Glowing approval ratings for AMAC Turkey

AMAC Turkey was showcasing its broadened MRO capabilities at the show. The provider of corporate aviation maintenance and completion services has announced a range of new maintenance approvals.

The two-year-old company, part of AMAC Aerospace, recently achieved approval from the Directorate General of Civil Aviation Turkey (DGCA) to perform base and line maintenance up to C Check on Dassault Falcon 900Ex Easy, 2000 and 2000Ex EASy models.

AMAC was also hoping to add European Aviation Safety Agency (EASA) approval for all these Dassault models as an extension of its current EASA part-145 certificate coverage.

AMAC Turkey also expects to achieve EASA and DGCA approval for line maintenance up to A Check for the Dassault Falcon 7x in 2015 Q1.

It is currently working with the US FAA to obtain FAR 145 approval in order to serve customers with US 'N'-registered Dassault Falcon and Pilatus PC-12 turboprop aircraft,

which require maintenance when coming in and out of Turkey.

Waleed Muhiddin, vice president strategic operations and business development, said: "We are keen to emphasise to owners and operators in the region that we offer high quality, 24/7 maintenance support at highly competitive costs and are conveniently located between Europe and the Middle East, thus avoiding the need to travel further afield."

AMAC Turkey, located at Ataturk Airport, has had a successful 12 months, with highlights including approval as a Dassault Falcon authorised service centre in April, plus maintenance approvals for the Falcon 900B and Falcon 900EX EASy from the DGCA in October 2013 and from EASA in January 2014.

AMAC Turkey has, to date, completed maintenance on seven different registered aircraft models, including the Falcon 900/900EX EASy and PC-12NGs. It has expanded the workforce to 26 employees, up from seven in 2012.

applications. It includes a daylight sensor, a night vision sensor and GPS tracking."

Both companies were at the show representing TrixyEye in the hope it will attract the professional Turkish market.

"TrixyEye is the only certified gyrocopter of its type in the world. It only received certification a year ago but since then we have delivered 120 around the world, including in Egypt, South Africa, and Tanzania," said Farrag. "Turkey is a new market for us and the Turkish Armed Forces have already showed an interest. After the show, we will do a flight demonstration of the TrixyEye to them in Ankara."



Umut Carboga: "Aircraft manufacturers want to use durable fabrics as well as provide comfort for passengers."

Turkish Technic boosts Ketts bid to fabricate a new niche

Turkey's largest manufacturing upholstery fabric company, Ketts, was using the show as a platform to propel itself in to the aviation industry.

"Our company production turnover is 100 million Euros and, while our first customer is the furniture industry, we also work on cars and boats, so it makes sense to add aircraft to our portfolio," said Umut Carboga, sales manager.

"We have only recently started developing fabrics for the aviation industry and we are proud to have Turkish Technic, who purchase fabrics for Turkish Airlines, as our launch customer in this arena."

The Istanbul-based company specialises in manufacturing woollen fabric, which Carboga said is the healthiest fabric for aircraft.

"Aircraft manufacturers want to use durable fabrics as well as provide comfort for passengers. We use wool with 5% nylon because wool is not only the most comfortable for passengers but it is also the healthiest fabric to use, as it doesn't retain germs very easily and it is very easy to clean," said Carboga.

The company is open to working on all kinds of aircraft, from airlines to business jets, and providing bespoke designs.

"We have our own in-house designers and are happy to work closely with customers on what exactly they want with as quick a turnaround as possible," said Carboga. "We also want to expand with customers all over the world, not just within Turkey. We already export to all continents in the world, so aviation is just the next step."



Akinori Kojima: "Demand for 70 to 90-seat class aircraft for the next 20 years will be more than 5,000 units."

Upsizing to play key role in sales of Mitsubishi regional jet

The Mitsubishi Regional Jet (MRJ) is the 'new kid on the block' in the industry but the Mitsubishi Aircraft Corporation already has 400 orders for its MRJ90 aircraft.

Its president, Akinori Kojima, said that according to company forecasts, it can see a demand for next generation regional jets with larger seat capacity.

"We are introducing the MRJ90 with 90 seats, the MRJ70 will follow with around 75/76 seats, and after that we will look at launching the MRJ100X," said Kojima.

"Passenger traffic is expected to be about three times higher in 20 years. Demand for 70 to 90-seat class aircraft for the next 20 years will be more than 5,000 units, due to the market trend of 'upsizing' from 50-seat RJs and route transfers from mainline jets to large RJs in consequence of high fuel price and low passenger yield. So, jets with say, 50 seats, will start to phase out a little and there will be more demand for larger aircraft."

Final assembly work on the MRJ90 was completed last year and the company is in the process of making seven test aircraft – five will be flying and the remaining two will be for ground-test purposes.

Mitsubishi Aircraft Corporation is the first company to build a commercial jet in Japan, where it has two offices. It also has offices in Dallas, USA, and Amsterdam, Holland.

Its roll-out ceremony for MRJ90 was scheduled to be in Japan as *Arabian Aerospace* was going to press and the first flight test should be Q2 2015.

"We have already received 400 orders. Our launch customer, All Nippon Airways, has ordered 15 MRJ90s with an another 10 optional. First delivery will be in 2017," said Kojima.

"Other customers are in the States, including Eastern Airlines, which has recently signed an agreement for the purchase of 20 firm MRJ90 aircraft with purchase rights to an additional 20 MRJ90 aircraft."

□□□□□

Kojima said MRJ90 would offer 'top-class' economy and cabin comfort, feature a game-changing engine from Pratt & Whitney, and state-of-the-art aero design and noise analysis technology. The avionics are by Rockwell Collins.

It will have a four-abreast seat configuration, with large overhead bins, and will also feature a slim seat.

It was the second time for MRJ at the Turkish air show and Kojima said the country has huge potential: He said: "Already we have been in talks with THY and Turkish airlines generally. There aren't many regional aircraft in this market but it has potential; it really is a country to keep your eye on."

Orhan Geni, Honeywell's president for Turkey and Central Asia, discusses the growth of Turkish aerospace and his goals for Honeywell Turkey.

Geni of the Turkish lamp lights the way ahead for Honeywell

Istanbul Ataturk Airport is now the fifth busiest airport in Europe. Five years ago it handled around 30 million passengers; last year it handled 53 million – of which, 35 million were international.

Turkey is also bringing major construction projects to life as its economy continues to grow, including that of a new third Istanbul airport, lying north-west of the city.

The groundwork has already begun on the airport and, once built, it expects to deal with 250 million passengers and have six runways.

It's reasons like these that Honeywell decided to make itself present in the country in a big way.

Honeywell Turkey was established in 1992 and now has more than 150 employees. All four of Honeywell's businesses – aerospace, automation and control solutions, transportation systems, and performance materials and technologies – are active in the country. Honeywell's business in Turkey has grown more than 50% since 2009, and all the company's businesses showed strong performance in 2012.

The company recently appointed Orhan Geni as its first president for Turkey and Central Asia. The Turkish native said his goal is to lead Honeywell to achieve an annual average growth rate of approximately double gross domestic product (GDP) over the next five years.

"Turkey is seeing increasing energy demand, new energy efficiency regulations, and investments in the refining sector and power generation,"



Orhan Geni:
"It makes sense that we restructured ourselves and started putting the focus into Turkey."

said Geni. "It is a high-growth country in terms of technology – it's up there with China, India, Brazil, Mexico, the Middle East and Russia.

"Istanbul is a natural hub between the traffic in the west and markets in the east, and the Turkish defence industry is being made even stronger, too, with a new mandate stating it is to become a global player.

"So, it makes sense that we restructured ourselves and started putting the focus into Turkey. However, Turkey needs to make the leap into technology and choose the right partners in order to achieve a global presence."

Honeywell's technological capabilities include the Primus Epic, the next generation of flight deck, which can be

found in most advanced aircraft, including the Falcon and Gulfstream.

The company certified the first Primus Epic platform in 2003. It introduced revolutionary cockpit design, such as large format liquid crystal displays, interactive navigation avionics (INAV) and graphical flight planning.

"It set new benchmarks for reliability and high density of functional integration on a small, lightweight hardware platform. Since then, we have flown more than 15 million hours and, before long, we will be on more than 10,000 aircraft worldwide," said Geni.

The IntuVue is Honeywell's advanced 3-D weather radar systems for air transport, business and military aircraft, which helps to minimise the financial impact of severe storm activity while providing maximum aircraft efficiency, safety and performance over traditional radar systems.

Operational efficiency

And its electric green taxi system (EGTS) was developed in partnership with Safran and significantly improves an airline's operational efficiency by reducing fuel and other taxi-related costs, as well as providing environmental benefits by slashing the carbon and other emissions created during taxi operations.

Geni is particularly keen to highlight the connectivity agreement Honeywell signed with Inmarsat in 2012 to provide its hardware for its Global Xpress (GX) aviation service.

He said: "When that comes online in the first half of 2015 it will be the first in-flight connectivity service to provide high-speed broadband and consistent broadband anywhere in the world – which is massive. Basically, you will be able to work 36,000 feet up just as if you're in your work office, all down to our hardware on the aircraft. We have signed an agreement with Bombardier for this too."

Honeywell also extended its long-term aftermarket partnership with Turkish Technic in September. Based at Istanbul's Atatürk and Sabiha Gokcen Airports, Turkish Technic will offer depot-level MRO services for all Honeywell 131-9B APUs on Boeing 737 aircraft worldwide.



Can Ozgiresun: "At the moment, we only work within Turkey."

MROTHK Teknik looking to branch out

Meeting new Turkish operators at the show was the aim for THK Teknik.

The maintenance company performs control, overhaul, modification, modernisation, and quality operation in four hangars based at its main facility in at Etimesguy Airport in Ankara. It also has a hangar in Efes Airport in Izmir, with capabilities to support aircraft, engines and components.

It works with small aircraft, offering capabilities for a wide range, including for Cessna 172 series, 206, 402 and 421, Bombardier CL215 series, PZL M18 Dromader, Piper PA42-720 and PA-44-180, and Tecnam P2006T and the P2002JF.

"We offer a true one-stop-shop support. This is to avoid the need to use multiple service providers, minimising turnaround times and costs," said mechanical engineer Can Ozgiresun.

"At the moment, we only work within Turkey as we only have the authorisation for here, so we're at the show to meet potential new Turkish operators.

"However, what we are hoping is for the Turkish Civil Aviation Authority to become a member of the European Aviation Safety Agency (EASA), then we can branch out – although, we are also looking at trying to obtain EASA authorisation directly."



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Airlines operating from the Middle East and Africa have just days left to register for the European Union's 'third-country operators' regulation. Mario Pierobon looks at what is required.

Deadline looms on new EU regulation

With the publication of EU regulation 452/2014 on third-country (non-EU) operators, the European Union has formalised the centralisation of the process to authorise carriers performing commercial air transport operations into the EU. The regulation became applicable on May 26 this year.

“The release of such authorisations is not a European invention,” reported Sascha Schott, section manager for third-country operators at the European Aviation Safety Agency (EASA).

“The framework of reference of the new regulation is derived from ICAO annex 6 part 1, which requires a surveillance programme on foreign carriers. The US direct equivalent of the new regulation is part-129 and several other countries, such as Canada, China, Australia and Singapore, all have surveillance programmes in place,” continued Schott.

African and Arabian carriers operating into Europe may already be familiar with the established programme of safety assessment of foreign aircraft (SAFA) inspections. SAFA is implemented through a series of random ramp inspections, whereby non-EU registered aircraft performing operations into Europe are inspected with regard to airworthiness and flight operating standards.

“Within SAFA, the scope is limited for the assessment of selected airworthiness and operational criteria, whereas the implementation of standards at organisational levels, such as safety management system (SMS) or flight data monitoring (FDM) implementation, can hardly be verified during a ramp inspection,” said Schott.

Hence, the need arose for a more

Any foreign operator intending to perform commercial air transport (CAT) operations to, from or within all EASA member states (EU member states plus Iceland, Liechtenstein, Norway and Switzerland) and other territories in which European aviation rules apply (the EU overseas countries and territories and outermost regions) needs to submit formal applications for TCO authorisation to EASA.

comprehensive regulatory framework. Regulation (EC) N 452/2014 consists of two main parts: Part-TCO, applicable to foreign operators, and Part-ART, which is applicable to EASA and the European member states, for the issue of safety authorisations to foreign carriers.

Part-TCO replaces the various safety assessment schemes of the EASA member states that are currently in place. “EASA has been preparing itself over the last years by visiting and has had exchanges with the several member states issuing authorisations to foreign carriers,” said Schott.

With the new regulation, a single safety authorisation will be issued centrally by EASA. Part-TCO harmonises and streamlines the authorisation process for foreign operators by introducing a single, proportionate and risk-based safety assessment performed by EASA. Part-TCO is only taking over the safety-related section of foreign operator assessment. Operating permits will continue to be issued by member states.

National responsibility

These remain an area of national responsibility. A valid TCO authorisation will be a mandatory prerequisite, in the absence of which an operating permit will not be able to be issued by a member state after the end of the TCO transition phase on November 26 2016.

When the regulation came into force on May 26 this year, a transition period of 30 months for implementation started. The first six months (ending on November 26 2014) constituted the ‘application’ period.

Any foreign operator intending to perform commercial air transport (CAT) operations to, from or within all EASA member states (EU

member states plus Iceland, Liechtenstein, Norway and Switzerland) and other territories in which European aviation rules apply (the EU overseas countries and territories and outermost regions) needs to submit formal applications for TCO authorisation to EASA.

“Applying the regulation to the EU overseas territories is of particular interest to African and Arabian operators,” said Schott. “Operations into EU overseas territories in east Africa, like Mayotte and Réunion, are subject to the new regulation. This means that, even if certain foreign operators may not fly into ‘continental’ Europe, they are still subject to an EASA TCO authorisation if they want to fly into these EU overseas territories.”

A TCO authorisation is not required for operators overflying territories where the regulation applies if they do so without intending to land. The regulation is only applicable to commercial operators; private operators – not holding an Air Operator Certificate (AOC) – are not eligible to apply for a TCO authorisation.

“Approximately 900 AOC holders from all over the world are expected to apply by the November 26 deadline. During the remaining two years, EASA will assess the applicants’ operations and technical management,” said Schott.

“It is of utmost importance that foreign carriers submit their applications to EASA by the established deadline, because those operators who fail to do so may see their operations to Europe discontinued after the end of the 30-month transition period until they are issued a TCO authorisation.”

The authorisation of third-country operator status validates in all EASA member states the AOC issued to foreign air operators by their own competent aviation authority.

The TCO authorisation document issued by EASA is accompanied by technical specifications that set out the scope of operations authorised in the EU.

African and Arabian carriers, whose aviation safety regulations are not aligned with the European regulatory framework, should not



“It is of utmost importance that foreign carriers submit their applications to EASA by the established deadline, because those operators who fail to do so may see their operations to Europe discontinued after the end of the 30-month transition period until they are issued a TCO authorisation.”

worry about establishing strict compliance with European standards. The International Civil Aviation Organisation’s (ICAO) standards applicable to operators are those against which authorisations are going to be issued.

“The focus of EASA’s assessment will be, in particular, on annex 1 (crew licensing), annex 6 (operations), annex 8 (airworthiness), annex 18 (dangerous goods) and annex 19 (safety management),” explained Schott.

“With reference to the more recently adopted annex 19, foreign operators are expected to be in one of the four SMS implementation phases as detailed by ICAO.”

Operators needing to apply for a TCO authorisation should first visit the EASA’s TCO website (www.easa.europa.eu/TCO) to familiarise themselves with the regulation and the application process. On the website there is also a comprehensive frequently asked questions (FAQ) section.

“The application process consists of two main steps. The first is a formal ‘administrative’ TCO application; in the second step the operator is given an account, which can be accessed via any internet

browser, and there it will submit information about the AOC holder and the aircraft intended to be used to the EU,” said Schott.

The web-interface serves as the sole communication platform; all relevant data to and from EASA is exchanged online. A list of authorised third-country operators will be made available on the EASA website.

Non-European aviation authorities can apply for access to data of operators under their oversight. European aviation authorities and ramp inspectors have access to data of all authorised foreign operators.

Risk assessment

“Based on the information supplied by foreign carriers, EASA will perform a risk assessment of the operators. It is important to underline that EASA is not going to perform a full-scale audit of an operator; it is rather validating a foreign AOC for use into EU territories. An operator’s risk profile influences the level of scrutiny by EASA before issuing – or non-issuing – the TCO authorisation. The higher the risk profile, the larger the sample size of requirements,

subject to more thorough verification by EASA,” explained Schott.

EASA’s assessment of an operator’s risk profile is dependent upon its level of confidence in the foreign AOC, as determined by the competence of its holder to discharge its responsibilities and the safety oversight capability of the competent authority.

“These parameters are based upon evidence derived from the results of ICAO’s universal safety oversight audit programme (USOAP) and SAFA inspections among other data sources,” said Schott. “The compliance with the IATA operational safety audit (IOSA) standard is considered by EASA as a good indicator of ICAO compliance but it is not a determining factor alone. EASA also requires confidence in the effective safety oversight of operators by their national aviation authorities.

“A more ‘neutral’ consideration is given instead to the international standard for business aircraft operations (IS-BAO). This programme is modelled against ICAO annex 6 part 2 (non-commercial operators), whereas Part-TCO is applicable to foreign carriers involved in commercial air transport operations.”

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How to negotiate the sanctions maze

The MENA region has certain challenges in insuring its aircraft, especially when operators fly to places subject to sanctions, writes
Barbara Cockburn.

The Middle East region's aerospace industry is experiencing impressive growth and should be attracting great interest among aviation insurers, thereby building up capacity and healthy competition.

But, insurance can become complicated when the subject of United Nations (UN) sanctions comes up.

Increasingly, companies are wary of breaking sanctions, which one insurance broker described as: "A bit vague when it comes to understanding where and how they apply."

Gulf carriers frequently make headlines with big orders at air shows. Last November's Dubai Airshow alone saw Etihad ordering 25 Boeing 777Xs and 30 787s. Emirates and Qatar Airways signed for 777X. Emirates also added a further 50 more A380s to its fleet.

Low-cost carrier Flydubai placed an order for up to 111 aircraft from Boeing, including 100 737 MAXs and 11 Next-Generation 737-800s – not bad for an airline only four-and-a-half years old with a current fleet of 33 Boeing 737-800 aircraft.

And then, at Farnborough, Qatar ordered up to 108 Boeing 777s, including 50 firm orders for Boeing's new General Electric GE9X-powered 777-9X, taking 50 purchase rights, as well as four additional 777F orders and four options.

Dubai World Central's new Al Maktoum International Airport at Jebel Ali will eventually be the new hub and is set for huge expansion; to include two satellite buildings able to handle 100 Airbus A380s. This will provide capacity for 130 million passengers annually, and by the time it is complete in six to eight years, 220 million passengers.

With so much going on, Aon's Airline Insurance Market Outlook 2014 report recognised the Middle East's "exceptionally ambitious plans for growth and development" and observed: "Its continued investment in wide-body aircraft means that average aircraft values in the region are forecast to rise by more than 15% during the course of 2013/14 insurance programmes. This could result in the average aircraft to be valued at US\$77 million, compared to a global average of around US\$38 million."

Typically, one factor that has an impact on insurance purchasing the world over is the operator's safety record/accident history. Karim Sfeir, executive director, Willis Aerospace, explained that Middle East airlines and private jet operators enjoy a relatively good safety record, due to a dramatic improvement in standards driven by initiatives from

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the operators themselves and by civil aviation authorities.

So, are insurance brokers salivating at the prospect of making money in this fast-growing region?

Aon Risk Solutions account executive Robert Normand, based out of the aviation global broking centre, observed that the region's growth was massive and it had "superb" infrastructure adding: "Capacity is an advantage, as is the modern equipment. From an insurance view, all are a good write because of the quality of the operation, the strong emphasis on safety that comes with a modern fleet, and their size."

However, despite all this, there is a problem. Middle East carriers, due to their proximity, are very likely to operate to countries that may be subject to international sanctions, such as Iran and Sudan.

Aon avoids doing business with airlines and private aircraft that fly into Iran. Normand said: "The sanctions issue is a global one and not specific to the Middle East, so it is not a deliberate move by Aon to withdraw from the region – we still have a considerable book of business in the region and a significant office presence. It's just that much of the region's airline fraternity did conduct business with Iran or Iranian entities. "Aviation is affected more than other [businesses] by the sanctions as Iran is a key destination for many of the airlines and private businesses in the region and vice versa. But Aon is very keen to continue to develop its presence in the region, within the parameters of the sanctions."

Sfeir said: "The insurance industry has recently seen certain players in the aviation insurance market, ranging from intermediaries to risk carriers, taking stronger positions with regards to aircraft operators flying to territories where US, EU and/or UN sanctions may apply. They have noticeably reduced their involvement with such operators. Sanctions regulations are typically a bit vague when it comes to understanding where and how they apply."

David Sales, director, aerospace at London-based brokers Cooper Gay said: "It's very difficult to place business in that region because people are very wary of the sanctions. They are so broad that it's not difficult to do something wrong and get caught up on the wrong side."

He explained that US insurers and brokers tended to interpret the sanctions more widely and enforce them more strictly than others, and there were some instances where brokers and



Robert Normand: "Capacity is an advantage, as is the modern equipment."

Ali Al Naqbi: "We give wide coverage at a cheaper rate that's the best price in the market."



Why bulk buying lightens the load

Private or business aircraft owners often face difficulties getting a decent price with insurance premiums.

Ali Al Naqbi, chairman of the Middle East Business Aviation Association (MEBAA), said: "Many people go to the market with little experience and they may get charged a high premium with low coverage."

MEBAA, in partnership with Willis Aerospace, offers comprehensive cover from which members and non members can benefit. The idea is that buying in bulk – the more the merrier – gives people more affordable coverage than if they were to seek out the insurance on their own.

The product – MEBAA aviation insurance scheme (MAIS) – covers MRO firms, pilots, ground handlers, refuellers, fuel sales agents and other stakeholders in business aviation.

Al Naqbi explained: "It's a pooling arrangement. If you are an operator of an aircraft valued at, say, \$30 million and you go to the market, you might pay \$50,000 for your insurance. But, for the same aircraft, if you're in a big pool with a \$1 billion value and your aircraft is worth \$30 million, your insurance could be \$30,000. The bigger the value of the pot, the less you pay."

He added: "When we launched the product in

2011 we had four aircraft. Today we have more than 80 in the scheme. It's very encouraging and a great product for business and private aircraft. MEBAA assures members save money. It's not only cheaper, the coverage is very important, especially when flying into a different area where insurance is not always available.

"We give wide coverage at a cheaper rate that's the best price in the market."

He explained that to join MAIS certain criteria must be met. "We look at a lot of parameters to be able to offer you the insurance. We ask about pilot training, the process of recruiting the crew, and the maintenance programme, such as where you maintain your aircraft."

Henry Adair, aviation regional practice leader, Willis, said: "Almost 40% of MEBAA members are not operators of aircraft (or responsible for hull insurance) yet they still have aviation liability exposure. So, recognising that international insurers AIG are market leaders in airside liability insurance, and benefiting from the strong local support of the Abu Dhabi National Insurance Company (ADNIC), we have built premises, hangar-keepers and products liability coverage up to an \$850 million limit in the MAIS product offering."

underwriters had been caught up in situations where they had to pay significant fines as a result of alleged contraventions of the UN sanctions.

Each underwriter has to assess their own exposures and decide whether they feel that they are doing the "right thing".

He said: "It's probably more of an issue for

any insurer with a US connection because they seem most nervous about the situation. Everyone, though, takes the sanctions issue very seriously and different people in different companies will interpret them differently as to how they affect their entities in different ways.

"As a result, many brokers and underwriters take the view that it's more bother than it's worth."

Runway excursions
can prove costly.



RUNWAY EXCURSION INCIDENT: A LOSS ADJUSTERS' PERSPECTIVE

Loss adjuster Andrew Cripps, director, aviation, Charles Taylor Loss Adjusting, describes a case study on how a claim would be dealt with on a hypothetical event basis.

A Boeing 737-800 suffers a runway excursion at an airport in one of the emirates, while landing in the early hours of the morning. The aircraft comes to a halt in soft ground off the left-hand side of the runway. There are no injuries to the 126 people on board and all are evacuated safely.

A representative from the insurer's local Dubai office arrives on site mid-morning on the day of the incident to meet with representatives of the airline, the Accident Investigation Commission and the airport's management team, to discuss recovery operations, which commence late afternoon, utilising a recovery kit loaned by another airline.

Damage inspection

The recovery itself is completed by 22:00 hours on the same day, with the aircraft safely positioned on a remote parking stand. The detailed damage inspection that follows finds that the left-hand engine has sustained extensive damage to the intake cowls, along with ingestion to the core of the engine.

The nose landing gear, having entered soft ground, would need to be removed and returned to the manufacturer for assessment of its structural integrity.

The engine intake cowlings are considered to

be beyond economic repair, the engine itself is removed and sent to an approved maintenance facility for disassembly and detailed damage assessment.

The loss adjuster is required to submit a report to the insurers detailing the circumstances of the event, aspects of the damage sustained and, where possible, a financial estimate for the anticipated total cost of repairs, as well as collecting copies of the aircraft and crew documentation.

Following our first survey of the aircraft, further inspections are required when the various damaged components are sent to repair facilities, where a more definitive understanding of the damage sustained and the costs involved will be obtained.

This involves three separate additional surveys at differing geographic locations supported by aviation surveyors from the insurer's global network.

While the airline concerned is responsible for meeting the various repair invoices, we recommend to insurers that a specific claim fund be established to ensure money is readily available to meet repairer invoices once agreed by the airline and its insurers.

Although final repair of all the damaged components takes a number of months, the airline elects to replace the majority of parts, either from its own stores or loaned from third-party suppliers, enabling the aircraft to return to

service within three weeks of the incident.

Nevertheless, as an insurance policy will normally only cover repairs, where these are more economic, rather than replacement of components, our work extends many months after the original incident to ensure the airline claim is fully quantified.

As the various damaged components progress through the repair process, additional work, as a result of normal wear and tear, is also highlighted. Such elements of wear and tear are considered by insurers to be outside the scope of policy coverage and, thus, any such elements need to be clearly identified and explained to the airline so there are no misconceptions as to what insurers will and will not pay for.

Repair cost

Furthermore, it transpires that a small number of 'lived' components are returned to zero time and once again, as normal, the insurance policy requires us to make adjustment of the repair cost to take into account the betterment received following the installation of zero timed components.

These aspects are explained to the airline at the commencement of the repair process so that any questions or clarification required are dealt with at the earliest opportunity. In our role, clear communication with both the airline and its insurers is paramount in resolving any issues related to the progression of the insurance claim.

Together we reach new horizons in business aviation



The Middle East Business Aviation Association is the principal forum for promoting the interests of the Region's business aviation community, providing a platform for members to share best practices, helping to resolve issues of concern and enabling the industry to achieve its full potential.

Join MEBAA and discover benefits that take your business to a higher level of business aviation excellence.

To find out how your business can benefit, log on to www.mebaa.com

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MIDDLE EAST BUSINESS AVIATION ASSOCIATION

Jennings takes Etihad US post

Etihad Airways has appointed Matthew Jennings, a seasoned federal and international government affairs leader with more than a decade of experience, to the newly created senior manager of public affairs post, based in Washington, DC.

Jennings will be responsible for engaging with key stakeholders, including US policy-makers, about Etihad Airways and the benefits the carrier's growing presence brings to the US economy and American consumers.

He reports to vice president of international and public affairs, Vijay Poonoosamy.

ACS promotes Harris to ME cargo director

Air Charter Service (ACS) has announced that Nick Harris has returned to the company's Dubai office to become cargo director for the region.

Harris, who started his ACS career in the London HQ almost eight years ago, previously worked in the Dubai office as a cargo manager between 2009

GREGOROWITSCH'S NEW START AT OMAN AIR

Oman Air has appointed Paul Gregorowitsch as its new CEO in a move hailed as "the start of a new chapter in the illustrious development, at local, regional and international levels, of the national carrier", by its chairman Darwish bin Ismail bin Ali Al Balushi.

Al Balushi said: "Paul Gregorowitsch has vast experience in international airline management and his commercial expertise will be of immense benefit to Oman Air during its current phase, as well as in its next phase, where the company will experience expansion and evolution in terms of the strength of its fleet, the destinations it flies to, its operational network and its commercial activities."

Gregorowitsch, a citizen of the Netherlands, joins Oman Air from Airberlin where, having joined the company in 2011, he sat on its management board with responsibility for the carrier's commercial activities.



and 2011, before returning to London.

Adams leads Etihad MRO team

Mick Adams, former head of Monarch Aircraft Engineering, has been named vice president of the expanding Etihad Airways MRO division.

Etihad Airways bought the maintenance operation, Abu Dhabi Aircraft Technologies, from Abu Dhabi's sovereign wealth fund, Mubadala, in May.

The airline has taken over engineering assets, paint facilities and personnel needed to carry out airframe and component work on its expanding fleet – including its new Boeing 787s and Airbus A380s.

SDT appoints Mark Kane as CEO

Saudi Development & Training Company (SDT) appointed Mark Kane as CEO in September.

Kane was formerly BAE Systems' managing director of combat air

responsible for the manufacture and support of the Typhoon aircraft, the support of Tornados and ensuring tomorrow's military needs are met through the introduction of unmanned air systems.

HRH Prince Turki bin Muqrin, chairman of SDT, said: "I am delighted to welcome Mark to SDT.

"He is an outstanding candidate, with extensive international experience and will make a great contribution to our business."

Al Maha fills key maintenance role

As Al Maha Airways – the Qatar Airways subsidiary that has one of two licences to begin Saudi Arabian domestic services – prepares for launch, one of its key posts has been filled.

Ribhi Hussein, previously with Saudi Arabian Engineering Industries (SAEI) has been named as the head of material and maintenance planning for Al Maha Airways.

Tronza's Swiss role

Etihad Airways has appointed Gianni Tronza as its new general manager for Switzerland. Based in Zurich, Tronza will lead Etihad's expanded commercial operations in Switzerland following the introduction of daily flights to Zurich in June 2014.



Arik Air strategy role for Nambiar

Arik Air has appointed Vinay Nambiar (above) as vice president – UAE & Gulf Region. Based in Dubai, he will be responsible for leading and developing the carrier's regional business strategies.

Nambiar previously held key commercial roles, including Malaysia Airlines marketing manager for Middle East & Africa, and Kingfisher Airlines regional manager for the Gulf Region, where he was responsible for setting up and driving the airline's commercial operations in the UAE between 2008 and 2013.

TOP EQUITY ROLE FOR MATHEU AT ETIHAD



Bruno Matheu has been appointed to the new position of chief operating officer equity partner in the Etihad Airways Aviation Group. With almost 30 years of senior management experience in the global aviation industry, Matheu joins Etihad Airways after two decades at Air France-KLM.

He most recently served as chief long-haul officer at Air France and previously worked in executive roles across the airline's commercial, network, marketing and revenue management operations.

James Hogan, Etihad Airways president and chief executive officer, said: "The high level of experience and expertise he brings will be critical in addressing the new challenges and opportunities arising from the evolution of our business and the fast-moving, dynamic interaction with our equity partners."

Aubrey Tiedt

Marcelle Nethersole *speaks to the vice president guest services at Etihad Airways.*

1

■ Can you tell me what the role of an Etihad 'flying nanny' involves?

The 'flying nanny' supports families and children throughout their flight. The nanny is equipped with a kit to create fun and memorable moments on board, with games and activities that challenge and entertain children of all ages.

Where possible, the nanny meets her children at the gate before the flight, co-ordinates the children's meal times with families, and provides more fun in flight with face paints and the introduction of the Etihad characters Zoe the bee, Boo the panda, Jamool the camel and Kundai the lion.

Providing milk for babies and directing families toward the play area at Abu Dhabi International Airport (Terminal 3, Gate 32) for them to let off energy and steam in between connecting flights are all in a day's work for the 'flying nanny'.

4

■ What do you find is the main challenge in this role?

It is the relatively limited space that any aircraft affords in which to perform the role.

We overcome this by creating activities for children to enjoy from their seats and games that we can leave with them to play on their own or with their peers and families. Our in-flight entertainment system – E-Box – also has a special section for children playing a wide variety of programmes, films and games to keep them busy.



2

■ Why has Etihad Airways implemented this service?

Travelling can be a stressful experience, especially for young children and unaccompanied minors. Providing a family care assistant on board, who can support families and keep children entertained, demonstrates Etihad Airways' commitment to making the journey as relaxing and comfortable as possible for all guests on board.

In the months prior to its launch last year, 300 Etihad Airways cabin crew members were trained for the role. Following the September launch, further crew have been trained and there are now around 950 nannies working across Etihad Airways' flights.

The role demonstrates Etihad Airways' understanding of its guests' needs and our commitment to making the journey as relaxing and comfortable as possible.

3

■ What training do the nannies have?

The 'flying nanny' programme is supported by Norland College, the world-renowned UK educational institution. Training is conducted by in-house Etihad trainers in conjunction with Norland consultants, who play a key part in the two-day training course each nanny undertakes, offering their significant experience and expertise to cabin crew.

The in-depth course, which was developed in partnership with Norland, concentrates on areas such as on child psychology and sociology, enabling the nannies to identify different types of behaviour and developmental stages that children go through and appreciate the perspective and needs of travelling families.

In addition, the course also covers many different creative ways the nanny can entertain and engage with children (during flights) as well as support the family unit throughout the flight. The nanny is a fully qualified cabin crew member.

“Where possible, the nanny meets her children at the gate before the flight, co-ordinates the children's meal times with families, and provides more fun in flight.”

5

■ Can any guests use this service and how is it booked?

The service is available to all families travelling on all Etihad Airways long-haul flights.

It doesn't need to be booked by families. The 'flying nanny' will simply introduce herself to all families, either at the boarding gate prior to the flight or once they're on board, and assist them throughout the flight. She is identified by her orange apron. However, all cabin crew participate.



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