



# ARABIAN AEROSPACE

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

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**SPECIAL FEATURE**

What lies ahead for Iraq after US pull-out

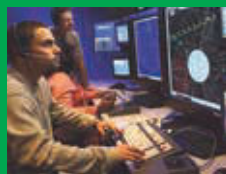
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## Good to see the region open the GATE to reality

There is always a sure sign of maturity when a country, an organisation or an industry can be open with itself and others about the failures it may have suffered – or the challenges that it faces.

I have lived, visited and loved the Middle East for more than three decades now. For a long time, everything published had to be good news. There was a fear that to talk about challenges would be seen as criticising a management or even worse, The State.

While there are still pockets of that in the region, there has been a massive cultural change.

I was delighted to be part of the Gulf Aviation Training Event (GATE) which took place alongside the truly successful Dubai Airshow. Here, representatives of the region's airlines and the training organisations talked openly about some of the huge gaps that exist in today's training systems to suit the modern highly automated aircraft. Some airlines, such as Emirates, are going way beyond the required standards and demands, while others get by with a minimum requirement.

As we need more and more pilots, there is a huge risk that in future years we will see more and more inexperienced captains in the left-hand seat.

There was a stark warning from the president of the Flight Safety Foundation. Unless things change people will die. And tragically, regulation is slow to change unless people die.

Aviation is still the safest form of public transportation. It was refreshing and surprising that it was a conference in the Middle East that was prepared to look objectively at itself and find itself wanting.

I was also in Bahrain, ahead of the January Bahrain Airshow, with a trip that coincided with the reporting back of the Royal Independent Investigation Commission to examine the episodes of civil disobedience and alleged human rights offences committed in the aftermath of the February 2011 protests.

The commission was established by King Hamad yet it



criticised the State as well as some of the protestors. Of course there were arguments that it never went far enough. But King Hamad's move was one of a reformer.

Bahrain is addressing the challenge that lies ahead and this intent should be enough to encourage our industry to support the country and its January airshow as it aims to make aerospace a major industry for employment for ALL Bahrainis.

To challenge anything takes courage – to respond fairly to such challenges takes even more.

Let us hope our industry, the regulators and the governments we work with, have the courage to adapt their practices, adopt new ideas and improve.

Safe landings.

**Alan Peaford**  
Editor-in-Chief

**COVER: UAE's 40th anniversary flypast Emirates 777 and Al Fursan. Picture: Paul Merritt**

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Simon, Dubai





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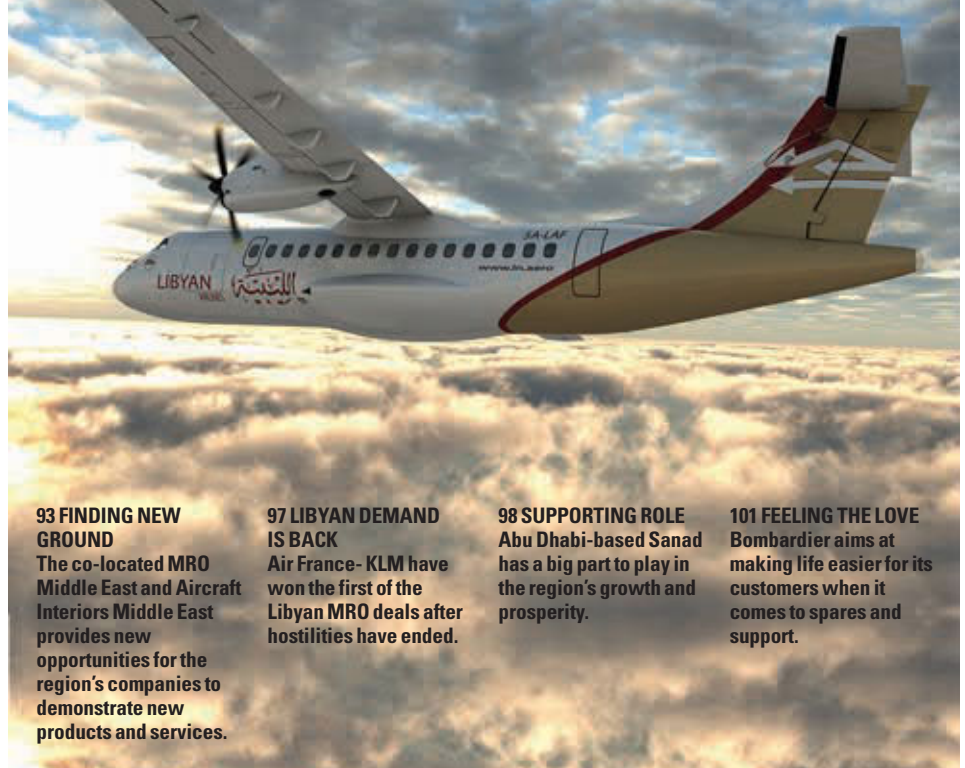
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**Dawn:** *an astronomical phenomenon caused by the refraction of the sun's rays on the atmosphere.*

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## Dubai surge goes on as records tumble

Dubai International airport passed the 50 million passenger mark over a 12-month period for the first time.

Figures released for the period ending October 31 showed passenger traffic through Dubai Airport surging to 4.3 million in October – a 7.3% growth on the previous year – despite the economic downturn across Europe.

Through the first ten months of the year passenger numbers totalled 41,855,561, an increase of 7.7% over the corresponding period in 2010.

Aircraft movements for October reached 28,463, up 7.2% from 26,558 recorded during the same month in 2010.

Dubai Airports CEO Paul Griffiths said: “New routes, additional frequencies and extra capacity continue to drive passenger traffic growth at Dubai. And we continue to break records. In October, Dubai International achieved yet another milestone by passing the 50 million passenger mark over a 12 month period for the first time.”

Air freight traffic didn't fare so well. Dubai International handled 197,841 tonnes of freight in October, a reduction of 2.5% from last year. Year to date freight volumes reached 1,808,239 tonnes, down 1.8% compared to 1,841,422 tonnes the previous year.

## Arabian Jets signs CAE training deal

Jeddah-based Arabian Jets and CAE have entered into a long-term agreement for pilot training services on eight business aircraft types.

The training will be



## EU mauled over emissions trading

Aviation and the environment, EU-Arab relations, and the Tunis Convention for the reciprocal exemption from taxes on aviation between Arab states, were the key issues from AACO's 44th annual general meeting (AGM).

The AGM was held in Abu Dhabi at the end of November with more than 300 delegates attending, including the CEOs and leaders of most of the region's top airlines. They came together with host Etihad Airways and its CEO James Hogan, as chairman of AACO, to discuss the issues.

The airline leaders took the opportunity to berate representatives of the EU over the emissions trading scheme (ETS), which came into effect in January this year.

The delegates said the issue should be addressed globally within the framework of ICAO, taking into consideration both the

special situation of airlines in developing countries and the earlier investments made by airlines in improving their environmental performance.

“Unilateral approaches won't solve the environmental concerns,” said AACO secretary general Abdul Wahab Taffaha.

The AGM also called upon the Arab Civil Aviation Commission to launch a dialogue with the relevant European parties to realise an Arab-European aviation framework in order to reach a set of principles that guarantees a balanced relationship between the two regions.

Sabre Airline Solutions' CEO Hugh Jones signed an agreement at the AGM for his company to provide AACO member airlines with regular management information reports highlighting the opportunities and threats.



Top: The fiery ETS debate generated plenty of hot air. Above: Abdul Wahab Taffaha calls for dialogue with the EU.

conducted at Emirates-CAE Flight Training (ECFT) in Dubai and other locations in the CAE global training network.

Arabian Jets aircraft types include Bombardier Challenger 300 and Challenger 850, Gulfstream GIV and G550, Hawker Beechcraft Beechjet 400, Hawker 900XP, King Air C90/B200 and King Air 350.

Training will include initial and recurrent courses, as well as various CAE advanced airmanship and e-learning subjects.

## Argus and Nexus partner for safety

Flight departments across the Middle East now have access to a new range of audit and safety management services as a result of partnership between Argus International and Saudi Arabian flight operations services company Nexus.

Argus president and CEO Joe Moeggenberg said: “Our first venture into the region has been incredibly successful so far thanks to the enthusiasm and efficiency of Nexus. Our commitment

to the field of aviation safety is unsurpassable and the safety audit products that we distribute through Nexus are incredibly important for such a fast-changing industry.”

## Electronic folder first for Qatar Airways

Qatar Airways is to become the launch customer for Boeing's new electronic flight folder (EFF).

The carrier will install the EFF on its entire fleet of Boeing 777s, making it the first in the world to transmit day-of-flight data, such as flight plans and

weather information, directly to the 777 Class 3 electronic flight bag (EFB).

Qatar Airways will also install EFF on its future Boeing 787 fleet.

The carrier will begin using the system later this year.

EFF is a software application that allows pilots to conduct route briefing and log flight progress directly on the EFB.

The suite of applications helps the airline to achieve ground report efficiencies and to reduce or eliminate paper printing, handling and storage costs.

## Oman orders second squadron of F-16s



The US Department of Defense has announced that Lockheed Martin has been awarded a \$600 million fixed-price foreign military sales contract for the supply of 12 additional Block 50 F-16 C/D fighters (eight single-seat F-16Cs and four two-seat F-16Ds) to the Royal Air Force of Oman.

The order, announced on December 14, also covers the supply of associated support equipment and logistics services.

The US Defense Security Cooperation Agency announced a possible Omani F-16 deal in August 2010, when the order was expected to cover the supply of 18 Block 50 F-16s.

The Royal Air Force of Oman took delivery of its initial batch of 12 Block 50 F-16C/D fighters (eight single-seat F-16Cs and four two-seat F-16Ds) under the 2002 Peace Asama A'safiya (clear skies) programme and these equipped No 18 Squadron at Thumrait from mid October 2005.

The F-16 order will have no effect on the

Sultanate's planned Eurofighter Typhoon acquisition, industry sources insist. BAE systems reiterated that: "Oman has stated its intention to acquire Eurofighter Typhoon and discussions with the government of Oman are on-going. While this work continues it would not be appropriate to make any comment on the number of aircraft being discussed or possible delivery timescales."

Privately, senior Eurofighter sources seemed sanguine about the F-16 order. "Oman always intended to buy a further squadron of F-16s, so this is no surprise, and is entirely consistent with its ambitions to expand and modernise its air force. The Typhoon negotiations continue to make great progress," a source said.

It is not even certain that the F-16 deal will alter Omani plans to keep its ageing Jaguars (which were recently re-winged) in service as long as support from India is available.

The Omani F-16 order comes only weeks after Iraq placed a follow-on order for 18 additional F-16s. These new orders will ensure F-16 production out to 2015.

## Etihad's carbon cuts at the double

Etihad Airways has successfully reduced carbon emissions by a combined total of nine tonnes on two flights from Australia to Abu Dhabi.

The savings were made as a result of co-operation between Etihad Airways and various air traffic control centres on the ground that enabled the aircraft, Airbus A340s, to fly routes that took advantage of prevailing jet streams.

As a result, a combined total of 2.8 tonnes of fuel was saved on the flights, one of which departed from Melbourne, the other from Sydney.

James Hogan, Etihad Airways' chief executive officer, said: "The fuel savings and reduced carbon emissions made by these flights are potentially hugely beneficial for both the aviation industry and the environment. "In recent years, the technological advances

made in aircraft navigation systems have been enormous. Aircraft are no longer reliant on ground-based navigation systems but use advanced navigation systems based on the GPS satellite constellations.

"This allows aircraft to fly an infinitely variable number of different routes between two points, subject to the agreement and approval of air traffic service providers (ANSPs)."

## EASA's OK to MNG Ataturk MRO

Turkish business aviation and MRO specialist MNG Jet has received its EASA Part 145 approval for Ataturk Airport Istanbul (IST), Turkey.

The company already holds approvals for its Ankara (ESB) Airport base, but is now able to perform base maintenance on Challenger 601, 604 and 605 and Hawker 700, 750, 800, 800XP, 850XP, 900XP at Istanbul's main airport.

## Unique crew trainer is a Spatial winner

UAE-based Spatial Composites is helping Virgin America maintain its renowned high standards and service levels with the provision of a unique crew trainer facility.

The trainer – a replica Virgin America A320 cabin – was built at the firm's manufacturing base in Ras Al Khaimah and shipped to California in several parts. It was then assembled at the airline's new training centre near San Francisco.

Virgin Group founder Sir Richard Branson joined Spatial Composites CEO Joe McKeever at the high-profile ribbon cutting and handover ceremony.

The trainer will be a keystone in the intensive in-flight training the airline conducts, allowing Virgin America to ready thousands of its flight crew at the Californian centre.

Branson praised Spatial for its product, which enables the crew to practise day-to-day operations and emergency procedures with



Virgin boss Sir Richard Branson and Joe McKeever at the California hand-over.

real situational awareness.

Training officers can monitor proceedings without being seen by the crew, who work inside the realistic cabin. Trainers built by Spatial can be used for practicing smoke problems, emergency evacuation and service training.

"I think it's the first time a UAE manufacturing company has been involved in such a high-profile project in San Francisco," McKeever said.

## New ATC tower at Iraqi air bases

The Iraqi Air Force has gone operational with new air traffic control tower systems at its bases at Tikrit and Taji. Arinc Engineering Services of the USA carried out the procurement, integration, testing, and installation of the new equipment.

The new technology allows Iraq's Air Force to establish efficient operational control with modern equipment in the towers at the two airbases, as part of the rebuilding of Iraq.

## Training renewed

The flight training services agreement between Jordan Airline Training & Simulation (JATS) and Arabia for Professional Skills Development (APSD) has been renewed for another year.

Under the terms of the contract, which is renewed until November 2012, JATS provides APSD trainees with various types of aviation courses for pilots, engineers and cabin crew.



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## Gal Mena signs cabin interiors LOI

Gal Mena has received a signed letter of intent (LOI) for a new service agreement with ExecuJet Middle East.

The companies are joining forces to deliver all-inclusive cabin interiors services to major OEMs' aircraft platforms, and their existing client base.

Work packages for interiors and major components will be marketed through the refurbishment centre in Bahrain and will conduct on-field activity at ExecuJet's facilities at Dubai airport.

## Gulf Helicopters 20,000hrs milestone

The AgustaWestland 139 medium twin helicopter fleet operated by Qatar's Gulf Helicopters has achieved the milestone of 20,000 flying hours.

Gulf Helicopters is one of the largest AW139 operators worldwide and a prime player in the Middle East with 12 helicopters of this type already in service and five more to be delivered. It first ordered the AW139 in 2007 as part of its fleet renewal and expansion plans and the aircraft has been performing offshore transport missions.

Bruno Spagnolini, chief executive officer, AgustaWestland, said: "We congratulate Gulf Helicopters on achieving the milestone of 20,000 hours in such a short time. It is a particularly notable one given the demanding environmental conditions the fleet is operating in. We are totally committed to supporting the demands of offshore helicopter operators worldwide and look forward to further expanding our partnership with Gulf Helicopters and to celebrate future major operational milestones."



## Etihad cuts \$1bn deal with Sabre

Etihad has agreed a deal valued at more than a billion US dollars with aviation computer technology provider Sabre Airline Solutions.

The result of an exhaustive selection process, the 10-year deal will see Etihad Airways utilise cutting-edge, integrated software across its reservations, inventory, marketing, planning, e-commerce, distribution and departure control operations.

The Sabre-created software will be implemented by February 2013 and will significantly reduce the airline's technology costs, while streamlining processes considerably.

Etihad Airways CEO James Hogan said: "This ground-breaking deal will play a pivotal role in providing Etihad Airways with the tools necessary to achieve its next phase of growth and profitability targets in an innovative, sustainable and cost-effective manner."

"It will be the single largest technology-enabled business change that Etihad Airways will undertake in a decade."

"Sabre came to us with a world-class product that we believe will help us increase revenues but also take our outstanding customer service to another level."

"This integrated approach not only gives us cost certainty, but creates efficiencies of scale. We are fortunate to be in a position, unlike legacy carriers, to be able to implement this software across the board."

Also included in the deal is a multi-year, full content distribution agreement to provide Sabre-connected travel agents worldwide with real-time access to Etihad Airways' flight and scheduling information.

Etihad Airways will also be able to access the Sabre global distribution system to market and sell products and services.

Sam Gilliland, Sabre chairman and CEO, said: "This technology will provide the airline with the flexibility to adapt to the constantly changing travel marketplace as it grows over the next ten years to become one of the largest airlines in the world."

## G650 provisional type certification

The Gulfstream G650 has received its provisional type certificate (PTC) from the Federal Aviation Administration. This clears the way for the company to begin interior completions of the ultra-large-cabin, ultra-long-range business jet in preparation for customer deliveries in the second quarter of 2012, as originally planned.

"We are pursuing a two-step certification approach to keep us on track for our planned deliveries in the second quarter of 2012," said Larry Flynn, president,

Gulfstream. "With the PTC in hand, our plan is to move production aircraft into final phase manufacturing."

The four G650 aircraft in the flight-test programme have flown more than 2,225 hours during more than 675 flights.

Among its achievements, the G650 has flown for more than 14 consecutive hours, with flight-test data confirming its ability to achieve 7,000nm (12,964 km) at Mach 0.85. The aircraft has also demonstrated 5,000nm (9,260 km) at Mach 0.90. With a top speed of Mach 0.925, the G650 is the world's fastest civilian jet.

## Oman Air quality certification

Oman Air celebrated achieving an ISO quality standard certificate at a ceremony in Muscat.

The national carrier of Oman was awarded ISO 9001:2008 certification by Bureau Veritas under UKAS accreditation.

ISO 9001:2008 is an internationally-recognised standard for quality management, ensuring that organisations have proven processes in place to meet customer requirements.

The accreditation is granted independently and signifies high quality work.

## Saudi finalises new F-15 order

Saudi Arabia is to receive 84 new Boeing F-15 jets as part of a \$29.4 billion deal with the US.

It also receiving upgrades to its 70 older F15s, as well as munitions, spare parts and training.

## Iraq hands-on with Lufthansa Consulting

The Iraqi Minister of transport, Hadi Al-Amiri, has announced the selection of Lufthansa Consulting to evaluate the ground-handling requirements at Baghdad International Airport – the capital's main airport and the country's main international gateway – as well as at the international airports Basra and Mosul.

Iraq's aviation system is now going through a phase of reconstruction as the situation at the airports is also returning to normal.

Regular air services are slowly being resumed and plans are underway to renovate and expand the airports following two wars and many years of disruption, which have caused considerable damage to facilities.

## Turkey signs UK co-operation treaty

The Armed Forces of Turkey and the UK have signed a military co-operation treaty during an official state visit to Britain.

General Hulusi Akar, deputy chief of the Turkish general staff, and the Rt Hon Phillip Hammond, UK Secretary of State for Defence, signed the treaty.

The agreement is designed to facilitate greater defence co-operation between Turkey and the UK across a range of military activities.



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## Emirates chooses Vistair for cloud

Emirates has contracted with UK-based Vistair to provide cloud-based technical manuals for its entire fleet in a new five-year deal.

Following a selection process spanning two years, Vistair will provide, manage, and update cloud-based e-manuals for the airline's fleet of Boeing 777s, and Airbus A330s, A340s, and the new A380s.

## Vanderlande acquires Beewen

After working very closely together for many years, baggage handling company Vanderlande Industries and Beewen agreed on a take-over of Beewen by Vanderlande.

In the new set-up Beewen will be the AS/RS centre of competence within Vanderlande with the prospect of growth in line with the strategic ambitions of Vanderlande Industries.

## Gael iPad system is a safety first

Scottish company Gael has, in conjunction with the UAE's General Civil Aviation Authority (GCAA), set a new global standard for aircraft safety regulators by using an iPad-based system.

Under the system, iPads are used to regulate the safety performance of almost 800 operators and 600 registered aircraft operating in the UAE airspace.

The programme uses Gael's Q-Pulse compliance management application to create a mobile offline audit capability, with the new paperless system reducing duplication of effort; allowing faster and more accurate reporting and making the audit process more effective and efficient.



## First An-32B finally delivered to Iraq

The first of six Antonov An-32Bs ordered by the Iraqi Air Force has finally been delivered to Baghdad-Al Muthanna Air Base, arriving in Iraq on November 18. Antonov's chief designer, president and chairman, Dmytro Kiva, confirmed on November 4 that the contractual dispute between Iraq and Antonov ASTC/Aviant that had previously prevented delivery had been solved, and that payment had finally been received.

An Iraqi inspection team rejected the first three aircraft in the autumn of 2010, charging that the avionics and engines used violated the terms of the contract, in that they were used items.

Ukrainian newspapers reported that three aircraft were complete and ready for delivery at the end of February 2011 and a revised delivery date of May was then set, assuming that payment had been made. But the dispute dragged on and the aircraft sat forlornly at Kiev for months.

The aircraft delivered was actually the third of the four aircraft that have now been completed, and the first and second were ferried to Iraq in December. All six An-32Bs will

be in service by late 2012. The An-32Bs were just part of a \$2.5 billion defence export deal, which also included repairs to two Mil Mi-8 'Hip' helicopters and 420 BTR-4 eight-wheeled armoured personnel carriers. Delivery of the APCs was similarly delayed (again after Iraq objected to the fitting of used equipment to the supposedly new vehicles).

The An-32B 'Cline' is a more powerful derivative of the An-26 'Curl', originally developed to meet Indian requirements for an An-26 variant with better hot and high performance.

The An-32B is fitted with over-wing AI-20 turboprop engines, the positioning allowing larger diameter propellers to be installed.

The end result is that the An-32B is almost twice as powerful as the basic An-26, with a payload capacity of 6,900kg (14,750lb) and a 1,050km/650 mile range with a full load.

The An-32B is claimed by its manufacturers to be broadly comparable to modern international competitors like the Alenia C-27J Spartan and EADS-CASA C-295M.

## Yahsat wins leadership award

Al Yah Satellite Communications Company (Yahsat) has been presented with the 2011 Frost & Sullivan Middle East Market Penetration Leadership Award in Defence.

The award is presented each year to the company that has demonstrated excellence in capturing the fastest measured rate of change of market share within its industry. This award recognises how fast a company increases its penetration of a market, in terms of revenues or units.

Yahsat's satellite Y1A has been successfully delivered in orbit and is providing satellite communications services for both governmental and commercial customers across the Middle East, Africa, Europe and South West Asia.



## R-R wins \$500m Saudi deal

Engines OEM Rolls-Royce has won an order from Saudi Arabian Airlines, worth up to US\$500 million, to provide engines and after-sales 'total care' support for a previously announced order for four Airbus A330 aircraft, plus four options.

These aircraft, which are due to enter service from 2013, will be in addition to Saudi Arabian Airlines' existing fleet of eight Trent 700-powered Airbus A330s and will bring the total of Trent 700-powered A330s in the fleet to 16.

Khaled Al-Molhem, Saudi Arabian Airlines director general, said: "Our first Trent 700-powered A330 went into service in May last year and, since then, it has performed flawlessly. We have confidence that Rolls-Royce technology and support services are the right choice for our continued growth."

The Trent 700, the only engine designed specifically for the A330 aircraft, has won more than three-quarters of orders in the last three years and more than 1,400 are now in service or on order. All the engines in service in the Middle East are covered by R-R's long-term service support.

## Great VIBES for Jeddah airport

Vanderlande Industries has been awarded the contract to supply and install the baggage-handling system for the new terminal at King Abdulaziz International Airport in Jeddah, Saudi Arabia.

The order forms part of the total contract for the terminal, which was awarded to the Saudi Binladen Group.

The system will be based on Vanderlande's TUBTRAX concept, to transport baggage at high speed in tubs over distances of more than 1km in the terminal. Automated, space-saving storage of early bags will be provided by the company's Bagstore system.

Vanderlande's VIBES software suite will control the system and support the operators.

## Panasonic's ten-year IFE Etihad deal

Etihad Airways has selected Panasonic Avionics Corporation to provide IFE systems and in-flight connectivity, including broadband internet and live TV, for the airline's entire long-haul fleet of wide-body aircraft.

Valued at more than US\$1 billion, the 10-year exclusive agreement includes a full service maintenance contract.

Under the agreement, Etihad Airways will install Panasonic's eX2 system on its new Airbus A380s, Boeing 787s, and Boeing 777-300ERs, and will use Panasonic's eX3 solution for its new Airbus A350 aircraft.

## Jet Aviation's new services from Dubai

Jet Aviation is to expand its FBO services at Dubai to include dispatch services to support aircraft owners and operators with their day-to-day operational needs.

The General Dynamics subsidiary said it would add dispatch services to its range of 24/7 domestic and international handling services by the second quarter of 2012.

Trained dispatch personnel will be on site to provide round-the-clock services, including arrangement of over-flight and landing permits, fuel purchasing, emission trading support and continuous monitoring.

## EASA approval for Dreamliner engine

Rolls-Royce has received EASA approval for the enhanced 'Package B' version of the Trent 1000 engine, which powers the Boeing 787 Dreamliner.

This model is certified to 70,000lb take-off thrust and will enter service with



## Yemeni fast jets destroyed on the ground

The Republic of Yemen Air Force (al-Quwwat al-Jawwiya al-Yamaniya) has been flying air strikes for most of 2011, trying to suppress an uprising against president Ali Abdullah Saleh.

Opposition forces – mostly tribesmen allied to a dissident general, Ali Mohsen al-Ahmar – are calling for an end to Saleh's 33-year rule.

On September 28 last year a Su-22 was shot down by rebel soldiers (possibly using a MANPADS) during a bombing mission against targets near Beit Azar, about 50km north of Sana'a. The pilot reportedly ejected and was captured.

Then on Sunday October 30 insurgents attacked the al-Daylami air base, the military enclave adjacent to Sana'a International Airport, on the Eastern side of the north-south main runway.

The base accommodated around 18 MiG-29SMTs and UBTs of 9 Squadron, about ten F-5E Tiger IIs and F-5B Freedom Fighters of 121 Squadron, and 26 Squadron's 30 Su-17/20/22

fighter-bombers (26 Squadron also has 15 MiG-21s but these are normally detached to Taiz, about 150km south).

Two or three fast jets were destroyed on the ground (reportedly including at least one MiG-29), though different sources gave different explanations for the losses. Yemen's Defence Ministry said that two fighter jets and a small ammunition storage facility were destroyed by mortar shells, while Al Jazeera reported other military sources as saying that three fast jets were destroyed when explosives were planted inside 12 fighters.

The aircraft were reportedly loaded with ammunition ready for air strikes planned for the next day. Sana'a airport was closed as a precaution and flights were diverted to Aden.

The attack marked one of the final acts in the 2011 uprising. As on November 23, Saleh signed a power-transfer agreement brokered by the Gulf Cooperation Council, agreeing to leave his post within 30 days.

All Nippon Airways (ANA) shortly.

Simon Carlisle, Rolls-Royce, programme director – Trent 1000, said: "This is a significant milestone at the end of a year of considerable achievement for the Trent 1000, including powering the entry into service of the 787 Dreamliner."

## R-R pilot programme targets UAE students

Rolls-Royce has signed a memorandum of understanding (MoU) with the UAE Ministry of Education to launch a pilot programme for Rolls-Royce Technology

Laboratories in the UAE.

Designed to promote interest among UAE students in science and engineering and to give them practical engineering skills, the Rolls-Royce Tech Lab pilot programme will be set up at Hamdan bin Rashid School in Warqaa, Dubai.

The programme is designed to encourage students into engineering careers and will initially involve the participation of 22 students and four teachers over 13 weeks. The lab is due to open at the start of the second semester in January 2012 for the students in the grade 11 science section.

## TAI weighs up ANKA lift

Turkish Aerospace Industries (TAI) has successfully flown its medium altitude long endurance (MALE) unmanned air vehicle (UAV) as part of a key test programme.

The UAV, called ANKA, is produced at TAI's facilities in Ankara, Turkey.

The company said it had completed its fifth test flight, marking the beginning of the envelope expansion process during which the aircraft is demonstrated to perform safely and match the system's performance

requirements over a broad range of altitudes, airspeeds and operating weights.

After reaching planned altitude of 10,000ft, a series of test points were executed to check and gather data on aircraft and autopilot performances.

## Maximus safety audit boost

Abu Dhabi-based Maximus Air announced it has successfully completed the IATA operational safety audit (IOSA), recognised as the global standard for assessing airlines' operational safety, management and control systems.

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A Bombardier Global aircraft is parked on a tarmac in front of several hangars. The scene is set during sunset, with a sky filled with dark, dramatic clouds and a warm orange glow on the horizon. The aircraft is the central focus, positioned in the lower half of the frame. The hangars behind it have a curved, arched roofline. The overall mood is professional and serene.

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*The biennial Dubai Airshow is the highlight of the aerospace calendar across the MENA region. Arabian Aerospace was there in force producing daily newspapers, videos and online news reports. Editor **Alan Peaford** sums up the best moments.*

# DUBAI MOVING ON UP...

**D**ubai Aero Expo – the purpose-built exhibition halls at the easterly end of Dubai International Airport – has become synonymous with the biennial Dubai Airshow, but with more than 57,000 people packing their way into the facility over the five days of the event it became patently clear that the government’s decision to move the show is at the right time. 2013 will see the show in a new home at Dubai World Central, alongside the Al Maktoum International Airport.

For exhibitors who have become familiar with the Aero Expo, there is sadness at moving to a new venue – but for the organiser, F&E Aerospace, there is also great excitement of a new era with sufficient space to allow creativity for manufacturers or national groups with their ideas for pavilions; there will be more static space to meet demand for aircraft and a display area not restricted by the air traffic demands of one of the busiest international airports in the world.

The move is not before time. The third largest international aerospace show in the world is continuing to grow. This year’s statistics speak for themselves.

There was an increase of 7% in the number of trade visitors to 56,548.

There was an 8% increase in exhibitors to 960. There were 122 countries represented, 103 chalets and more than 325,000sqm of exhibition space taken in an area that has been

Continued  
on Page 22

The roar of the fighter aircraft thrilled the thousands who thronged outside the trade-only show.



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## EVENTS

### CONTINUED FROM PAGE 20

squeezed over recent years with the continued development of the rapidly growing airport.

The show is held under the patronage of HH Sheikh Mohammed bin Rashid Al Maktoum, vice president and prime minister of the UAE and ruler of Dubai, and in co-operation with Dubai Civil Aviation Authority, Dubai Airports and the UAE Armed Forces.

The support of the government makes a huge difference and led to some 194 official delegations coming to the event and, with a special royal pavilion alongside the show, there were real opportunities for business to be done.

HH General Sheikh Mohammed Bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, said: "The airshow has grown in terms of advancement and number of major world exhibitors, visitors and deals. This reflects the significance of the Dubai Airshow as a major exemplary launchpad for manufacturers to showcase their various products to the countries in the region and meet the market requirements."

### Royal parties

There were some 46 royal parties attending. These included the King of Spain, King Juan Carlos, who joined both Sheikh Mohammeds at the official opening and tour of the exhibits.

This year's event coincided with build-up to the UAE's own 40th anniversary, and the organisers made sure the show played its part in the celebrations.

An emotional conclusion to the show saw an Emirates B777 lead the flypast with the country's aerobatic display team – Al Fursan – flying Aermacchis, trailing the colours of the UAE national flag much to the delight of the crowd.

The Al Fursan team was making its debut at the show and demonstrated just how proficient it has become in its first real year of operation. It will be a show stopper at other events in the region – and even further afield, for years to come. (See story page 84).

Unique among the leading international shows, Dubai Airshow is a trade-only event with no public displays. But for miles around the showground all available space was taken with families parking and picnicking to watch the impressive displays.

Manufacturers also took the opportunity to arrange their own aerial photo shoots and residents close to Dubai's famous landmarks were



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An Emirates B777 accompanied by the Aermacchis of the Al Fursan display team paid tribute to the UAE's 40th anniversary.

Below left: Speed is not everything. The grace of the C17 is impressive.

Below: The M-346 prototype crashed after the show.

Bottom: The UAE's F-16s put on a great display.



treated to virtual daily displays as aircraft such as the Eurofighter Typhoon, the V22-Osprey, the Boeing C17, the Aermacchi M-346 and the Patrouille de France display team took positions or practiced manoeuvres along the beach front.

The aftershow celebrations were tinged with a certain sadness when one aircraft, the prototype Alenia Aermacchi M-346 trainer, crashed off the Deira Palm island on its return journey to Italy after the show.

"The crew successfully ejected from the aircraft, and no serious injuries were reported," said Alenia. The causes of the accident are still being investigated.

Many of the key issues from the show are covered elsewhere in this edition of the magazine – but there were indeed many highlights.

The major controversy was the issue over the UAE's fighter aircraft. Almost three years ago the UAE said it had opted for the Dassault Rafale. Two years ago there was an expectation that a final contract would be signed at the Dubai Airshow. This year it was almost a certainty. But on the eve of the show at the Chiefs of Staff conference at the Jumeirah Beach hotel, there came a shock announcement that the competition was again open.

### New nerve

The French delegations were stunned. Americans, in the form of Boeing with its F15 and the European coalition with the Eurofighter Typhoon were ecstatic and there was undoubtedly a new nerve to the flying displays.

Dubai Airshow has always had a reputation for jaw dropping orders, but while the Defence Force wasn't playing ball, the region's civil airlines certainly were.

Organisers estimated there was a total order book of some \$63 billion from deals signed at the show.

The first day's order made the world headlines. Boeing signed an order with Emirates Airline for 50 B777-300ER (extended range) aircraft, plus options for an additional 20, which, with a value of US\$26 billion, made it the single largest commercial aircraft order in Boeing's 95 year history in dollar value.

Aircraft are due to begin deliveries in 2015 and the order is in addition to the 40 777-300ERs currently awaited and the 61 in service.

The agreement was signed by HH Sheikh Ahmed bin Saeed Al Maktoum, chairman & chief executive of Emirates, and Jim Albaugh, president & CEO Boeing Commercial Airplanes. It was witnessed by Dubai's ruler HH Sheikh Mohammed bin Rashid Al Maktoum, Tim Clark, president of Emirates Airline, and David Joyce, president and CEO of GE Aviation, whose GE 90-115B engine will power the aircraft.

The order will give Emirates the largest B777 fleet in the world. Speaking at the signing Sheikh Ahmed said: "The 777 has served Emirates very well in terms of seat cost and fuel consumption. It plays a pivotal role in Emirates development of a modern fleet to meet the demand for global air travel for the future."

Continued  
on Page 26

# changing is in the a

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CONTINUED FROM PAGE 23

He added that the order will be financed with a variety of investment vehicles, including operating leases, European and US export credit options and Islamic financing but also made a point that the B777 order is to support expansion and will not affect the airline's order for the delayed Airbus A350.

That must have come as something of a relief for Airbus, which was facing another order challenge with some last-minute negotiating and a public dressing down by the CEO of Qatar Airways, Akbar Al Baker.

Following a day of tense and very public brinkmanship, Al Baker and Airbus COO, customers, John Leahy appeared to be on the verge of falling out. But by the time the protagonists met in front of the world's media late in the afternoon of the third day of the show they were all smiles again.

The end result was a mega-order for 80 A320neos (50 firm and 30 options) and eight A380s (five firm and three options). At book price, the firm orders are valued at \$6.4 billion... and Qatar Airways will receive the first of all three A320neo variants.

#### Tough negotiations

Airbus later celebrated the deal and described, with a degree of understatement, a day of "tough negotiations". Despite the smiles, the potential for further verbal sparring over the A350-1000XWB and a clutch of A330 freighter conversions was ever-present.

While Al Baker's negotiating tactics can be very public and to the point, Leahy prefers to do his talking behind closed doors. The morning had begun with Al Baker cancelling another media conference. Asked why, he said: "We have reached an impasse because Airbus is still learning how to make aeroplanes. These problems are not about the price but about the terms of the contract."

Referring to recently announced six-month delays from Toulouse to the A350-1000XWB's entry into service, for which Al Baker signed a MoU at this year's Paris Air Show to buy 80 aircraft, he said he "understood and accepted an insignificant delay of six months, anything further would cause difficulties and we simply cannot accept any further delays". He also said that performance issues with the A350-1000 were still to be resolved.

When questioned about the scale of the differences with Airbus, Al-Baker was typically colourful, saying they were "trivial, when compared with the 50-year impasse between the Palestinians and the Israelis".

Al Baker also signed with Boeing for two B777 freighters, valued at US\$560 million at list price. Boeing most certainly had a great show.

The American company kicked it off well with the arrival of its latest aircraft, the B787 Dreamliner, which made its debut at the show.

Carrying manufacturer's identity ZA003 (the third airframe built and the fourth to enter the test





**A moment of joy for Airbus' John Leahy (right) following an earlier "dressing down" by Qatar CEO Akbar Al Baker.**

**Below left: Pakistan's J-17 Thunder made its show debut with Pakistan air force crew keen to talk about the aircraft's capabilities.**

**Below right: Boeing's B787 Dreamliner made its first appearance in the Middle East at the show.**



programme) the aircraft flew in for its inaugural trip to the Gulf. It has subsequently visited Doha as part of a world tour to its customers.

Middle Eastern airlines to have ordered the Dreamliner so far include ALAFCO, Etihad, Gulf Air, Qatar Airways, Royal Jordanian and Saudi Airways. It joined the 121 other aircraft on the static display line, which included other show debutants such as the Bell-Boeing V-22 Osprey and the Chinese MA-600 from Xian Aircraft Industries.

The importance of the Dubai show to manufacturers was demonstrated by Bombardier which used the event to unveil the cockpit mock-up for its new C-Series aircraft as well as its fully furnished cabin demonstrator.

"This is an amazing aircraft and this demonstrator lets people see for themselves how much space there is," said Bombardier Aerospace president Guy Hachey.

### Potential customers

The flight deck element of the demonstrator was added in order to show potential customers the advanced technology on the C-Series.

Chet Fuller, senior vice president, commercial aircraft said the ProLine Fusion system would impress any pilot, as would the comfort of the cabin and the aircraft's fly-by-wire technology.

"This is the widest narrow-body on the market and the most efficient," he said.

Fuller made a passing reference to news that Embraer is to re-engine its 175, 190 and 195 E-Jets. "Putting a new engine in an old airplane does not match a whole new airplane," he said.

Another mock-up causing a bit of a stir was Quest Helicopters. A Dubai firm working with a Ukrainian company is to build the helicopter in the UAE (see page 63).

On the final day, the Dubai Airshow hosted the first-ever 'Futures Day' – an event aimed at the future aviation professionals of the UAE. This initiative proved to be very successful as over 4,000 senior-level students from key UAE colleges and universities attended.

Alison Weller, Managing Director of airshow organiser F&E Aerospace, said: "The 2011 Dubai Airshow proved to be the best in our 22-year history. Reactions from exhibitors, visitors and the Dubai government have been outstanding."

For the organisers, the work has already begun in planning – and selling – the next show at the new venue with a single aim, to make sure it is not an unlucky 13th, and that the 2013 show can match the success that was Dubai 2011.

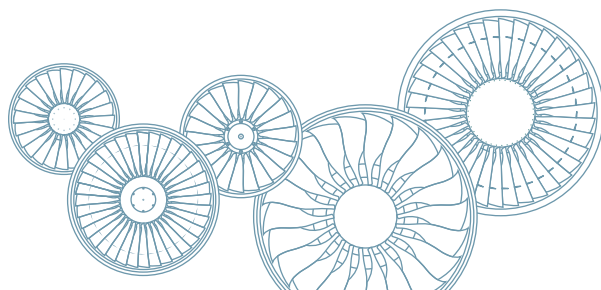


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*Innovation, new products and new relationships were the theme in the halls at November's Dubai Airshow. Marcelle Nethersole selected her favourites from the event.*

## Avia breathes new life into emergency equipment

A portable oxygen system for therapeutic and emergency use on aircraft received a lot of attention at the Dubai Airshow.

UK company Avia Technique launched its Pulse AE and DE series portable pulse oxygen system (PPOS).

Business development manager Paul Trevena explained: "The products are designed for airlines that want to give excellent service, catering for passengers with a respiratory issue. With an ageing population this service will be in greater demand.

"The concept is that the conserver only issues oxygen when the passenger requires it, saving up to four times the oxygen, reducing the number of cylinders, saving weight and cost. It's very simple to operate, robust and does not require batteries. One of its unique features is that it can provide constant flow of two and four litres per minute, as well as the pulse settings."

Avia Technique has received interest from a number of airframers and the Avia pulse products have already been selected by a major UK airline and a Middle East airline. Trevena said: "We have had some really strong interest from airlines based in the Middle East region that want to provide the best service for their customers and want the best equipment

"The DE is probably the first PPOS that can be used for aerospace therapeutic and emergency applications," he added.

Another feature is the contact memory button (CMB) installed on the rear of the assembly, which stores full traceability of the assembly, including the batch numbers of oxygen and who filled it. The data complies with ATA Spec 2000.

Ian Campbell, Avia Technique's managing director, commented: "Avia engaged with airline end-users and incorporated many of their ideas into the design of the products."



## Meteor hurtling to combat aircraft

Meteor, a new long-range air-to-air munition, has been unveiled by MBDA Missile Systems.

Looking across the range of new generation European combat aircraft such as Rafale, Typhoon and Gripen, Meteor is being developed to offer a "major and truly unbeatable air combat advantage".

Company spokesman Jean Dupont said: "Meteor has been designed to provide the largest no escape zone of any air-to-air weapon, resulting in a long stand-off range and high kill probability to ensure air superiority and pilot survivability."

Meteor's ramjet propulsion allows the missile to maintain velocity (the missile reaches speeds of around Mach 4) throughout the entire flight envelope right up to the final stages of target approach and impact.



## < Hydra a roaring success!

Hydro, a world market leader in ground support equipment and maintenance tooling for the repair and manufacture of aircraft or engines, has painted its new, standard axle jack in the style of a tiger – and the company is now hoping to do a roaring trade.

Regional sales manager Alfred Siefert said: "Hydro has a uniquely large product portfolio. The jacks have a very short extension time to jacking point; have an integrated pneumatically-driven hydraulic pump and integrated automatic retraction system for quick removal."

He added: "The jack can be used for many aircraft types due to its compact design and can support nominal loads of 45, 60, 77 and 90 tonnes."

## The right city to manage disasters

The Tawazun Safety, Security and Disaster Management City (TSSDM) already provides maritime and offshore training at its centre in Mussafah, Abu Dhabi.

TSSDM is an initiative that aims to build, sustain and enhance the nation's capacity and capability to protect its communities, assets and vital infrastructure.

Now the company has acquired 100 acres of land surrounding its facility to create a training zone made up of walk-through replicas, displays and props, which simulate everything from an earthquake to a helicopter crash.

Training specialist Humaid Al Hajri said: "When our expansion is complete in six years' time, we'll be the leader in multi-agency training for emergency, crisis and disaster management.

"Using the latest technology, in conjunction with unique training simulators, we will be able to tailor training and consulting solutions to suit any industry sector or potential scenario.

"Our centre will also serve as a national and international repository of knowledge concerning social and behavioural science and policy aspects of emergency, crisis and disasters."



## The flying Turkish coffee

When it comes to flying, you are rarely offered a decent cup of coffee, but UK-based supplier of specialised galley inserts for commercial and corporate aircraft, Aerolux, has changed that and produced a Turkish coffee maker.

"Specifically designed for use on board aircraft, this new product is aimed at the premium customers. It will enable cabin crew to offer passengers Turkish coffee in the air," said Aleem Shaikh, business development manager. "We also have a new 28VDC espresso coffee maker based upon the experience gained from many years of producing the award-winning nespresso coffee maker."

## Not a Greek myth...

Charter and aviation consultancy services are being offered to clients in the Middle East, Europe and Africa by Athens-based GainJet Aviation.

GainJet's young fleet includes one VIP Boeing 757; two VIP Boeing 737-300s; one ULR Bombardier Global Express XRS; one long-range Gulfstream G450 and five medium-range Gulfstream G200s.

Backed by a strong aviation infrastructure, GainJet provides a team of experienced professionals for aircraft management and consultancy, who ensure each client's flight preferences are adhered to and their aircraft are utilised efficiently.



In the hot seat:  
Alessandra Testa.

## < Perked up by seat success

The world of aircraft seating may not seem a natural business opportunity for a coffee machine manufacturer – but don't mention that to Iacobucci HF.

The Italian company is already working on its second VIP seat in collaboration with Designworks USA, having had a major success with its first effort.

"We had the idea of entering the seat business four years ago with the aim of marketing the business aviation sector, as that is our core market," said sales manager Alessandra Testa.

"We hired 15 people from an aircraft seat company to ensure we had the right structure."

The first offering is 23in wide with a 45in backrest plus a personalised recline mechanism, including a three-way headrest. Other features include a drop-down armrest, together with an extendable leg rest and foldable table.

"We developed a seat ergonomically responding to the form of the human body," said Testa. "It is lightweight and can be customised to suit individual needs and fit a wide variety of cabin interior designs."

The follow-up seat now being worked on features a specific 'cradle' recline mechanism with a seat plan tilt co-ordinated with backrest recline, and a fully retractable armrest with friction drop-down movement, which converts the seat surface into a full flatbed.

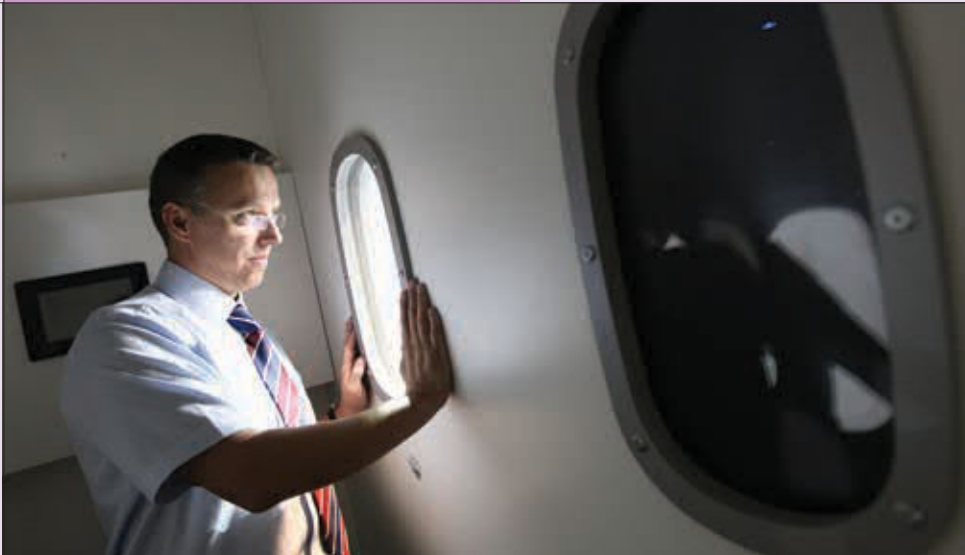


# nexus



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## < *The window to watch...*

The world's first electrochromic window shades for commercial aircraft passenger cabins – as used on the Boeing 787 Dreamliner – were on view at the Dubai Airshow.

PPG Aerospace Transparencies, which creates Alteos interactive window systems designed to replace conventional plastic pull down shades, was happy to show off the technology.

Middle East sales manager Wayne Walker said: "These advanced systems switch from a bright, clear state to a totally dark state, or a comfortable intermediate level, all at the touch of a button.

"Electrochromic technology uses electricity to change the colour of, and light transmission through, transparent thin films, which are typically sandwiched between thin glass plies."



## *Pod to get fighters out of a jam*

Elettronica has found a way to reduce operational threats to combat aircraft by creating its ALQ-703 highly integrated support jammer pod, designed to provide both individual and collective protection to combat aircraft.

The company's Mario Rocco Orsini said: "When it comes to operational scenarios, the most likely threat to combat aircraft over the target area will be surveillance and acquisition and tracking radars, as well as missile and fire control systems. Our system design ensures prompt interception and automatic processing of the radar environment. The ALQ-703 can do this because it has solid-state and digital technologies including digital radio frequency memory (DRFM) digital receiver and RX/TX modules.

"It also has phased-array antennas, featuring fast electronic beam steering and high effective radiated powers (ERPs). The pod is designed for use in the platform's central station so that it can provide 360 degree coverage. Self-cooled and fully automatic, the support jammer pod is essentially stand-alone equipment which, during missions, overrides the platform's internal self-protection suite."



## *Orca looks to be a great asset*

The Orca, an unmanned VTOL system that can be deployed as a primary day or night surveillance, re-supply or precision-targeting asset, is really making waves. It has a tip-jet propulsion system, described as a unique breakthrough in state-of-the-art technology.

Leif Petersson, president and CEO of Swiss-based company Unmanned Systems AG, said: "What makes our Orca superior to any other VTOL UAV is its unprecedented performance, usability and cost-effectiveness, all thanks to the unique and proprietary tip-jet engine.

"When used for land or maritime operations, Orca provides a decisive intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) capability. It's simple to configure and integrate with a company's technical and operational requirements and is effective for a wide variety of roles and environments."

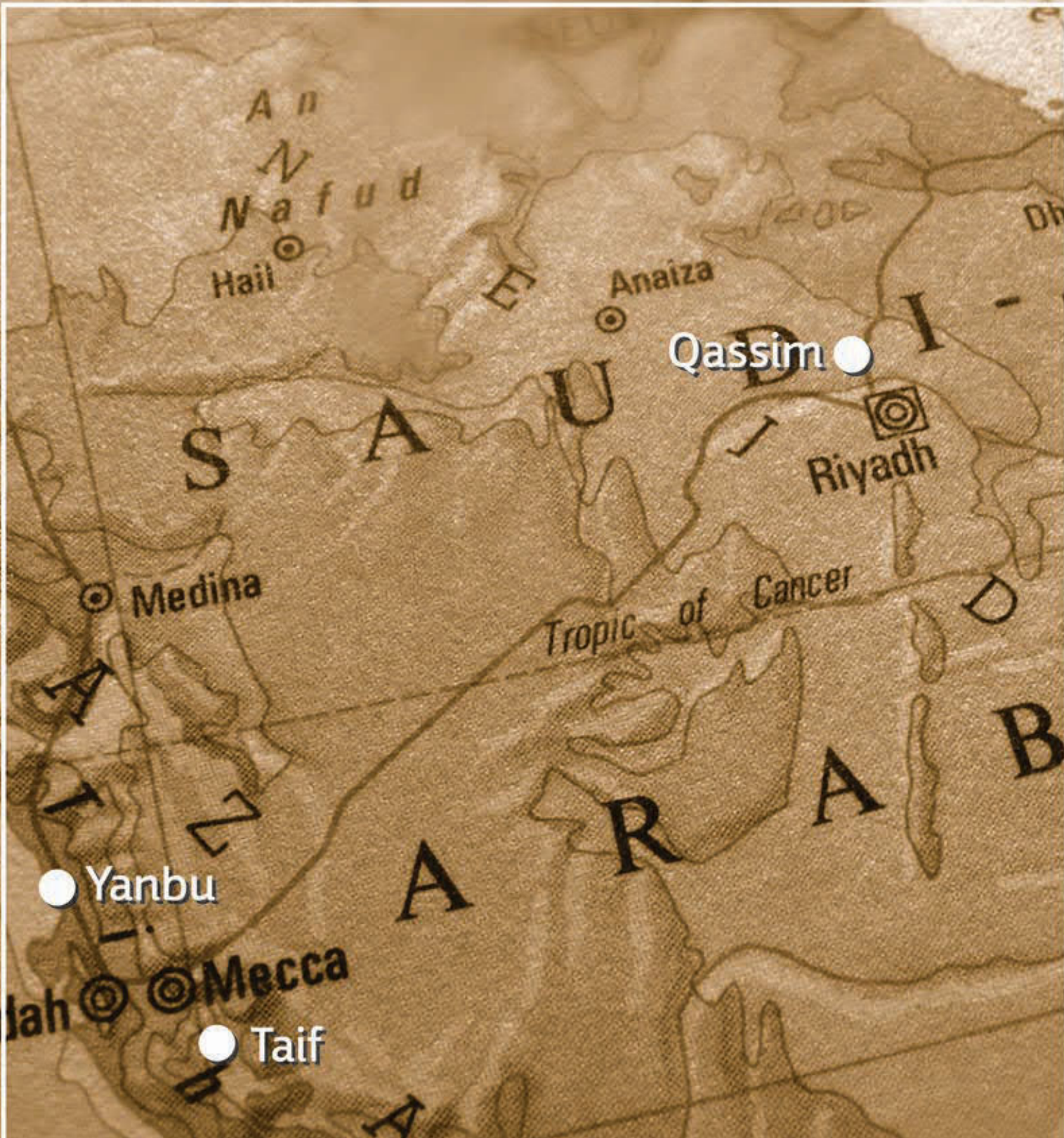


## *Brand new Maximus*

Maximus Air Cargo wanted to change the shape of its branding and stand out from other airlines. And it successfully did that by turning to the creative works of French company Happy Design Studio to provide its fleet with new and exciting livery designs.

"We have been working closely with the Abu Dhabi-based airline with its future branding and successfully achieved a very strong challenge," said Didier Wolff, designer and owner.

Wolff said his inspiration for the designs came from the space shuttle's ceramic black tiles, which evoke "strength, grace and supremacy".



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Eurofighter Typhoon over the Dubai skyline after re-entering the UAE fighter contest.

# Has the UAE deserted Rafale?

*The defence world was rocked at the Dubai Airshow when the UAE seemed to turn its back on the main contender for its fighter aircraft contract –*

**Jon Lake** looks at what happens next.

**A**s the Dubai airshow began, many were expecting an announcement from the UAE Air Force and Air Defence (UEA AF&AD) finally confirming that it would acquire the Dassault Rafale to replace its ageing fleet of Mirage 2000-9s.

All of the signs were that Dassault remained confident that the UAE would eventually select the Rafale to meet its long-standing requirement for a new multi-role fighter to augment its fleet of Block 60 F-16E/F Desert Falcons.

Dassault accordingly dispatched three Rafales to the show and also had an impressive indoor display. The latter featured a large-scale model of its fighter mounted as though flying above the desert sand. Crossed UAE and French national flags stood nearby, looking as though they were ready to be displayed much more prominently in the event of a contract signature.

To the obvious surprise and disappointment of the French contingent it was announced, on the eve of the show, that the UAE had issued a request for proposals (RFP) covering the supply of the Eurofighter Typhoon. Eurofighter GmbH subsequently said it was working hard to deliver a response.

This news dashed French hopes of an immediate announcement confirming the selection of the Rafale, and seemed to indicate that the competition to meet the UEA requirement for a new fighter was “back on”.

It subsequently emerged that the RFP issued to Eurofighter had followed a briefing on the Typhoon (and how it might meet future Emirati fast jet requirements) given on October 17 2011.

The UAE’s interest in the Rafale dates back to the mid-1990s, when the French fighter was shortlisted

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with the Block 60 F-16E/F in September 1996, eventually losing out to the F-16 two years later.

The F-16 was unable to meet all UAE fighter requirements since a number of weapons could not be integrated on the Desert Falcon for largely political reasons. The USA would not, for example, integrate the Black Shaheen cruise missile (a derivative of MBDA's Scalp/Storm Shadow family of missiles) because it feared upsetting the regional balance of power and offending Israeli sensibilities. This made it inevitable that the UAE would seek a non-American fighter to augment the Desert Falcon.

The UAE never drew up a formal requirement for this new fighter and never ran a traditional competitive evaluation. Instead, in June 2008, French president Nicolas Sarkozy announced that the UAE was again showing interest in acquiring the Rafale.

Because no requirement had been issued, and because the UAE had not obviously looked at any alternatives to the Rafale, many French sources presented the UAE Rafale purchase as a 'done deal', and it seemed as though it would only be a matter of time before a contract was signed. If an American-type fighter was politically impossible, then there seemed to be no obvious competitor to the Rafale. In 2008 the Eurofighter Typhoon's air-to-ground capabilities were perceived as being extremely modest, while Saab's Gripen was seen as being a lightweight offering little that the F-16E/F was not already providing.

**Significant obstacles**

In fact, behind-the-scenes, there were significant obstacles and these took a great deal of time and hard negotiation to iron out. This helps to explain the unusually protracted nature of the UAE's fighter procurement. By February 2010 the UEA AF&AD and the French negotiators were reportedly still working together to try to remove the obstacles.

At about this time it was revealed that the UAE was in discussions with Lockheed Martin concerning a possible Emirati buy of the F-35 Joint Strike Fighter. Negotiations with the French resumed in May but by September reports suggested that negotiations were faltering.

One difficulty concerned the UAE's expectation that Dassault would buy back its Mirage 2000-9s for resale. This expectation was soon dashed by the consistent lack of success experienced in trying to offload these fighters.

In September 2010 there was further bad news for the French when the UAE requested information on the F/A-18E/F Super Hornet from Boeing. Then, in October 2010, Sheikh Mohammad Bin Zayed Al-Nahyan, Crown Prince of Abu Dhabi and deputy commander-in-chief of the UAE Armed Forces, was reported to have turned down a proposal to visit Paris for further talks on Rafale.

The following month, reports emerged that two more senior Emirati royals – Foreign Minister Sheikh Abdullah and his brother, national

Rafale was at Dubai in force – but has it done enough to satisfy UAE demands?



security adviser Sheikh Hazza Bin Zayed Al-Nahyan, were expressing dissatisfaction over the Rafale deal.

In December the French were asked to renew the proposal to sell up to 60 Rafales to the UAE, with Sheikh Mohammed apparently acting as the driving force behind this move, since the Rafale purchase was intended to be part of a new global Emirati strategy.

Though Rafale performed brilliantly in recent combat operations over Libya, analysts detected a growing hesitation on the part of the UAE AF&AD to commit to procuring the aircraft and, by August, it was reported that Sheikh Mohammad had no idea about when talks on Rafale would resume.

He did not have to wait long as a French technical delegation arrived in Abu Dhabi in September 2011 tasked, according to the French newspaper *Les Echos*, with wrapping up the final details of its technical and commercial Rafale proposal, which was apparently due for delivery in mid-September.

On September 27 there were higher-level discussions, when the Sheikh met with French president Nicolas Sarkozy in Paris. After this, Sarkozy entrusted French Foreign Minister Alain Juppe with pushing the deal forward, and with selling the ex-UAE Mirages (or more Rafales) to the new Libyan regime.

But, at around the same time, *Arabian Aerospace* started to hear reports that efforts in the City of London to provide funding for the deal had been dramatically scaled back, and the chances of a contract signature at Dubai Airshow receded rapidly.

The announcement of the RFP to Eurofighter clearly came as a shock to Dassault and the French government, and there was a delay before the French side released a predictable statement to the effect that this was just a negotiating tactic, aimed at forcing a better deal.

This was not evidence that the Rafale option had been abandoned, the French side averred, and it was no more than the Emiratis usually did during

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CONTINUED FROM PAGE 36

negotiations, asking for new proposals from competing bidders after their meetings with Dassault. Even if this was not simply a crude negotiating tactic, it was said, it was merely a sensible move to briefly study the other major options available.

During the show Boeing weighed in to contradict that idea. Paul Oliver, Boeing's vice president for international business development in the Middle East and Africa, said: "I think that they're seriously looking at other options."

His colleague, Mike Coggins, added: "The sudden emergence of Eurofighter proves that there is no 'slam-dunk' for the French."

Boeing confirmed it had given a number of classified briefings on both F/A-18E/F Super Hornet and the F-15 Eagle over the past year and that it had been asked to give 'quotes' on both aircraft.

Boeing's contacts with the UAE had begun in September 2010, when the Emiratis requested technical information on the Boeing F/A-18E/F Super Hornet. Subsequently, UAE interest had widened to include the F-15SE Silent Eagle, which became the focus of a broader drive for strategic co-operation between the UAE and the USA.

It became increasingly clear that the UAE's expressions of interest in other fighters had been very much more serious than had been assumed at the time, and that they had involved detailed, enduring and protracted negotiations. This serious level of interest had continued even after Dassault was asked to renew its Rafale offer.

As well as the F/A-18E/F and F-15SE, it became clear that the UAE had also been in

negotiation with Lockheed Martin for the supply of more F-16E/F Desert Falcons, and had been showing growing interest in the F-35 Joint Strike Fighter (JSF) since before July 2011.

Most analysts agree that the USA is unlikely to agree to supply the F-35 to the UAE in the near term, not least because to do so would be electorally damaging to president Barack Obama as he runs for a second term in office, with the powerful pro-Israeli lobby likely to react very badly to any effort to sell fifth generation fighters to any Arab air arm.

#### Commitment shaken

It was clear that the UAE's commitment to the Rafale had been shaken, even before Sheikh Mohammed used the occasion of his visit to the Dubai Airshow to praise Sarkozy, who, he said, could not have done more diplomatically or politically to secure the Rafale deal, and who had ensured that the Dassault Rafale was sustained at "the forefront of our considerations".

But, at the same time, he launched a scathing attack on Dassault which, he said, seemed "regrettably unaware that all the diplomatic and political will in the world cannot overcome uncompetitive and unworkable commercial terms".

But, while Sheikh Mohammad has made great efforts to praise the French president and government, and though he may still want to maintain the contacts with the French side, many believe that the UEA AF&AD is increasingly focusing on other alternatives.

The UAE's apparent rethink may have been prompted by more than dissatisfaction with Dassault's high price tag for the aircraft and its

continued inability to find a buyer for the UAE's existing Mirage fleet.

It has always been reported that the UAE requires a more advanced aircraft than the current Armée de l'Air model of the Rafale, and that it has been unhappy with the relatively low-powered engines, and the continued absence of certain systems – including a helmet-mounted sight and a dual channel electro-optical/FLIR package, as well as the aircraft's reliance on the Damocles laser designator pod.

After its experience with the Block 60 F-16, the UAE may be unwilling to act as the guinea pig for a new and untried 'UAE unique' Rafale version, let alone to fund the required improvements.

The value of what may have been Rafale's 'unique selling point', of being a non-American long-range tactical fighter capable of carrying heavy long-range weapons, has also been eroded.

The USA has reportedly undertaken to integrate the SLAM-ER missile and BLU-109 bunker-busting bombs (already being sold to the UAE in their hundreds!) on any fighter selected by the UAE, and may also have quietly assented to integrate the Black Shaheen and/or its replacement, too. The Typhoon is finally starting to look like a more mature aircraft, and the P1EA enhancement (expected in mid-2012) will provide the first step in a more credible air-to-ground capability roadmap.

#### Large fleet

The UAE already has a large fleet of medium weight, air-to-ground biased multi-role tactical fighters in the form of the Lockheed Martin F-16E/F Desert Falcon, and there are suspicions that the UAE AF&AD now realise that the Rafale and Super Hornet would replicate many of the same capabilities.

By contrast, the F-15 or Typhoon represent quite a different type of aircraft, and one that would complement the existing fleet of Block 60 F-16s. The F-15 Eagle and Eurofighter Typhoon offer significantly better kinematics and superior beyond visual range (BVR) air combat capabilities, and would provide a real increase in air dominance capabilities, which may be of vital importance in the face of a growing threat from Iran, and with neighbouring air forces recapitalizing their own air defence and air dominance capabilities.

As the Typhoon gains credibility in Saudi service and with the aircraft on the verge of being ordered by Oman, and being evaluated by Qatar and Kuwait, the Eurofighter is looking as though it could become the GCC nations' standard fighter, offering significant commonality and interoperability advantages.

BAE Systems was reported to have offered a lower price than that of the Rafale, and a more compelling industrial plan, with real technology transfer and the possibility of some local participation, perhaps including final assembly of the aircraft. Finally, the UK government may be willing to accept payment for a part of the deal through oil contracts.



Boeing has been asked for prices for the F-15 (shown flying at the Dubai show) as well as the F-18 as an option.





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# Saudi Typhoon



*Saudi Arabia has faced challenges introducing the Eurofighter Typhoon into service, not least in establishing local production – which has yet to start. But, as **Jon Lake** reports, despite this the Royal Saudi Air Force is pushing hard to adopt new capabilities and is believed to have been driving the pace of the development of new air-to-ground capabilities for the tranche 2 aeroplane.*

**M**any analysts believe that the pace of development for the phase 1 enhanced (P1E) programme of the Saudi Arabian Typhoons has been more rapid than might have been expected in the light of budgetary pressures among the four partner nations.

One possible explanation could be Saudi funding. But even if Saudi Arabia is not actually bankrolling P1E, there is no doubt that the kingdom is at least closely following, and perhaps enthusiastically supporting, the latest developments.

In last year's BAE Systems annual report, it was revealed that Saudi Arabia intended that at least the final 24 of the 72 Eurofighter Typhoons it has on order would be delivered with provision to be upgraded to full tranche 3 standards.

The tranche 3 Typhoon will have full air-to-ground capability, including the integration of weapons like the MBDA Storm Shadow cruise missile and the smaller Brimstone PGM, as well as an advanced AESA radar, providing expanded electronic attack capabilities.

The kingdom seems to be placing greater emphasis on Typhoon's air-to-ground capabilities, both for the long-term and in the more immediate future.

Writing in the *Washington Post*, defence commentator David Ignatius suggested that, as part of a wider more assertive policy, Saudi Arabia was planning to double its armed forces over the next 10 years, while simultaneously modernising many capabilities. Ignatius said the Royal Saudi Air Force (RSAF) would introduce

between 450 and 500 new aircraft as part of this process, including 84 F-15SA Silent Eagles and a further 72 Typhoons. Likely timescales mean that any second batch of Typhoons would be delivered to tranche 3 standards.

Previously it had been thought that the Saudis would buy one type or the other and not both, but it now seems that tranche 3 Typhoons will provide the offensive backbone of the air force augmented by new and refurbished F-15s and, indeed, by the surviving Tornados upgraded under the TSP programme.

The advantage of the Typhoon to the Saudis is that it is more likely that specific weapons and defensive capabilities would be cleared and integrated, since Israeli pressure on the USA has historically limited weapons integration on American-built aircraft supplied to Arab air forces.

Prince Sultan's stated intent for Saudi Arabia to have "200-plus" Typhoons in RSAF service by 2015 no longer looks fanciful.

But tranche 3 is still some way off and all 24 of the Typhoons now delivered to Saudi Arabia are from tranche 2. To meet Saudi timescales, these first 24 RSAF Typhoons (18 single-seat and six trainers) were aircraft that were taking shape on the production line for the British Royal Air Force, and that were diverted to meet Saudi requirements.

Production was then to have switched to a new facility built by BAE Systems at King Abdulaziz airbase at Dhahran. Work on this facility (which was to

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# storms ahead

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incorporate a Typhoon technical zone for local production) began with the ceremonial laying of a foundation stone by defence and aviation minister Prince Sultan in March 2008. The facility was supposed to have been completed in August 2009, with work beginning in the second quarter of 2010 and the first locally-assembled Typhoon due to be completed in 2011. But the in-kingdom industrial programme (IKIP) failed to materialise.

It now seems likely the remaining 48 Typhoon aircraft ordered by Saudi Arabia will be built in Britain, though an in-kingdom maintenance and upgrade facility may still be established. Production of these 48 aircraft seems to have stalled while contract details are renegotiated. Local production was to have been a vital feature of 'Project Salam' aiming to kick-start an indigenous Saudi aerospace and defence industry with thousands of high-value jobs. Losing this element of the programme is a bitter blow and the kingdom is believed to be working hard to extract concessions from the UK to "make up" for the loss.

It is believed that the Saudis are keen for the remaining aircraft in its order to have the best possible air-to-ground capabilities.

**Cleared and underwritten**

Historically the RSAF has always tended to shadow the RAF and USAF when bringing new types and new capabilities into service. With its UK-supplied combat aircraft, any new functionality has first been cleared and underwritten by the UK MoD and QinetiQ before being released to the RSAF. But Saudi Arabia is becoming more confident and proactive and has aspirations to become its own engineering and release authority.

The RSAF, therefore, started air-to-air gunnery (something the RAF still has not done) and began mounting quantitative risk assessment (QRA) operations with its tranche 2 aircraft before the RAF.

Nor did the Saudis slavishly follow the RAF's choice of air-to-air weapons. Though RSAF Typhoons do use the Raytheon AIM-120C5 AMRAAM for BVR air combat engagements, for short-range use it selected the Diehl BGT Defence IRIS-T short-range air-to-air missile, rather than the MBDA ASRAAM favoured by the UK.

But the Saudis were keen to follow (or match) the partner nations in their drive for expanded air-to-ground capabilities on phase 1 enhancement, part A (P1EA). It was reported that when the RSAF was briefed P1EA its representatives simply said: "That's great! When can we have it?"

*Arabian Aerospace* has learned that the RSAF has now become the first Typhoon operator to start better ground operations using tranche 2 aircraft – which will not gain a full air-to-ground capability until the P1EA is released in mid 2012.

The RSAF's No3 Squadron began air-to-



ground operations in December 2011 as part of a phased work-up, which will culminate in the full exploitation of P1EA when it becomes available.

Since the 24 Typhoons delivered to Saudi Arabia all serve with No10 Squadron, the RSAF's Typhoon OEU, and No3 Squadron, the Saudi Typhoon operational conversion/training unit, the early part of the phased work-up is believed to be primarily aimed at building up a cadre of air-to-ground weapons instructors (QWIs) and evaluator pilots, whose skills will be 'grown' as the aircraft's capabilities are expanded.

**Simple software load**

Because the tranche 2 Typhoon introduced new computer hardware, the decision was taken to adopt a simple software load (known as SRP 5.0/5.1) based on the tranche 1 SRP 4.0 software. The tranche 1 software has since moved on, with SRP 4.2 providing the austere air-to-ground capability, and with SRP 4.3 and a series of post-main development contract software 'drops' providing further refinements and enhancements.

This means that tranche 1 aircraft have features, functionalities and capabilities that tranche 2 aircraft do not. Most obviously the tranche 2 jets do not have the austere air-to-ground capability provided under CP 193 (change proposal 193) and recently combat-proven in Libya.

Tranche 2 aircraft can, of course, carry and drop

a range of air-to-ground weapons, including the UK Paveway II laser-guided bomb and GBU-16, but they are not cleared for strafe (using the internal 27mm Mauser cannon in the air-to-surface role), nor do they have a laser designator pod.

However, with support from off-board designators (either ground-based or airborne) the tranche 2 Typhoon can already employ laser-guided bombs and No3 Squadron is expected to work with Tornados carrying the French Damocles laser designation pod. The tranche 2 aircraft, thus, already has an air-to-surface capability that is better than merely 'rudimentary'.

With the anticipated release of P1EA this summer there is little need for any interim air-to-ground capability on the tranche 2 aircraft and, indeed, any such programme could only have delayed P1EA and other important on-going programmes, including P1EB, Meteor integration, and SRP 14.

P1EA is very close to service. Typhoons have now carried out a significant number of full avionic functional releases ('avionics integrated releases') of the Paveway IV, and have used the Litening 3 LDP to guide them. The full end-to-end autonomous designation capability will be tested during the first quarter of 2012.

Service aircrew from the RAF's No17 Squadron have been involved in these trials, and have flown the new software standard extensively in the rig, and in instrumented series production aircraft.

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*One group, one vision, your satisfaction*

*One of the success stories of last year's air operations over Libya was MBDA's Brimstone missile, especially in its dual mode form. Jon Lake looks at how the hardware performed.*

# Brimstone a sure-fire

**T**hough designed at the end of the Cold War as an anti-tank weapon, optimised to stop large numbers of Soviet tanks on the North German plain, MBDA's Brimstone missile has proved to be an extremely effective tool in modern, more asymmetric conflicts.

Its combination of almost surgical precision and small warhead size confers great lethality against the desired target, while imposing remarkably little risk of collateral damage.

Indeed, one of the most memorable images from the Libyan operation was a video of a Brimstone taking out a rocket launcher mounted on the back of a Toyota land cruiser with the operator, who had been standing only a few feet from the vehicle, clearly visible running away after the blast.

In Afghanistan, Brimstone proved effective against moving motorcycles, individual Taliban sheltering in cover, and with enough accuracy to be able to fly through the rear windscreen of a pick-up truck.

The original Brimstone used an airframe derived from the US AGM-114F Hellfire missile, but with an all-new millimetric wave radar seeker that could autonomously search for targets, detecting and recognising priority goals and being able to distinguish between valid and non-valid targets, or to search for them only in a particular area.

The weapon was fitted with a tandem shaped charge warhead, allowing it to destroy the most modern armoured vehicle targets. A development and production contract was awarded in November 1996 and the weapon entered service with the RAF Tornado force in March 2005.

The so-called dual mode Brimstone (DMB) or

dual mode seeker Brimstone (DMS Brimstone) was developed by MBDA in response to an RAF urgent operational requirement (UOR) issued in 2007. This called for a new precision-guided, low collateral damage weapon with a man-in-the-loop capability that would be able to defeat a wide range of static and fast moving targets, even under restrictive rules of engagement (ROE).

MBDA realised that the requirement could be met through an upgrade to the existing Brimstone capability by simply modifying the existing seeker – adding a sensitive semi-active laser (SAL) capability – while also adding revised software. This would allow the missile to operate in single mode or in a dual SAL/RF guidance mode, with all options selectable from the cockpit of the launch aircraft. The RAF had large stocks of the standard Brimstone missile left over from the original production contract.

DMS Brimstone proved a popular and highly effective weapon in both Afghanistan and Libya, and the original 'legacy' Brimstone also made its 'used in combat' debut in Libya. On September 15, a pair of No IX Squadron Tornados made an unprecedented salvo, firing of 24 Brimstone missiles against armoured vehicles near Sebha. The first aircraft salvoed six missiles, then the second launched all 12, before the lead aircraft fired six more.

Brimstone remained the RAF's weapon of choice in Libya and its success has reportedly been sufficient to attract the interest of the UK's two main allies in the conflict, the USA and France.

Though the French already operate the highly

regarded W-AASM, which offers great precision, the weapon weighs almost five times as much as the Brimstone and it is ill-suited for use against urban targets where there is a real need to avoid collateral damage. It also does not have Brimstone's ability to hit moving targets.

Reported US interest in Brimstone is superficially more puzzling, as the existing joint air-to-ground missile (JAGM) programme already promises to deliver a similar weapon to US forces.

A new-build Brimstone derivative has been selected to meet the UK's selective precision effects at range (SPEAR) capability 2 requirement and MBDA received a demonstration and manufacture (D&M) contract in March 2010. The new weapon will offer significantly improved performance and will introduce a new insensitive munition (IM) warhead and rocket motor, as well as a modular airframe.

The new IM subsystems will enhance the missile's air carriage life and reduce logistics/support requirements, while the new airframe will give increased air carriage life, allow continued spiral development, facilitate the future insertion of new technologies and enhance compatibility with future platforms.



# success...

Tornado GR4 showed the effectiveness of the Brimstone in the Libyan mission.



## Picture looks clear for UAE reconnaissance pod

Though the UAE closed down its US-based F-16 training operation in October 2010, the Emiratis continue to maintain a small fleet of Block 60 F-16s in the USA for testing new systems, weapons and capabilities.

These aircraft, normally based at Lockheed Martin's Fort Worth plant, have been used recently for clearing new weapons.

In late October they were seen testing the new DB-110 reconnaissance pod. The UAE announced at the 2011 IDEX show that an AED 297 million contract had been placed for the pod.

The DB-110 dual-band EO and IR sensor has a 110in focal length and provides an imaging capability for long, medium, and short stand-off ranges, including oblique and vertical imaging, in a single sensor package.

The sensor was derived from U-2's senior year electro-optical reconnaissance system (SYERS), which had itself been developed by what was then Litton's Itek division in the early 1990s, and which was claimed to be the world's first dual-band, real-time reconnaissance system, exploiting the emerging ability to record photo-quality digital images and transmit them to the user in near-real-time via a high bandwidth data link, with the ability to view and edit imagery on the cockpit displays.

Itek was subsequently acquired by Hughes which was, in turn, purchased by Raytheon, which then sold off the division to BF Goodrich.

The new pod was originally purpose-built to meet an RAF requirement for a compact digital long-range oblique photography (LOROP) system that could fit in a recce pod carried by the Tornado. The resulting reconnaissance airborne pod for Tornado (RAPTOR) was introduced into RAF service in 2002.

The Tornado RAPTOR pod was then used as the basis of a similar reconnaissance pod designed for carriage by fighter-sized aircraft like the F-16 and the F/A-18. This, known simply as the DB-110 pod, successfully completed flight-testing as part of the F-16 Poland peace sky programme in January 2007. Since then, the pod has become one of the options offered to all new F-16 export customers, and is in service or being supplied to Egypt, Greece, Morocco, Pakistan and Poland, while BAE's rival F-9120 advanced airborne reconnaissance systems (AARS) pod has been delivered only to the Royal Air Force of Oman.

The same basic pod is also used by OP-3C Orion aircraft of the Japanese Maritime Self Defense Force (JMSDF), and has been demonstrated on the MQ-9A Reaper UAV, demonstrating the DB-110 system's utility on unmanned reconnaissance aircraft.

The UAE contract covers the supply of six DB-110 reconnaissance pods and three ground-based, image exploitation systems for the Block 60 F-16E/Fs used by the UAE Air Force and Air Defence. Work will be performed by Goodrich's ISR Systems facilities in the USA and the UK.



# Talon ready to show its claws around the world

The Talon LGR completed a first guided test flight in September 2009, which saw the system hit a 1.5m (4.9ft) square target during both tests, exceeding accuracy requirements at ranges of 3.7km and 5km (2.3 and 3.1 statute miles).

Ground-based guided flight tests were conducted in April 2010 – and during the most recent AH-64D testing the system “met or exceeded all Raytheon test objectives”, which included firing from hovering and moving platforms and engaging targets from short (1.2 km/ 0.74 miles) to long (6.0km/ 3.7 miles) ranges.

Seven direct hits were achieved during testing, including the first ever air-launched direct hit on a short-range 1,200m target by a laser-guided rocket munition of its type.

Talon LGR is a semi-active laser guidance and control kit that connects directly to the front of a 2.75in unguided rocket, bringing almost pinpoint precision to a weapons class that Raytheon believes has been largely overlooked until now.

The Talon LGR is fully compatible with existing airborne and ground laser designators and requires no modifications to the rocket launcher, and has been designed to fill the critical operational capability gap between unguided rockets and guided heavy anti-tank missiles.

## Capabilities portfolio

“Together with EAI we collaboratively identified a gap within the capabilities portfolio, especially for rotary wing platforms,” said Patrick Mate, capture manager at Raytheon Missile Systems.

“Between the Hellfire class weapons and unguided rockets currently employed on aviation platforms today, you’re either looking at much bigger weapons with weapon-to-target overmatch – which is very costly – or less precision. We developed Talon LGR to fill this gap and deliver close to pinpoint precision with a little less bang than Hellfire. It gives warfighters extended capabilities when it comes to close-engagement weapons.”

The lightweight and rapidly deployable Talon LGR system is designed to minimise collateral damage within dense and urban environment warfare, providing warfighters with a lethal weapon effective against ‘soft to lightly armoured’ targets, with a manoeuvrable guidance system compatible with existing 2.75 in unguided rockets currently in use around the world.

The system also offers a high stand-off range to improve platform survivability.

Having grown out of the now defunct US Department of Defense (DOD) advanced precision kill weapon system II (APKWS II) programme, Raytheon has worked closely with the US DOD and the army to help shape requirements for a precision 2.75in rocket over the past 15 years, as recognised during Operation Desert Storm.

*In September Raytheon and Emirates Advanced Investments (EAI) conducted testing for their jointly developed Talon laser-guided rocket (LGR) system on the AH-64D Apache Longbow helicopter, bringing the flight test programme to a successful close. The system is now fully qualified for the AH-64D and ready for production contracts.*  
**Claire Athorp reports.**

Following the cancellation of APKWS II, Raytheon and EAI further developed and qualified the Talon LGR in order to bring it to the US domestic and international market.

Mate said the co-operative had responded to a number of requests for information (RFIs) and requests for pricing data from potential customers, and that it is currently looking at expanding the Talon LGR to other platforms, both rotary and fixed-wing, including the Hawker Beechcraft AT-6.

During the APKWS II programme the system exceeded accuracy requirements when tested from the OH-58D Kiowa Warrior for the US Army.

Being certified on the AH-64D Apache will potentially open doors within the growing Middle East operator market, including the UAE, Kuwait and Egypt.

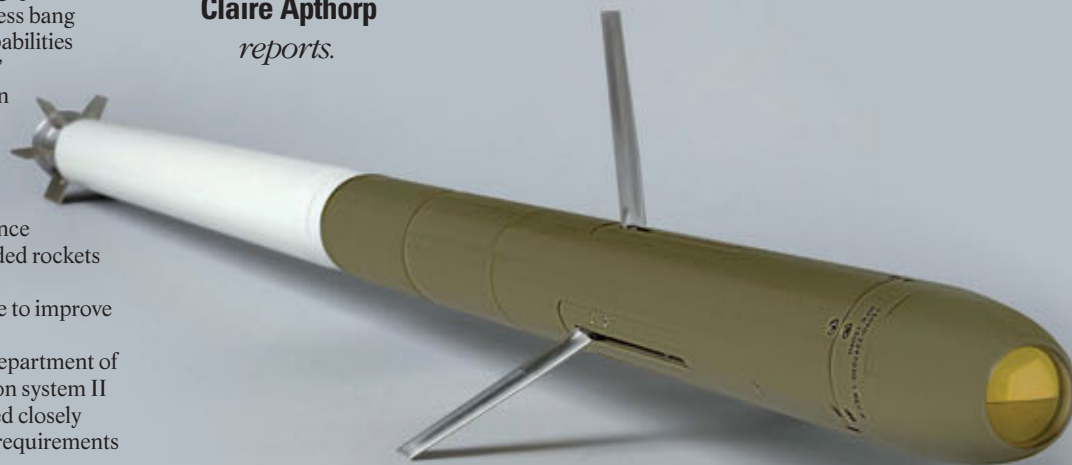
## Large worldwide market

“We believe there is a large worldwide market for this weapon system,” Mate said. “There are lots of weapons in this class but we believe Talon is the only one that can be quickly integrated into existing platforms with no hardware or software modifications needed.”

Low integration and acquisition costs will also appeal to armed forces feeling the pressure of defence budget contraction, something that Raytheon is keen to address.

“I think all of us can see the writing on the wall with global economic crisis and declining budgets,” Mate said. “Warfighters have become much smarter about choosing their weapon prior to engaging and also taking into account the future of what their potential needs are, and Talon LGR matches up well with these requirements.”

Raytheon and EAI are now focused on developing the details of full-rate production for the system and finalising production contracts. According to Raytheon the system will be available for direct commercial sales to international allies around the world.







# Poseidon looks set for a big adventure

**Dennis Muilenburg:**  
 “There are certainly very relevant submarine threats in the region.”

*With the ongoing threat of submarine activities across the Gulf, GCC states are eyeing the latest militarised version of the Boeing 737.*  
**Alan Dron**  
*reports.*

**B**oeing is pushing ahead with development of its P-8 Poseidon anti-submarine aircraft. A major redevelopment of the Boeing 737 airliner, it is due to achieve initial operational capability in 2013.

The P-8I (for ‘international’) scored its first export success with an order for eight from India (plus four options) to replace its elderly Russian-built anti-submarine aircraft and Boeing anticipates further international sales.

Gulf air forces have few maritime patrol assets and Boeing Defence Space and Security (BDS) president and CEO Dennis Muilenburg admitted there had been interest in the P-8I from the region. He declined to name specific nations but added: “Our customers in the Middle East face a number of very important security threats that continue to grow in significance. There are certainly very relevant submarine threats in the region.”

This is an obvious reference to Iran, which has a force of three Russian-built diesel-electric boats, known by their NATO Kilo-class classification. Kilos are generally regarded as effective vessels, although the type’s banks of batteries are known to have suffered in the high ambient temperatures of the Gulf and the shallowness of the waterway poses some problems in their deployment. Iran also has four midget submarines.

The fact remains that it would take very few submarines to close the strategic Straits of Hormuz to merchant vessels simply by threatening hostile action. How long any hostile submarines or surface vessels would survive what would surely be a decisive response by the US Navy and its allies is an interesting debating point.

Boeing sees “around 100” potential international sales of the P-8I, with the company hoping to replace fleets of the aircraft’s predecessor, the Lockheed Martin P-3 Orion, around the world. “We think the next customer will be Australia,” said Chuck Dubando, vice-president on the P-8 programme.

Canberra signed an MoU with the US Navy about a year ago and is collaborating on the increment 2 version of the aircraft, which is due to enter service around 2015 and will have additional capabilities, such as the ability to launch anti-submarine weapons

from high altitude and an automatic identification system – basically a transponder for merchant vessels.

Boeing submitted a proposal for the P-8I to Saudi Arabia earlier this year but declines to give further details.

The aircraft is designed to fly 1,200nm (2,220km) from its base, loiter at low or medium altitudes for four hours then return without the need for air-to-air refuelling. If airborne tanking does take place, the crew of the P-8 could be in for a 20-hour stint aloft, although the fuselage is large enough to accommodate resting or replacement crew members, especially as it contains only five workstations.

When the idea of using a 737 variant as an ASW aircraft was originally mooted, doubts were raised as to whether an aircraft based on an airliner that spent most of its life cruising at high altitude would be able to cope with manoeuvring in the denser air just above sea level.

## Substantial redesign

Boeing is at pains to stress that the aircraft is not so much a modification as a substantial re-design, with many structural components twice as thick as those on the 737 to take account of the more turbulent conditions the aircraft will encounter at low levels. However, it believes that it will spend less of its service life close to the waves than its predecessor.

“You don’t need to fly it like a P-3,” said Dubando. “You don’t need to be at 2-300 ft, although it will happily do that.”

More of its work will be carried out at altitude, particularly as it will have much more of an intelligence, surveillance and reconnaissance role than the P-3 – something that can be guessed at from the 100-plus aeriels scattered over its structure.

“We’re talking to several international customers for the intelligence version with a variety of sensors,” said Dubando.

The aircraft’s aft ventral weapons bay will be able to carry up to five Mark 54 anti-submarine torpedoes, while four under-wing hardpoints will be able to carry either Boeing’s Harpoon anti-ship missiles or SLAM ER precision land attack weapons. The aircraft will also be able to carry chaff and flares.

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Ghaith Al Ghaith: "Our forefathers really visualised the future."



# All smiles at flydubai

*Low-cost carrier flydubai is going from strength to strength. Alan Peaford meets CEO Ghaith Al Ghaith to talk about the airline's innovative approach.*

**G**haith Al Ghaith has a broad smile and an infectious laugh. "Welcome, welcome," he says as we sit together on a couple of chairs amid the hustle and bustle of Dubai Airport Expo.

Al Ghaith has the demeanour of a man who has all the time in the world to stop and talk. But, in fact, every minute he is planning new ways to move his start-up airline into a new space of a world-class carrier.

Echoing the impact its big sister – Emirates – had made on the aviation world, flydubai shocked the industry at Farnborough Airshow in 2008 with the largest-ever order by a start-up with a shock deal for 50 Boeing 737 aircraft.

Like the Emirates deals before, flydubai faced a wave of cynicism that the orders would ever be delivered and that the moderately immature regional market in the Gulf could sustain another low-cost carrier given the head start Sharjah's Air Arabia and Kuwait's Al Jazeera had already made.

Being reminded of this scepticism brings another smile from the CEO. "Sure enough, three years ago we started with nothing, but this is the UAE – flydubai would not have been as successful as it is, or would not have been

Continued  
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## CONTINUED FROM PAGE 49

successful at all, were it not for the fortunate position that we are in by operating in this country.

“Our forefathers really visualised the future for us and acted to deliver such a beautiful country — very hospitable, very attractive — plus the vision for aviation.

“His late Highness, God bless him, Sheikh Rashid bin Saeed al-Maktoum, worked very hard to start Dubai International Airport when no airport existed here. If he had not had that vision and power and drive to start this airport, we would not be where we are now as the largest airport in the region. So we owe a lot to that belief and drive.”

Of the 50 aircraft on order, the first 21 have joined the fleet. The latest, which arrived in Dubai at the end of 2011, came with a full fanfare from manufacturer Boeing as it fortuitously turned out to be the 7000th 737 to roll off the production line at the company’s factory near Seattle.

**Important milestone**

“We were proud to be a part of this important milestone for the 737,” said Al Ghaith. “With its continuous innovations, the Next-Generation 737 brings the right combination of operational and environmental performance to address the requirements of our markets. It is a major cornerstone to our modern, fuel-efficient and economical portfolio of commercial jets.”

Al Ghaith graduated with a business administration degree from the University of Arizona and returned to Dubai to become a management trainee with fledgling Emirates Airline.

He grew with the airline and was appointed deputy passenger sales manager UAE in June 1988; deputy manager overseas development & marketing in August 1989; area manager UK and Ireland in 1991; and general manager commercial operations Europe and North America in 1993.

He followed this with a spell as senior manager for the Middle East, Africa and CIS commercial operations before being appointed by chairman Sheikh Ahmed bin Saeed al Maktoum as the

**“Not only is it unusual for a low-cost carrier to have a cargo division, it is also rare for an airline as young as flydubai. But it is initiatives such as this that set us apart and ensure we continue to lead the way in low-cost aviation, while also supporting Dubai’s position as a logistics hub.”**

executive vice-president for the global commercial operations.

When the idea of a low-cost carrier to compete against the Sharjah and Kuwait operations came up, Al Ghaith — working with Peter Hill, the recent CEO of Oman Air and formerly of SriLankan and Emirates — was tasked with setting up the airline in an incredibly short timeframe.

“Everything we have done has been done to plan,” he said. “We said we’ll make money in 2012. We are still on course to make money.”

The airline is breaking the mould among the low-cost carriers. The management team had looked closely at the way the market worked and the Southwest Airlines model from the US was the one that impressed them most — so much so that when former Southwest pilot and flight operations director Kenneth Gile was available he was recruited to the new Dubai airline as chief operating officer.

But instead of just aping the US success story, Al Ghaith and his team are doing very different things.

In December, the airline announced it would be moving into the cargo business with a new division to support its goal of making the

transportation of goods and people across the region via Dubai simpler and more cost-efficient.

Thus, flydubai Cargo, which launched on January 1 this year, will transport goods to all of the low-cost carrier’s 46 destinations, as well as additional cities in India and Pakistan.

Cargo, including perishable items, textiles, electronics, couriered items, mail, pharmaceuticals and general cargo, can originate from any point on the flydubai network or beyond.

Al Ghaith, said: “Not only is it unusual for a low-cost carrier to have a cargo division, it is also rare for an airline as young as flydubai. But it is initiatives such as this that set us apart and ensure we continue to lead the way in low-cost aviation, while also supporting Dubai’s position as a logistics hub.”

**Auto parts**

With 60% of all shipments expected to be transit cargo, flydubai has signed interline agreements with other airlines when moving items outside its network. It expects to carry 1,500 tonnes of cargo each month on its Boeing 737-800 NG aircraft, which is equal to 15 Boeing 777 freighters. In particular demand are auto parts travelling from Dubai to countries in the former CIS, handicrafts from Kathmandu and fruit and vegetables around the GCC countries.

“We have an exemplary on-time record and transporting cargo will be no different. It will also be fully security screened before being loaded on to the aircraft, ensuring safe flights for all our passengers and crew,” Al Ghaith said.

Meanwhile, in line with the IATA e-freight initiative, all shipments will be transported with electronic documents rather than paper air waybills. The move is estimated to save \$1.2 billion across the industry.

“Earlier this year we created our own engineering and maintenance division, and cargo is another example of our rapid expansion,” Al Ghaith said.

The airline had already demonstrated its desire to be first to

Continued  
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Lumexis Congratulates flydubai CEO Ghaith al Ghaith  
On His Leadership and Accomplishments in Aviation,  
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The new interior design for flydubai.



CONTINUED FROM PAGE 50

market with ideas or innovations. It was the launch customer for Boeing's new 737NG Sky Interior delivered in October 2010, and the Lumexis "fibre to the screen" (FTTS) in-flight entertainment system.

There has been speculation that flydubai could also be an early customer for Boeing's 737MAX programme – the improved narrow-body which competes with the Airbus Neo.

Al Ghaith is playing his cards close to his chest.

"We are planning to make an order but we are not ready to make a decision yet, especially because the new Boeing 737 MAX and Airbus A320neo just came into the market," he said.

#### Evaluating the aircraft

"We are currently in discussions. We are evaluating the aircraft and we will be taking a decision in the very near future; in a year or so," he said, adding it was "difficult" to estimate the number of planes to be ordered.

Training has also risen up the flydubai agenda. It is to be the anchor customer for a new airline-training centre operated by the CAE-Emirates joint venture ECFT.

The new centre is set to open in the third quarter of 2012 in Dubai's world-class commercial park, Dubai Silicon Oasis, and flydubai has signed a multi-year exclusive training services agreement with ECFT for Boeing 737NG training.

"Today's increasingly competitive market requires airlines to achieve maximum efficiency and effectiveness from every area of operations, including training. At the same time, safety is paramount to passenger confidence and growth," said Gile.

"We have trained with ECFT since our inception and we are very well satisfied with the

**"By outsourcing the maintenance and components support and management to ADAT, we will benefit from reduced maintenance costs and increased capital liquidity, as a result of having to hold less spare parts. This will create a saving of \$35 million for the airline over the next five years."**

exemplary service we receive and the quality of the training programmes."

ECFT will provide comprehensive initial type-rating and recurrent training solutions for flydubai line pilots and cadets, including 'wet' training with ECFT instructors and 'dry' training, in which flydubai instructors use ECFT simulators and other training tools.

The carrier has announced plans to recruit more than 400 pilots over the next four years to meet the needs of its growing fleet and serve its rapidly expanding route network.

With its rapidly growing fleet, flydubai has also been turning its attention to maintenance.

While at the Dubai Airshow, many thought that flydubai could be announcing new aircraft orders – but in fact it was the world of MRO and spares support that was order of the day.

It signed two new fleet MRO contracts with Abu Dhabi Aircraft Technologies (ADAT), part of the Mubadala Aerospace MRO network, with a combined value of \$54 million.

Al Ghaith said: "I was really proud to be able to sign this contract with a UAE company. Mubadala has been doing a lot of great things for the UAE and it is good to work with them."

#### Entire fleet

The primary agreement, for integrated component support (ICS), covers the repair management and forward component exchange and will see ADAT provide total material support to flydubai's entire fleet.

The contract allows flydubai to budget its maintenance spend in advance, while having spare parts readily available.

"By outsourcing the maintenance and components support and management to ADAT, we will benefit from reduced maintenance costs and increased capital liquidity, as a result of having to hold less spare parts. This will create a saving of \$35 million for the airline over the next five years," Al Ghaith said.

The power on the ground also was a point of attention as Al Ghaith also signed a \$20 million contract with Honeywell for the maintenance support on the carrier's auxiliary power units (APUs) installed throughout the fleet.

Honeywell's 131-9B APU supplies auxiliary power to each of flydubai's Boeing 737-800 NG aircraft for engine start, as well as to power on-board air conditioning and pre-engine start-up.

With new routes starting to Iraq, flydubai's house is very much in order and with targets looking achievable Al-Ghaith could indeed, be smiling all the way to the bank.



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# Around the world in eighty ways...

**Marcelle  
Nethersole**

*reports on a major strategic investment by UAE national carrier Etihad Airways.*

**E**tihad Airways has increased its stake in airberlin – Europe’s sixth largest airline – to 29.21%, to become the largest single shareholder.

The surprise move, announced in December, means Etihad now offers more destinations than any other Gulf airline through its German connections.

The move connects the airlines’ extensive networks and frequent flyer programmes to offer travellers 239 destinations across 77 countries.

The agreement means Etihad Airways now offers a route network of more than 80 destinations – larger than any other Gulf carrier.

Hartmut Mehdorn, airberlin CEO, said: “The strategic partnership with Etihad Airways opens up enormous opportunities for the future of our company.

“This applies especially to future market development and the realisation of synergies.

“One of the key components of the new partnership is the launch of airberlin services to Abu Dhabi, which will become our new gateway to Asia and Australia.

“The agreement with Etihad Airways will also dramatically improve the global connectivity of our customers in Germany, Switzerland, Austria, and throughout the GCC and Middle East.”

Etihad Airways CEO James Hogan said the deal was one

of the most important in the company’s history: “This new partnership expands our network reach, gives us access to 33 million new passengers and provides us with a real opportunity for global growth. Through airberlin we gain immediate access to a broad and complementary European market, with outstanding connectivity options for customers of both airlines.

“We are always looking for ways to grow and partnerships are a smart way to enhance our ability to compete on the world stage.

“We now have a portfolio of 34 quality airline partners, but this is our first equity investment in another airline. It is a sign of our confidence in airberlin’s management and in the carrier’s potential to grow with us.

“Etihad Airways and the airberlin group carry a combined total of more than 40 million passengers a year, operate 233 aircraft, and employ 18,000 people. Together, the companies generate more than \$9 billion in revenues.

## Range of efficiencies

“We estimate each airline could achieve incremental revenues of between EUR35 million and EUR40 million just in the first year, and we believe the partnership has enormous potential to unlock a range of efficiencies.”

Under the partnership, airberlin will shift its Middle East operation from Dubai to Abu Dhabi. The airline will operate four A330-200 flights a week between Berlin and Abu Dhabi from January 15 2012.

Etihad Airways and airberlin are committed to creating a joint procurement taskforce to look for cost efficiencies across the two companies, including areas such as fleet procurement and deployment, maintenance, repair and overhaul (MRO) and general procurement.

Hogan added: “Today more than ever, it is vital to think differently in this industry. The number of codeshare partners Etihad Airways has, and the number of destinations it is now able to serve, is a point of marked differentiation.”

Aviation analyst Saj Ahmad said: “The wide-ranging partnership and stake in airberlin gives Etihad a great opportunity to expand its operation in Europe without the need to seek new slots and it allows it to utilise airberlin’s status as a major European player to capture traffic that comes both to the GCC region and for onward travel to other destinations that can be served via Etihad’s existing route network, especially to places like Australia.”

Ahmad added: “Equally, the deal could eventually allow Etihad to ponder joining the oneworld alliance as airberlin is a key member. While there’s no rush to do this, expanding Etihad’s co-operation with an alliance member, and one whose foothold is in Europe, gives the UAE carrier greater access to other airlines, which also interlink with airberlin. It’s clear that Etihad’s investment is one for the long term.”



Etihad Airways CEO James Hogan (left) and airberlin’s CEO Hartmut Mehdorn together for a huge value push to extend their market reach through the Abu Dhabi airline’s investment.

## Tailor-made insurance brings benefits to MEBAA members

Business aviation operators and suppliers across the region will soon be able to take advantage of a preferred insurance scheme offered by Abu Dhabi National Insurance Company (ADNIC).

After five years in the planning, the MEBAA aviation insurance scheme (MAIS) was launched at the Dubai Airshow and is now available to members.

The scheme provides MEBAA members with a single contact for all their aviation insurance requirements. Coverage available includes hull &

spares all risks, third-party and passenger liability, premises liability, products and hangar keepers liability, crew/passengers personal accident/loss of license, and hull & spares war and allied perils.

ADNIC has prepared the scheme in alliance with international reinsurance partners and brokers Willis Aerospace to provide a bespoke reinsurance package aimed at giving the most preferred terms and conditions for MEBAA members.

Ali Al Naqbi, founding chairman of MEBAA, said:

"The agreement marks the culmination of five years of effort to secure a credible insurance package for regional operators that offers an attractive value proposition.

"MEBAA is committed to create new opportunities and resources to support the growth of business aviation in the Middle East and the introduction of MAIS marks yet another significant step in our ongoing efforts to improve risk and liability management within our industry."



## < Nextant in on the Action

Nextant Aerospace, manufacturer of the 400XT—the reengineered Beechjet 400A/XP light jet—has appointed Dubai's Action Aviation as exclusive distributor for the type in the Middle East, India and the UK.

Hamish Harding, Action's CEO, gave the region the first look at the upgraded jet at November's Dubai Airshow.

The revamped twinjet features the Williams FJ44-3AP turbofan engine, advanced electronics, Rockwell Collins venue cabin management system and ProLine 21 avionics, as well as completely rebuilt and redesigned interiors.

Nextant's Jay Heublein and Action Aviation's Hamish Harding (right) shake on the distribution deal.

## Royal Jet's long-term plans for Jordan

Royal Jet has announced long-term commitments to Jordan's competitive executive aviation sector, starting with the appointment of Takhzeen Aerospace as its general sales agent (GSA) for Jordan.

A signing ceremony was held at the Four Seasons Hotel in Amman in December between Fahad Mohammed Wali Karmostaji, Royal Jet's vice president commercial, and Ammar Balkar, managing partner of Takhzeen Aerospace (pictured right).

Takhzeen will be primarily responsible for the promotion, marketing and sales of Royal Jet's core offerings, consisting of luxury VIP aircraft charter, medical evacuation services, FBO services and VIP terminal at Abu Dhabi international airport, aircraft management and acquisition consultancy and charter brokerage.

Shane O'Hare, Royal Jet president and CEO, said: "For us the entry into Jordan is geographically compelling. It will enable customers in the country to unlock the many benefits and privileges of private jet travel.

"We hope to replicate in Jordan the successes we have had elsewhere and hope that local businesses can take advantage of our diverse products and services."

Karmostaji added: "I am pleased that Takhzeen Aerospace is our local partner. I am confident that this



partnership will add substantial value to our presence in Jordan and make a strong financial contribution to our business in the coming years."

Balkar was equally enthusiastic. "Royal Jet is a perfect fit for Jordan's senior business travellers and this opportunity will allow us to expand our services and become a leader in the fast-growing luxury and leisure travel industry," he said.

"At the same time, it will address emergency medical requirements and provide a wide choice of medical ambulance facilities to the Jordanian community."

## HBC expands presence in Dubai

Business aircraft manufacturer Hawker Beechcraft (HBC) has opened an expanded office in Dubai.

The decision to set up the office follows the successful opening of new parts distribution centre in Dubai which, combined with similar centres in Dallas, London, Johannesburg, Singapore and Beijing, make more than \$375 million in inventory available to HBC customers worldwide.

"We view the Middle East—and Dubai in particular—as one of our key international growth markets and expect this to continue as the Arab nations continue to grow in importance in the global economy," said Sean McGeough, HBC president, Europe, Middle East and Africa.

"Therefore the new Dubai office will help us expand our presence in the region and capitalise on customer demand."

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*The Dubai Airshow heralded the celebrations of the nation's 40th year. Halls, pavilions and chalets displayed the colours of the UAE national flag in celebration of the anniversary. But, running in parallel, there were also darker discussions and dire warnings surrounding the murkier aspects of business aviation.*

# GREY'S ANATOMY

The Dubai Airshow was, once again, an excellent platform to promote the UAE and display how far it has come since inception. Innovation was very much part of the event, with much state-of-the-art technology reflecting how the region has become a significant player in the aviation arena.

Running in parallel to the show, the Middle East Business Aviation Association (MEBAA) conducted a number of focused events. One of the highlights was when members joined a round table discussion to debate the issues that keep business aviation experts awake at night.

Illegal charters, training issues, operational challenges and regulatory issues were all debated.

A major one-day seminar took place on November 14 – the last day of the show – when aviation legal firm Gates and Partners and international management company Kenyon International Emergency Associates joined with MEBAA to debate topical issues.

Kenyon recently signed a memorandum of agreement with MEBAA allowing members to take advantage of the company's experience when handling a disaster or preparing for a crisis, demonstrating that being prepared is as important as managing the outcome.

The Risk Management for Business and Private Aviation seminar was welcomed by Ali Al

Naqbi, chairman and co-founder of MEBAA, who recognised the importance of the sector of the aviation market. Al Naqbi opened the day with the announcement that MEBAA was now offering specialised insurance services for the business aviation community.

A broad brush overview of the industry introduced the event and summarised the current state of play of risk management within the business and private aviation industry.

Said to be in its tenth year, the business aviation market in the Middle East is now at a crucial developmental stage as it is poised to reach an annual value of \$1 billion by 2018, according to Al Naqbi.

#### Managing more aircraft

Growth is coming not just from high-net-worth individuals but also from operators, such as Gama and ExecuJet, which are managing more aircraft for charter in the region. This demonstrates the need for business aviation as a valuable business tool, not just a luxurious means of travel. The need for managing the risk associated with aircraft is therefore intensifying.

The grey market, otherwise known as illegal charter, was the main topic of discussion with Aoife O'Sullivan, lead partner at Gates, explaining that it was still an area of concern. She explored the effect of illegal public transport in

business and private aviation in a number of different areas including ownership, liability, insurance and regulation.

The grey market is made up by private aircraft owners who, without an air operator's certificate (AOC), conduct illegal charter flights. They effectively make private jets available to either unlicensed brokers or just to friends in exchange for reward. This may be in the form of money or in exchange for other goods of value like hotel accommodation.

Due to the rapid growth of the Middle East business community, and what could be described as a booming aviation industry, the practise is still occurring widely.

O'Sullivan was at pains to point out that MEBAA is working hard to reduce the problem and, while legal loopholes in operating rules and a lack of enforcement initiative on the part of aviation officials mean that the so-called grey market activity is still a major concern for the region, the Middle East charter market has gone a long way to shed the reputation and demonstrate that the industry aims to be regulated to the highest standards, comparable to those in the west.

The seminar provided the opportunity to explain the risks involved in the grey market and why carriers should avoid stepping into the market, not only for insurance reasons.

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**Aoife O'Sullivan:**  
MEBAA is working hard  
to reduce the problem.

All aircraft operators that are legal for public charter must have an AOC and the certificate must be approved through the relevant aviation authority. Information is usually contained in part 135 regulations, which hold operators to a very high level of standards and keep certificate holders accountable for their actions or omissions. O'Sullivan suggested that there are a number of reasons that encourage aircraft owners to ignore the risks. Ignorance is one reason, with owners just not realising that they must follow set process if they are chartering their jet to a friend or colleague.

However, there's the darker side driven by those who, in the current economic climate, are looking at other ways to finance the very expensive costs associated with ownership. It was also suggested that there are some pilots who operate illegal charters to generate extra cash. The fact that from the airport runway you can't tell a legitimate charter from an illegal one only makes things easier.

A private owner is not required to maintain the same standards as one that has a valid AOC and, while these are likely to be equally as good as a professional operator, maintenance logs are not monitored as strictly. These flights are likely to not adhere to the operational safety standards set forth by the governing authority, which may well put the "customer" at risk on many levels.

Moreover, if there is an incident or accident, most aircraft insurance policies for private owners specifically state that the aircraft is not to be used for public transport. Taken in hand with the brand damage this could lead to and the loss arising from an

accident, it is highly recommended to avoid this route.

One of the key outcomes of the seminar was the confirmation that insurance companies cannot pay out for incidents that occur on illegal charters, precisely because the incident occurs during an illegal act. So not only could an owner be liable for an excessive insurance claim from injured third-party families, it is quite likely the financiers will also make a reclaim of the money used to buy the jet.

The grey market seeks out loopholes and is a global problem, with some reports suggesting that as many as half of all private charter flights in some markets don't operate on a completely legal basis.

### Significant consequences

There are a number of significant consequences of illegal charter besides the denial of insurance cover. It is highly likely that financiers will have a clause in their loan document that suggests that an illegal charter would result in a default of the covenant and consequently the financial establishment can reclaim financing on the aircraft. Customs can also make a claim against an illegal charter. For example, in Russian law, false declaration at customs may result in an administrative fine imposed on the responsible individual or legal entity. The amount of fine can range from half to twice the value of the aircraft and, even on occasion, the confiscation of the aircraft.

Illegal charter really does have major consequences and is something that MEBAA is keen to raise awareness about within the region.

There may also be criminal consequences of operating in the grey market. Carriers are advised

to remember that operating such flights may result in criminal charges (not restricted to just the owner but management and shareholders) and can include heavy fines.

O'Sullivan cited a number of events where illegal charter had resulted in far from happy endings. A Cessna 208 Caravan aircraft crashed on approach to Domodedovo airport on November 19, 2005. The flight was illegal as it was operating under cabotage (i.e. not licensed to fly public transport in that country) and consequently the flight was denied coverage by the insurer.

### Corporate manslaughter

In Teterboro, Florida, in 2007 a Platinum Jet Challenger 600 had a major incident and the owner was served a civil penalty \$1.86 million and underwent criminal charges. O'Sullivan advised that owners must also take note of corporate manslaughter legislation, where burden of proof of gross negligence often shifts to the defence party. What seems like a good idea to do a favour for a friend can turn into a complete disaster for a private or corporate aircraft. It is just not worth the risk, stressed O'Sullivan.

Looking to the future, she suggested that closer co-operation between industry players could help to protect the aircraft as an asset and could encourage growth in the industry.

For example, management companies and operators could help financiers protect their financial interests in the asset by ensuring safe and secure operation and control of the aircraft at all times. Gates is continually trying to try and encourage the sector to actually resolve issues themselves by working together rather than requiring heavy regulation in an already densely regulated industry. Through activities such as collaborating with associations such as MEBAA to create intensive one day seminars the aviation focused firm is aiming to make the industry act, rather than just discuss and debate.

**Kelly Green** examines the reasons why uniforms are starting to reflect the talents of top designers to recapture the golden age of flying.

# THE HEIGHT OF FASHION

**D**uring the golden jet age of the 1960s, flying was still an exciting experience for the privileged few.

Climbing on board the newly-built aircraft, wealthy travellers were welcomed by immaculate air stewardesses – the epitome of glamour dressed in elegant uniforms, which set apart one airline from the next.

Glamorous and thrilling, romantic and exotic, air travel in the 1960s was still almost exclusively reserved for movie stars and businessmen, but passenger numbers were rapidly increasing as bigger and faster jets were being created.

Fast forward half-a-century and air travel no longer conjures up such glorified images, as the skies are more crowded than ever before.

## Recall the romance

While 2011 did see a number of attempts to recall the romance and bring it to the forefront of the public's imagination through Hollywood cinema, museum exhibitions, advertising campaigns from the likes of Virgin Atlantic and British Airways, and television shows, such as US period drama PAN AM, flying has become a commodity, rather than a luxury.

But while the wonder of commercial air travel may have become overshadowed by security regulations and travel restrictions, there is still some glamour left in flying thanks to the ever-growing business aviation market.

Indeed, air travel today cannot get much more luxurious than flying by personal jet. So it's no wonder that Switzerland-headquartered luxury private jet operator VistaJet, which has an



operations centre in Dubai, has chosen the 1960s golden age as the inspiration for its new cabin crew uniforms.

The new-look uniforms are the work of Italian fashion designer Giancarlo Petriglia, who has created a design that he hopes is reminiscent of the understated elegance of the flight attendant and pilot uniforms of the 1960s.

This design collaboration is the latest project in VistaJet's creative revitalisation effort, spearheaded by VistaJet creative director Nina Flohr.

After an extensive search, Flohr appointed Petriglia to design the new uniforms for VistaJet crew members, with a brief to be uniquely reflective of the company's refined aesthetic. The pair

worked closely to produce stylish new uniforms that will also remain durable and comfortable enough to withstand long work hours in the air.

Petriglia's sleek designs incorporate the pervasive red detailing, ubiquitous on VistaJet's fleet of lavish Bombardier jets. The designer also incorporated red into the uniform's ties and scarves, playing with VistaJet's red logo to refine the pattern.

As well as looking to the 1960s for the sophisticated flight attendant hats, Petriglia also took inspiration from a more modern style icon, French first lady Carla Bruni-Sarkozy. The final design for the new flight crew uniform encompasses VistaJet founder and sole owner Thomas Flohr's vision of a consistently upscale private jet experience.

"I have greatly enjoyed working closely with Nina to create such beautiful uniforms for the VistaJet flight crew," said Petriglia. "Nina's wonderful spirit, innate class, and modernity are reflective of my designs."

VistaJet is not the only business airline that has chosen to update its look. As the business aviation market in the Middle East has matured so, too, has Abu-Dhabi-headquartered executive flight services company Royal Jet, which unveiled new-look uniforms for its female cabin crew and



Royal Jet's stunning new uniform design.

Below: Business class for Vistajet.

Opposite page: Vistajet founder Thomas Flohr with Nina Flohr the operator's creative director.



personal chef during November's Dubai Airshow.

Shane O'Hare, president and CEO, explained that Royal Jet wanted an updated uniform that mirrored the sophistication of the airline while also reflecting its exceptional service standards.

"The new uniforms not only look great but they signal another phase in Royal Jet's ongoing development," he said.

The new outfits represent a major change from the old style and colour of uniform, which has served the airline for the eight years since start-up. There is a refreshed concept in design, cut, style, a bespoke hat and the addition of new colours.

**Continually evolving**

"As we look ahead to our ninth year of operation, we're still a relative youngster but we are continually evolving and enhancing our product offering – which includes the way our cabin crew present themselves – to best meet the needs of our customers," explained O'Hare.

Keeping uniform designs fresh and exciting is an important part of an airline's brand strategy.

"A customer is a captive audience for a brand at 35,000ft and nothing leaves as lasting an impression as the flight attendants, since that's possibly the only human interaction in-flight the customer has," said Shashank Nigam, CEO of SimpliFlying, an aviation brand strategy firm based in Singapore. "Hence, it

is critical that the appearance of the flight attendant not only ties in well with the brand, but creates a lasting first impression that is appealing to the unique tastes of the customers."

In the hope that their first impression will be a positive one as guests walk on board Royal Jet aircraft, they will now be greeted by glamorous female cabin crew dressed in grey blazers, worn with a pencil skirt or tailored trousers, and a white striped blouse. The outfit will be completed with a silk scarf and bespoke black hat, designed by Parisian fashion designer Claire Barrat, with the gold Royal Jet logo brooch.

Barrat brings an impressive catalogue of experience, having worked for world-renowned

designer Lanvin for seven years as a bags, belts, glasses, watches and jewels designer. She was also art director for Maggy Rouff for three years as a ready-to-wear and accessories designer. She currently works for clients such as Revillon, Rodier, Devernois, Balmain and Balenciaga.

Royal Jet's newly designed uniform for the personal chef comprises a three-piece, single-breasted grey suit combined with a crisp white shirt, made of Swiss cotton. A dark purple tie adds a splash of colour and complements the female uniform scarf.

The suits are made of mix-wool, crease-resistant and comfortable cloth to remain unwrinkled for the flight duration and to allow the skin to breathe.

The uniform's design also allows the wearer to move freely, a necessity in the confines of the cabin or in the rare event of any emergency.

Following Royal Jet's announcement that it saw a record-breaking performance in the first nine months of 2011 and VistaJet's declaration that it is expanding its fleet in the Middle East in response to strong demand for its services across the region, no doubt both companies will be hopeful that stylish new uniforms will mean cabin crews are dressed for even more success in 2012.



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*The Gulf is to be home for a new helicopter type following investment by the UAE's Al Ansari family. **Jon Lake** looks at the prospects for the future.*

# Quest is on to bring new helicopter type to UAE

**Q**uest Helicopters unveiled the first member of what it hopes will be an innovative new family of rotorcraft at the Dubai Airshow.

Quest Helicopters is headquartered in Dubai and is a subsidiary of Quest Investments, the holding company of the UAE's Al Ansari family.

The company has teamed with Ukraine's Aerovortex to produce a new helicopter design, known as the Quest AVQ, at a facility that it hopes to build in the emirate of Umm Al Quwain. This will be the first privately-funded civil helicopter to be built in the Middle East.

Though a new design, the Quest AVQ's lineage can be traced back to the Russia Ukraine Maslova Ru-Mas 240 and A-245 'Guppy' helicopter designs, the latter of which

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## ROTORCRAFT



### CONTINUED FROM PAGE 63

was shown in mock-up form at the MAKS airshow in Moscow in 2009.

The team behind the Quest AVQ (formerly known as 'Project Q') aims to combine advanced rotorcraft technologies and long-life airframes engineered for robust operations from the former USSR with Western refinements and with a host of new technologies being developed in-house.

Quest is committed to bringing new technology into the UAE. It has already signed an MOU with Abu Dhabi's Higher College of Technology and Centre of Excellence for Applied Research and Training and the Ukraine's Academy of Science to invest in and develop specialist research into climate, health, and other technological advances. Yousuf Al Ansari, CEO of the new Quest Helicopters said: "We want to bring in the latest technology that will help create value to the overall aviation industry in the region and create employment for young Emiratis."

The AVQ programme is "all about the technology", according to Mike Creed, Quest's commercial and deputy project director, who sees a place for licensing the developed technologies to others, as well as using them in Quest's own helicopters. "We will have something quite relevant to sell to the world."

The key technologies being developed under the

programme include a quadruplex fly-by-wire primary flight control system, a unique 'ejectable' cabin, which will serve as an escape capsule in the event of any catastrophic failure, telemetry downlinks for progressive maintenance monitoring, and an inline tandem rotor system. The aircraft will also have a state-of-the-art avionics system, with touchscreen multi-function displays.

The control system is innovative. It includes a conventional 'collective', but the cyclic is a modern sidestick controller, as used in the F-16 and the latest Airbus airliners. Pitch control rods are hidden inside hollow drive shafts to minimise drag.

#### Fly-by-wire system

The fly-by-wire system is being designed by the EKTRAN company from Kiev, which has already designed similar control systems for fixed-wing Antonov civil aircraft. Quest's designers spent two years evaluating fly-by-wire systems before selecting EKTRAN.

The ejectable cabin (one of the features apparently inherited from the Maslova designs) features four solid propellant boosters and recovery parachutes, while the remainder of the airframe also has a separate recovery 'chute.

The company has calculated that, in the event of a catastrophic failure, passengers would experience forces of about 4g for 0.5 seconds and

then 2g for another 1.5 seconds – modest compared with conventional fighter pilot ejection. The Quest AVQ ejection process commences with a detachment and then a progressive acceleration of the capsule cabin in a forward trajectory.

Modelling has already convinced the company that the system will provide a real enhancement to survivability. Full-scale live testing will follow imminently. The challenge will lie in achieving certification, Creed believes, though he pointed out that larger versions of the AVQ, including the ten-seat launch model, would not actually feature the ejectable cabin concept.

The Quest AVQ will feature what the company describes as a unique pro-active real-time maintenance monitoring system, utilising telemetry downlinks to provide a preventative, on-condition maintenance philosophy.

Even the AVQ's configuration is innovative for an aircraft in its class, using an inline contra rotating tandem rotor system – making the aircraft, to all intents and purposes, a mini Chinook – and removing the need for a vulnerable and inefficient tail rotor system to counteract main rotor torque.

The AVQ will be powered by a twin turboshaft powerplant, probably consisting of a pair of Progress DB/Motor Sich Ukraine AI-450M



Opposite page: A mock-up cabin interior of the new helicopter.

Far left: Quest's Mike Creed.

Left and above: VIPs from Ukraine and Dubai enjoyed the launch of the new aircraft at the Dubai Airshow

engines with FADEC, or a new derivative of these engines, and offering between 465 and 480shp.

These will be sufficient to allow the helicopter to operate even when outside air temperatures reach 55°C. But there are believed to be other options. "Other, Western, engine manufacturers are courting us," Creed revealed.

The company hopes to build 20 helicopters per year from 2014, rising to 40 in the third year and to be capable of producing 50 aircraft annually by fourth or fifth year. Chairman Mahmood Al Ansari has already committed up to Dh 183 million (\$50 million) for the first phase of the programme.

While \$50 million may seem a small amount for the development of a new helicopter, Quest has been quick to point out that R&D can be carried out in the Ukraine in a "very cost-effective environment", and added that prototype number 1 is already half constructed, with costs going exactly to plan.

Designed by Volodymyr Udovenko, previously responsible for the Aerokopter AK 1-3 Sanka and Cadet KT-112 Angel light helicopters, the Quest AVQ prototype will be designed, built and flight-tested at Kharkov in the Ukraine from 2013, with production aircraft then undergoing assembly at the new facility in Umm Al Quwain from 2014.

Land for the new facility has already been acquired in the form of a 40,000sqm plot and the

company expects to 'break ground' for the new buildings in 2013. These will consist of a high-tech production facility, with an adjoining showroom and helipads.

The company looked at various locations around the UAE, including the aerospace cluster in Al Ain. But Umm Al Quwain was felt to be ideal for the first phase. Quest did not want to be based at an existing airport, where all sorts of restrictions could have been imposed on operational flying, the supply of parts, and even security. The location chosen – a bare sand site – lies in a triangle of unrestricted airspace between Sharjah and Ras Al Khaimah, and is well suited to experimental and trials flying.

**Bilateral agreement**

The new helicopter will be certificated in the UAE and the Ukraine, with a proposed bilateral agreement between the Ukraine and EASA ensuring that parallel European certification will also be achieved.

The company said it would guarantee a price of \$2.95 million for the first 20 helicopters. It is not predicting over-ambitious order totals, and for every order taken the customer will be expected to put down \$250,000 as a deposit.

The boxy looking AVQ shown at Dubai Airshow in mock-up form was representative only

of the initial prototype/technology demonstrator, and was shown as a four-seater. In this form, the aircraft was described as having a 4,960lb (2,250kg) maximum take-off weight, a maximum speed of 185mph (295km/h), a 9,840ft (3,000m) hover ceiling and a 435nm (700km) range.

The actual production aircraft is likely to be larger, with more seats, and is expected to look more modern and more streamlined, as well as offering a competitive price, excellent performance characteristics, good load-carrying capability and new technologies.

There will be a range of versions for different roles, with different sized cabins and a state-of-the-art interior with tailored quick-change cabin options.

Quest hopes to win significant orders from parapublic (police, emergency medical service and border security) and commercial operators, including those specialising in VIP, offshore and utility missions, though the company expects initial interest to be strongest from utility operators, especially those in the UAE, Saudi Arabia, China, Africa and India, which it views as 'primary markets'.

The VIP version will feature an interior designed by UK firm Design Q, shown in mock-up form at Dubai.



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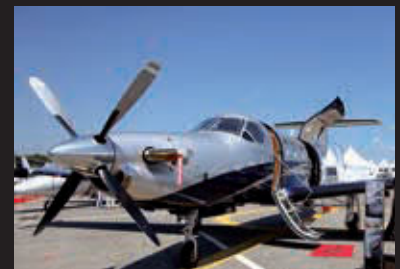
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*The Bell-Boeing team took the V-22 Osprey tiltrotor to the Dubai Airshow for the first time, giving aerospace industry visitors an opportunity to see the revolutionary aircraft that is expected to be playing a role in the region. Alan Dron reports.*

# Osprey sets its sights high...

**W**ith production of the V-22 Osprey tiltrotor now reaching three per month and more than 150 delivered to the US Marine Corps (USMC) and Air Force, Bell-Boeing says it now has the capacity to market the aircraft to international customers.

It used November's Dubai Airshow to give the region's procurement staff the chance to get a first-hand look at the new aircraft type.

In marketing the aircraft overseas, the challenge for prospective customers is to realise that the V-22 is neither a helicopter nor a normal fixed-wing aircraft, explained the USMC's Colonel Greg Masiello, the V-22's joint programme manager.

"The challenge is for everyone to understand this is a unique aircraft, realising what its attributes are and how they can best be used."

Compared to helicopters, said Masiello, the V-22 is the most

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survivable asset in the inventory. “The V-22 was very well received by the international community in Dubai,” said Masiello.

“With its unprecedented range, speed and survivability, the Osprey is perfectly suited to many of the missions that Middle Eastern forces require.”

The USMC plans to order 360 MV-22 aircraft for the amphibious assault role, while the Air Force is taking 50 CV-22s for long-range special operations and combat search and rescue missions.

Still to be ordered are a proposed 48 for the US Navy: “They’ve always said they wanted them,” said Scott McGowan of Bell Helicopters, “and are looking at the possibility of using them to replace the Grumman C-2 Greyhounds”. The elderly C-2 operates shore-to-ship supply missions in the carrier on-board delivery role.

The USN is also looking at remanufacturing the C-2 to prolong its life or designing a new aircraft from scratch – an increasingly unlikely scenario with the US armed forces facing a \$1 trillion reduction in funding over the coming years. Bell-Boeing makes the point that, unlike the C-2, which can only land on aircraft carriers, the V-22 can operate from any vessel with a flight deck.

The next major developments in the V-22 story will be the first overseas deployments, with the USAF setting up a unit at RAF Lakenheath in the United Kingdom this summer and the USMC following with a unit in Okinawa, Japan, shortly afterwards.

In 2013, the aircraft is likely to leap in public visibility when some are deployed by the USMC to the Presidential Support Unit, flying VIPs around the Washington DC area.

The V-22 has already seen operational use in both Iraq and Afghanistan, with some examples making an epic 15-hour flight, topped up by air-to-air refuelling, from Afghanistan to a ship off

the Libyan coast as unrest erupted in the North African nation.

Boeing is enjoying a boost in interest of its rotary-wing products from the region.

At the time of going to press, Boeing was close to concluding a firm contract with Jordan for the first export sale of its AH-6i light attack/reconnaissance helicopter. The American manufacturer took one of the helicopters to the Dubai show.

Jordan signed a letter of intent for an unspecified quantity of the AH-6i at the SOFEX special operations exhibition in Amman in May 2010. It already operates six predecessor MD 530F Little Birds in the special forces support role.

The AH-6i is optimised for the counter-insurgency role and has a glass cockpit with two multi-function displays that draws heavily on the instrumentation of the larger AH-64 Apache, using around 80% of the latter’s software. “From the pilot’s bulkhead forward it’s basically Apache Block III technology,” said Brad Rounding, manager, attack helicopters business development. “From the pilot back, it’s basically MH-6 Little Bird.”

Other modifications include a six-bladed main rotor, the ability to triple its normal 61 US gallon (231 litre) fuel tank with additional cabin and external fuel tanks and the possibility of fitting it with a multi-sensor turret.

“There are around 4,000 ageing day-only capability light scout helicopters in operation worldwide and we are focusing this aircraft on countries that might not need a full-up Apache capability,” explained Rounding.

The US Army is about to go to Congress shortly for its new Armed Aerial Scout programme – something that has seen several projects aborted over the past decade – and Boeing hopes that the AH-6i will displace the current Bell Kiowa Warrior. The AH-6i’s support costs, claimed Rounding, are around half of those of the incumbent aircraft.



# Why the

*AgustaWestland has built a strong presence in the Middle East helicopter market in recent years driven by the success of the AW139 medium twin. Now the company is targeting the region as a key growth opportunity as it prepares to launch a number of new products.*

**Paul Derby reports.**



# Middle East is AW-struck

**T**he part that the Middle East has played in the rapid expansion of AgustaWestland's global helicopter fleet cannot be overstated. The company's flagship product, the AW139, has racked up more than 400 deliveries worldwide and almost a quarter of these are operating in the Middle East in a variety of applications.

The company now has around 130 helicopters flying with Middle East customers and has developed a particularly strong customer-base in the United Arab Emirates, Qatar, Saudi Arabia and Oman. Out of this 130-strong fleet, more than 90 are AW139s and half of these are based in the UAE.

While global economic turbulence has buffeted every sector of the aerospace market, the Middle East has remained a stable and increasingly influential market for AgustaWestland. "This region is very important to us for a number of

**AgustaWestland has sold helicopters to most countries in the region. It is now focusing its attention beyond sales growth and into establishing greater in-country presence.**

reasons," said senior vice president, marketing Roberto Garavaglia.

"In the civil market, the oil and gas sector continues to be the engine of market growth. There is a strong VIP market in this part of the world with lots of people who need access to fast transportation and we have also had a lot of success with both government and military customers in the region.

"In terms of the state of the market, the fact that the oil price has remained at a sustained high level in relative terms over the past few years has meant a more stable environment for sales opportunities."

While AgustaWestland has sold helicopters to most countries in the region, it is now focusing its attention beyond sales growth and into establishing greater in-country presence, particularly in terms of customer support and training activities.

Abu Dhabi Aviation, which operates a fleet of 20 AW139s mainly for offshore missions, has been an AgustaWestland service centre since 2005 and in 2009 the two companies reached agreement to set up a joint venture in the UAE to operate in the field of maintenance and training for helicopters.

It is no surprise that the offshore

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sector remains the single most important application for AgustaWestland in the region. In addition to Abu Dhabi Aviation, the AW139 is also in service with most of the major operators, including Saudi Aramco and Gulf Helicopters in Qatar, which has a total of 17 aircraft on order, the majority of which have already been delivered.

Such has been the success of the AW139 in the offshore sector, this is now the single largest application for the type, accounting for approximately a third of total sales. AgustaWestland points to the aircraft's performance, safety characteristics and also its ability to operate with very few limitations in temperatures of 50°C, making it ideally suited to the searing heat of the Gulf in the summer months.

In the UAE the AW139 is now in operation in a number of roles. The UAE Air Force operates the helicopter for utility and VVIP missions and it performs similar missions for the Dubai Air Wing, while police in Abu Dhabi use the AW139 for law enforcement.

### Strongest markets

The Middle East is one of the strongest markets worldwide for VVIP helicopters and, in addition to the AW139, AgustaWestland has also enjoyed success with the three-engined AW101, having concluded sales for undisclosed VVIP customers in the region.

The company describes the AW101 as the 'ultimate' VVIP helicopter because of its stand-up cabin and vast interior.

Since agreeing to acquire Bell's share in the newly named AW609 civil tiltrotor programme a year ago, AgustaWestland also has another potentially strong player in the VVIP market of the future. FAA and EASA certification of the AW609 is now planned for 2015, with customer deliveries beginning soon afterwards.

Two of AgustaWestland's three military customers for the AW139 are concentrated in the Middle East, with the Qatar Armed Forces and the UAE Air Force both operating the type.

The Qatar Armed Forces has ordered 21 AW139s and the majority have now been

## Abu Dhabi Aviation agrees MRO joint venture with Agusta Westland

**Abu Dhabi Aviation and AgustaWestland have agreed to create a joint venture company in the UAE for helicopter maintenance.**

**The new company will be called AgustaWestland Aviation Services and will carry out a range of services and activities for the sale of helicopter spare parts and accessories, helicopter/component repair and overhaul, customisation, modification and upgrading.**

**According to the evolution of future market requirements, the joint venture's scope of activities could be further expanded to encompass special configuration development, component production and helicopter assembly.**

**In a statement the two companies said that leveraging on their respective competencies and businesses, the synergy generated through the Abu Dhabi Aviation and AgustaWestland joint venture will deliver a new level of customer support and services across the region. Customers will be offered a wide range of services in Abu Dhabi that have historically been available only from the manufacturer in Italy or the United States.**

delivered. They will perform a wide variety of missions, including utility, troop transport, search and rescue (SAR), border patrol, special forces operations, law enforcement, homeland security and emergency medical services (EMS).

Garavaglia believes there is a growing shift towards greater use of rotary-wing rather than fixed-wing aircraft for a number of military missions and that this trend is being reflected in the requirements of Middle East customers.

"Military helicopters are used in a number of ways in the region, including in a combat role, for utility missions, on the battlefield and also for naval missions. The importance of rotary-wing assets is growing as the threat environment changes.

"The threat in most scenarios is no longer a large enemy fleet but rather small, fast boats that can conduct rapid missions close to shore. The

threat is moving from 'blue water' to a 'brown water' environment, which means that military operators need a fast response capability, with good observation systems and weaponry that is suited to this new threat."

AgustaWestland's newest product in the military sector is the AW149, which was unveiled at Farnborough in 2006 and made its maiden flight in 2009. The eight-tonne class helicopter is designed for battlefield operations and is capable of carrying 18 troops for missions including battlefield support, casualty evacuation, SAR, combat SAR and surveillance.

The company has reiterated its commitment to the programme, despite losing out to the Sikorsky T-70 in Turkey's \$3.5 billion utility helicopter contest, known as TUHP. Garavaglia said he expects the Middle East region to provide an early buyer for the helicopter.

"We see strong potential for the AW149 in the Middle East for several armed forces, particularly in replacing older Puma class helicopters and some of the older Black Hawks that are in service.

"It is being built with a lot of capability in place and also will benefit from a low-cost approach because we're taking knowledge and technologies from our commercial platforms and putting them into the AW149."

The launch of two new civil helicopters within the past 18 months, in the shape of the AW169 and AW189, has given fresh impetus to AgustaWestland's drive to increase sales in the Middle East.

### Fill a niche

The AW169 is a new 4.5 tonne class helicopter designed to fill a niche in the AgustaWestland product range and is being targeted at commercial and government operators worldwide.

The company has forecast a market for 1,000 AW169s over the next 20 years.

Development of the eight-seat helicopter was given a boost in July with the award of a £22 million loan by the UK's Department of Business, Innovation and Skills. First flight is scheduled for 2012 with deliveries beginning in 2015.

The AW169 has already secured a Middle East customer with Abu Dhabi-based Falcon Aviation Services (FAS) signing a preliminary sale contract for two AW169s, as well as ordering one GrandNew helicopter. FAS is already an AgustaWestland customer, operating two Grand helicopters and it recently took delivery of a VIP-configured GrandNew.

Meanwhile, at Le Bourget in June, AgustaWestland unveiled the AW189, which will be an eight-tonne class helicopter, designed for a range of missions but particularly targeting extended range offshore operations. The aircraft will be certificated in 2013 and enter service early in 2014.

Two General Electric CT7-2E1 engines will power the AW189 and the standard cabin will be configured with 16 seats, although it will also be





available in a high-density 18-seat layout or ultra-long range 12-seat configuration.

On board the aircraft the avionics suite is suitable for the NextGen satellite-based IFR navigation and advanced communication and surveillance requirements. The AW189 will also feature an all-weather capability thanks to its synthetic vision system (SVS), which emulates the surrounding topography and to the enhanced vision system (EVS), which improves visibility in degraded visual conditions.

Garavaglia said the AW189 will be a competitor in the Middle East offshore market but also in other applications: “What we have done with the AW169, AW139 and AW189 is provide customers with flexibility – aircraft that can carry eight, 12 and 16 passengers respectively.

“Pilots flying the AW139 will recognise the same level of data presentation in the AW169 and AW189 and the same cockpit philosophy, which is designed to be pilot-friendly and low workload.

“We also see the AW189 as being ideally suited to the VVIP market for customers who need more space on board the aircraft. We are developing our concept of a family of helicopters all of which benefit from high performance and a common design philosophy.”



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In the last year **j2** Aircraft Dynamics has won 'proven and trusted' status and achieved tier 1 status with major aircraft manufacturers including Cassidian (EADS) and Embraer and has recently secured commercial contracts in the Middle East region for complete aircraft design laboratory installations using **j2** software at its core.

Such is the power of **j2** software, users are already reporting gains in reduction of design cycles by as much as 30%. The recently released Flight Test Suite can handle test data in real time, run all the auto regression and model corrections and have the test result back to the aircraft inside 25 minutes. It is fully expected that this capability could reduce flight test costs by at least 25%.

**j2** is fully committed to the provision of market leading design, analysis and modelling tools into education with a number of Middle East universities already benefitting from using **j2** software and seeks to further assist in supporting the engineering ambitions of the Middle East region.

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*As the Americans withdraw from Iraq, **Rob Coppinger** looks at the legacy left behind and considers how the country's defence forces will develop.*

# Salute to Iraq's fledgling force

**A**lmost nine years after the toppling of Saddam Hussein, all US military personnel have quit the Republic of Iraq but they have left behind an Iraqi Air Force (IAF) and Army Air Corps that are a shadow of the late dictator's air power.

In the wake of the 2003 invasion, Russian MiGs and Sukhoi fighters were found buried in the sand at what was then Al-Taqqadum Air Base, west of Baghdad. Never reconstituted by the Allied occupying forces, the air force of Saddam Hussein is estimated to have been around 300, with more aircraft used by his army for internal security.

The US military organisations that have brought Iraqi air power to where it is now have been varied. There is the US Army Security Assistance Command; the US Army Acquisition Support Center; the US Air Force (USAF) Security Assistance Command; the Iraqi Training and Advisory Mission (ITAM) for Air; and Central Command overseeing Iraqi operations.

And, after December 31, there was also the Office of Security Cooperation, based in the 16,500-staff-strong US Embassy in Baghdad.

Of the various organisations involved, ITAM had the mission to "help rebuild Iraqi air power", according to Major General Anthony Rock, its director for the last 12 months of its existence until December 2011.

Rock, also commander of the 321st Expeditionary Air Wing, and former Commandant of the US Army's Air Command and Staff College, was not available for interview but ITAM did provide a US military news service video interview that took place in September. In it, Rock described the revived Iraqi military aviation as "nascent but credible capability".

What nascent meant, by November 2011, was an IAF that stood at around 5,000 airmen and 77 fixed-wing aircraft and an Iraqi Army Aviation Command (IqAAC) that was 2,500 personnel with about 90 helicopters. Of all these aircraft, only the legacy Mi-17 and 2009-build Mi-171 helicopters are Russian.

Iraq is expected to receive Lockheed Martin F-16 Fighting Falcons from 2014, reflecting the new relationship between the US and the Arab nation. The 18 that have been ordered have a \$3 billion price tag and are the Block 52 version. At least 10 Iraqi pilots are in the US training to fly the F-16s. The 18 F-16s are part of what is expected to be a total order of 36.

Lockheed said: "We look forward to supporting the two governments in this foreign military sales agreement and welcome Iraq as the 26th nation to operate the F-16. Deliveries will begin in 2014."

Another aircraft that is readily identifiable as part of the US military

*Continued on Page 74*





**CONTINUED FROM PAGE 73**

is the Lockheed Martin C-130 Hercules. Iraq has three C-130Es that the IAF operates without US help and the country has a further six C-130J Super Hercules on order. The first of the six is expected to be delivered in December 2012. Candidate pilots, loadmasters and technicians for the Super Hercules have already been sent to the US for training.

Pilot training for these recognisable aircraft and other types now in service began in 2007. A variety of air bases are involved in the training. Tikrit's air base is home to the Iraqi Air Force College. Here pilot candidates learn to fly Beechcraft T-6A Texan II under the advanced training programme. The T-6A, of which the college has more than a dozen, is an aircraft with an acrobatic capability, indicating that these are likely to be for preliminary fighter training.

Another Hawker Beechcraft aircraft used by Iraq is the King Air 350. This is flown by the IAF's 87 Squadron and is used for counter-insurgency.

In 2007 it was announced that the King Air 350 was to get General Atomics Aeronautical Systems intelligence surveillance and reconnaissance (ISR) payloads. A contract worth \$53 million was awarded to General Atomics for ISR packages. The payload would include General Atomics' Lynx IIE synthetic aperture radar, ground moving target indicator (GMTI) radar, MX-15i electro-optical, infrared camera system and a high-bandwidth data link system.

Beechcraft did not respond to enquiries about its aircraft in Iraq but General Atomics said another logistics contract, since 2007, had been placed. The company was not able to provide further details.

Pilots that will fly the King Air 350 can begin their training on the Sama CH-2000 from Jordanian Aerospace Industries (JAI). The CH-2000 aircraft were part of a \$12 million US Army

contract for 16 of the type, equipped with forward-looking infrared sensors and Harris secure communications equipment for surveillance duties. The deal with JAI also covered the provision of training for IAF pilots and maintenance crew and long-term spare parts and logistics support.

In the north of Iraq, near the city of Kirkuk, is Al Udeid Air Base. Here trainee pilots learn to fly the Cessna 172 Skyhawks. These pilots can also learn to fly the Cessna 208 Caravan which, like the King Air 350, has a counter-insurgency function. But the Caravan does not just carry ISR payloads, namely electro-optical sensors and communications equipment; it has two Lockheed Martin AGM-114 Hellfire missiles. Each missile is attached to a hard point under either side of the wing. The USAF's 521st Air Expeditionary Advisory Squadron carries out training for this.

**Direct hit**

The first Caravan Hellfire launch took place in 2009, which resulted in a direct hit on a training target.

Kirkuk is also where the US began training pilots. A first intake of 10 Iraqi students began classroom instruction at the air base on October 1 2007. Four of them got to fly one of the IAF's then new Caravans. Since then the goal has been to produce 80 fixed-wing and 80 rotary-wing pilots per year.

Kirkuk's training fleet was to comprise 12 Skyhawks, five Caravans, 12 Bell 206 JetRangers, 10 Bell 205 UH-1HPs, also known as the Huey II, and nine Mil Design Bureau Mi-17s.

Under the US-directed revival of its military aviation, Iraq has split its fixed and rotor wing between the IAF and the IqAAC, respectively. The IqAAC operates six different helicopters, the Mil Mi-17s and Mil Mi-171E, Bell 407, Huey II, the Eurocopter EC635 and the Aerospatiale SA340 Gazelle.

A major Army air base is at Camp Taji, north of Baghdad. It is also home to the IqAAC's largest maintenance facility. It is what the US military calls the Mi-17 hangar and "the largest free-span building in the Middle East".

The Mi-17 hangar is 76m long and has enough room for six Mi-171s to be undergoing maintenance, office space and a helicopter simulator for training. Opened in January 2011, the US Army Corps of Engineers managed the \$9.8 million project that began in 2009. The project also included the construction of an air traffic control tower and a bulk fuel station.

The Mi-171 helicopters, which will be maintained in the Mi-17 hanger, are used for troop mobility and flown by IqAAC's 15 Squadron. In 2010 the Iraqi government ordered 14 Mi-171Es at a cost of \$190 million.

Rock's ITAM has had 30 personnel training the Iraqis on Mi-171 piloting and maintenance. US forces have also been involved with Mi-17 live fire exercises conducted at the Besmaya Combat Training Center.

The Huey IIs, meanwhile, are flown by the IqAAC 2 Squadron for reconnaissance. It will have a fleet of 16. From April 2011 the unit saw Iraqis take control of their pilot training. Training overseen by the US military has included the use of night vision.

While the Mi-17s are primarily for mobility and the Huey IIs are for recon, the Iraqis have opted for a tried and tested armed scout. In late 2008, Iraq decided to purchase 24 Bell 407s armed with AGM-114 Hellfire missiles, 2.75in rockets, and .50cal machine guns.

The sale of the Bell 407s was part of a larger package that included initial spares, ground support equipment and tools, and aircraft maintenance through contractor logistics support.



The US military has stated that in December 2010 a cargo plane shipped three Bell 407 training helicopters from Huntsville International Airport to Camp Taji. Lieutenant Colonel Shamky Abbas, a commander and instructor pilot with IqAAC's 21 Squadron, told the US military news service that "to receive the aircraft is something like a dream that became a reality".

The US military had planned to have a squadron of Bell 407 armed scouts operational by the end of 2011. This could not be confirmed to *Arabian Aerospace*.

While Iraq needs aircraft and pilots, it also needs air bases, radars and air traffic control. Building up this infrastructure for the IAF and IqAAC has also been a slow process.

#### Taught English

At Camp Taji an ATC tower was built for Iraqi air traffic controller training and it is now manned 24 hours a day by IqAAC controllers. The ATC training was carried out by the Washington Consulting Group, which specialises in international air traffic management. The Iraqi staff were taught English and were certified to the International Civil Aviation Organisation standards for ATC.

As well as training, the US has "gifted", as Rock describes it, to Iraq, one long-range radar and the airport surveillance radars the Americans installed for their own use. One other long-range radar has been provided as a foreign military sale item.

In April 2011 USAF and Iraqi officials opened a new \$9 million air operations centre at the IAF's Al Muthana Air Base. At the ceremony Rock said: "This new facility will provide... an integrated air picture across the entire country, enabling the support not just for the IAF and IqAAC, but potentially to the Army, Navy and even police forces for the unified protection of Iraq."



**From F-16s to the AN-32, the Iraqis are steadily meeting the need for aircraft ... and for pilots.**

This means Iraq will be able to monitor and direct ISR operations and have the resulting image data from the aircraft retransmitted to multiple locations. The importance of this capability, and the fact that so many of Iraq's aircraft carry ISR payloads, was made clear when, in September, Rock said the Iraqis had focused on internal security. "They have been in the fight of their life for their fledgling democracy," he added.

Doug Barrie is the International Institute of Strategic Studies' senior fellow for military aerospace. He said: "A balanced force structure of combat, [ISR] and intra-theatre transport aircraft supported by rotary lift would seem a reasonable longer term aim. This, however, will be reliant on available funding and the speed at which the military can renew its cadre of air and ground crew."

Rock expects the wider issue of Iraqi national airspace control to be enhanced through co-operation. He expects the Jordanian Air Force to become a partner for Iraq and thinks that other Middle Eastern countries that already operate the F-16 and C-130 can help with training. The United Arab Emirates and Egypt, for example, both fly F-16s.

A few months after Rock arrived, in April 2011, Iraqi Army General Babakir Zebari, commander of Iraq's armed forces and the Ministry of Defense chief of staff, told the US Army news service: "I want to thank all of our friends from the United States because they are always committed to supporting Iraq's journey in democracy and helping us keep security and fight terrorism."

From the range of aircraft that Iraq's revived military aviation capability has, security and fighting terrorism will be the priority for some time to come. But, by the US military's own admission, Iraq's capability is "nascent" and at a time when the country and its region are unstable.



**“I really hope we will solve our problem with our brothers, the Kuwaitis. I have hope on this situation. I think it will happen within the next year.”**

**Capt Saad Mahdi Saeed Al-Khafaji**

## Historic airline takes the long road to recovery step by step

**Alan Peaford**  
*looks at the prospects for air transport in the country as it goes through its post-war transition.*

**S**ince the first invasion of Iraq by American and British forces in 1990, the country’s national carrier has been in a virtual state of suspension.

As the battles died down then, the US banned its nationals from flying on the airline and Kuwait Airways mounted a legal challenge for compensation over what it called the theft and destruction of its fleet during Iraq’s invasion of Kuwait, which led to the first Gulf War.

With sanctions and the legal case halting the development of the airline in the 1990s, the more recent Iraq War hammered another nail into what many believed would be the coffin of Iraq Airways.

But with the American withdrawal from Iraq, there is a mood of optimism in Baghdad that support will be given to help the airline get firmly back on its feet.

Analyst Saj Ahmad shares that optimism. “Of the Arab countries in and around the GCC, the potential that lies within Iraq is arguably second only to that of the potential possible in Saudi Arabia. While the Saudi Government has opened up the possibility of non-Saudi carriers operating domestically, Iraq is still struggling to develop both its aviation infrastructure and its own home-grown national icon airline,” he said.

At the Arab Air Carriers’ Organization (AACO) AGM in November, Iraq Airways took its place back at the table, although Kuwait Airways were absent.

Iraq’s CEO Capt Saad Mahdi Saeed Al-Khafaji was keen to talk to manufacturers, insurers and other airlines and expand on the potential for the airline.

“Iraqi Airways has a great history. We started in 1946 and were the best airline in the region at that time. Because of the sanction and the old regime, we deteriorated. But we are in healing in these days. We will be better every day.

“We will take our place again in the area step by step. We wish and hope we will be healthy again in short time.”

The elephant in the room as far as the airline’s long-term health is concerned is Kuwait Airways and what has turned out to be the longest running court case in legal history.

Ahmad sees that remaining a stumbling block. “Given the political fall-out of the first Gulf War and Kuwait’s entrenched intransigence in demanding damages and seeking punitive punishment on Iraq for the afflictions on Kuwait Airways, the Iraqi aviation scene is being dominated by other foreign airlines.

“With carriers like Gulf Air, Royal Jordanian, Etihad Airways, Qatar Airways, Emirates and most recently the expansion at Najaf and Baghdad by flydubai, the lack of a home-grown entity is being felt and Iraq cannot afford to sit by and do nothing.”

### Hands tied by the legal clouds

While its hands may be somewhat tied by the legal clouds thanks to Kuwaiti posturing, the Government of Iraq has two big orders waiting to be delivered. It has 30 Boeing 737s (variants not yet confirmed) and ten Boeing 787-8 Dreamliners on order. Demand to travel to and from Iraq is probably stronger now than at any time prior to the first Gulf War yet without a resolution between the Iraqi and Kuwaiti Governments over compensation, its highly likely that these orders will be deferred for some time and with it, the access for other non-Iraqi airlines will continue to grow. Al-Khafaji sees resolution on the horizon.

“I really hope we will solve our problem with our brothers, the Kuwaitis. I have hope on this situation. I think it will happen within the next year,” he said.

Al-Khafaji believes Iraq’s oil strength will also help both the airline and the airports develop a successful hub in Baghdad along the same lines as Emirates and Etihad have done in the UAE and Qatar has done in Doha.

“Baghdad is at the heart of the region,” he said. “We will reduce fuel prices by 10 or 15%. We have Lufthansa Systems providing ground handling and will offer the best service in the region. This, in turn, will improve Iraqi Airways. When we see other companies and airlines coming in. This will give us the courage and the strength to build Iraq Airways again.”

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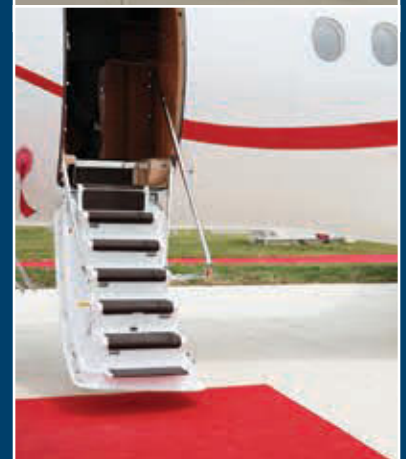
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*Iraq's aviation system is going through a phase of reconstruction. The airport industry across the country is earmarked for an estimated \$50 billion over the next few years, while in the Kurdistan region Erbil International Airport has led the way. Keith Mwanalushi reports.*

# Iraq's promised lands

**T**hroughout 2011 the Iraqi ministry of transport made a number of announcements about initiatives aimed at restoring the country's airports back to international standards as regular air services are slowly being resumed.

One such announcement was the selection of Lufthansa Consulting to evaluate the ground-handling requirements at Baghdad International Airport, as well as the international airports at Basra and Mosul.

The first phase of the project is currently still in progress. Lufthansa Consulting has developed an action plan to assess the local facilities at the main airports. "Our assessment includes a status-quo analysis of the existing ground-handling procedures, available resources, as well as the interfaces and bottlenecks in pre-sent operation," explained Catrin Drawer, director airport development and senior consultant.

The German consulting firm is also evaluating co-operation between all the ground-handling sectors and airlines, including other support areas such as immigration, ground traffic control and catering. "In addition, we are looking at an analysis of ATC communications – ground and tower – as well as the slot procedures in place," added Drawer. "We are also assessing the relevant infrastructure from an airline perspective; such as the passenger terminal, baggage-handling system, utilities, the fire service, ground service equipment and cargo warehousing."

Lufthansa Consulting is also overseeing the tender process, which is expected to run for three to four months. The overall project aim is to ensure the airport's operational readiness in 2012.

Meanwhile, just over a year into operations, the new \$365 million Erbil International Airport (EIA) in Kurdistan has reported growth of 39% year-on-year, with 2011 year-end passenger numbers estimated at 610,000.

November 2011 passenger figures, for instance, were up 49% compared to the same period in 2010.

#### **Positive story on growth**

"It's been a positive story on growth," said Andrew Jones, the airport's communications and marketing adviser. "We have had new airlines come in such as Turkish Airlines, Etihad and Egyptair. Turkish has already moved from three flights a week to daily. Etihad doubled from two to four and Atlas Jet has also had a good year."

The rate of growth during 2011 has been quite impressive; figures from EIA show that in the 12 months from September 2010 to August 31 2011, it processed 555,714 passengers, a 39% increase on the 399,603 passengers during same period the previous year.

That increase makes the Erbil airport one of the fastest growing in the world in percentage terms.

Cargo traffic, too, has seen dramatic increases with total tonnage of 10,713 by the end of August 2011 surpassing the total for the whole of 2010.

A comparison of the eight months from

January to August 31 2011 shows volumes were up by 62%.

The busiest routes, according to Jones, are to Turkey – Ankara and Istanbul.

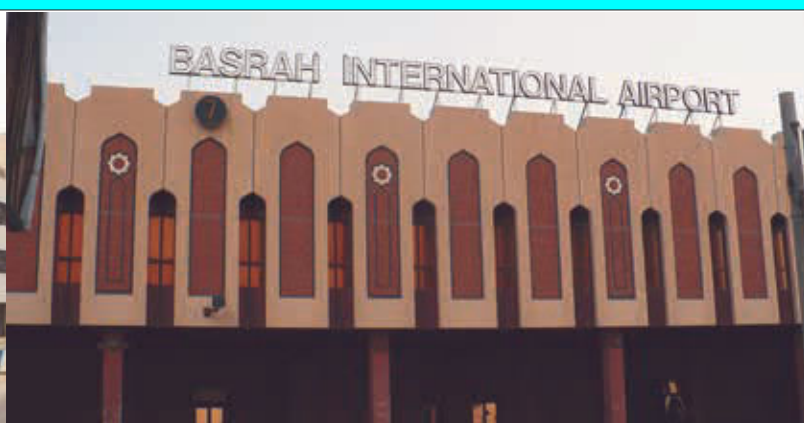
He also mentioned the Gulf carriers as doing particularly well in feeding their long-haul routes. "Etihad and Flydubai are the main two flying into Abu Dhabi and Dubai. Royal Jordanian was one of the first to fly here and it, too, continues to be successful. Austrian Airlines and Lufthansa each operate four flights a week."

EIA played host to the first Iraq Airports Expansion Cargo Logistics Conference in 2011 in order to showcase the importance it has placed on developing a regional cargo and logistics hub.

Jones said the cargo business performed well in 2011. "We are looking at around a 72% increase compared to the previous year. In terms of long-term strategy for the airport, cargo plays a significant part of our 30-year masterplan, as does warehousing, MRO facilities and other forms of aeronautical and non-aeronautical revenue."

Jones hinted that a range of incentives is in the pipeline to help develop EIA into an aviation cargo hub. "Part of the strategy is that, once refining capacity has been enhanced, we plan to offer subsidised fuel to cargo carriers and to be very competitive on price. We are not there yet but we should see refining capacity improve significantly in the coming months and once other logistics arrangements have been worked out, we can take it from there."





**Clockwise from top left: Baghdad International Airport in its current form; Basra International needs an upgrade before the Gulf Cup in 2013; old infrastructure being pulled down at Baghdad Airport.; EIA achieved 39% growth in 2011.**

Growth at EIA is fuelled by the fact that the airport cannot be divorced from what is happening around it. Kurdistan has been significantly more secure than other parts of Iraq. It is the scene of a major boom in construction oil and gas development and a whole range of infrastructure projects.

“There are an awful lot of activities going on here. Erbil is also home to a growing diplomatic community; a number of countries have their consulates here.”

Jones also pointed to rising numbers from the Kurdish diaspora. “The friends and family traffic as we call it; there are large Kurdish communities around the world, notably Nashville and San Diego in the US and Scandinavia and the UK in Europe. Now that there is an airport here, Kurdistan is accessible fairly easily and this kind of traffic is continuing to grow.”

In terms of the growth strategy for 2012, Jones said the airport would not expect to see another 39% and pointed out that there are limitations in terms of developing new routes. “We expect growth to slow – the airlines that were expected to come are already here. There are a number of barriers to the way the airport can market itself to would-be airlines and it’s important to note that we have no open skies policies here in Iraq,” he said.

He added that the insurance market does not differentiate between the rest of Iraq and Kurdistan.

Despite some limitations, Jones said the airport’s management would like to see more

direct flights to additional destinations such as the UK, France and the Netherlands. “Currently, this is not possible. Our strategy in 2012 is to help bring about the conditions where these sorts of flights are more likely to happen.”

Countrywide, the industry will be watching closely as various airport projects take shape.

It has been reported that Basra International Airport is to undergo major expansion and renovation in preparation to host the Gulf Cup in 2013. More than \$100 million has been budgeted for the purpose by the Iraqi transport ministry and the Basra Governorate, according to local sources.

#### **Repairing the runway**

The projects at Basra include renovation of the passenger terminal, repairing the runway, adding more aero bridges and other basic services, such as water and electricity.

The Ministry of Transportation (MoT) of the Kurdistan Regional Government is currently in negotiations with the American-based Ternir Group that are expected to lead to the development and construction of the first international airport within the Governorate of Duhok.

The parties have allocated approximately 700-1,000 hectares of publicly-owned land for the project, in a location just outside of the city of Duhok, the regional capital.

The MoT has identified sources of preliminary public funding for the project for at least 10% of

the projected construction costs. Ternir Group has been invited to assemble a team of investors, developers, construction and concessionaire companies and related service providers, the purpose of which will be to finance, build and operate the airport on a concession basis.

The Duhok Governorate is one of the three constituent provinces of Iraq that make up the autonomous Kurdish region of Northern Iraq.

A Ternir Group document states that the MoT planners and Ternir have agreed on a preliminary project concept which balances the concerns of building large infrastructure projects into new markets, with the conviction that current demand is strong enough to warrant a small, one-terminal airport designed to accommodate domestic as well as international flights.

The project currently foresees the construction of a 12,000sqm terminal at a cost of about \$50 million. It will include 10 check-in desks, immigration facilities, souvenirs and duty-free, a mosque, and a modern baggage-handling system. The plans show that the airport will feature four gates with direct bus access for both arrivals and departures.

The main runway will be designed to handle medium-range aircraft, such as the A320 (requiring a length of at least 2,000m). The airport will also have a state-of-the-art control tower equipped with modern navigational aids.

The construction of the tower alone is expected to cost \$6 million and the project is expected to take approximately three to five years to build.



*With the stability, security, and business development in the Kurdistan region of Iraq opening the doors to domestic and international business prosperity, it is no surprise that private aviation traffic into Iraq is growing. Kelly Green meets one of the top men making it happen – Dori Abouzeid, who used to fly Frank Sinatra.*

## Dori does it My Way...

**O**ne company already laying down the red carpet for the arrival of business and high-net-worth individuals is Macair Flight Support, the exclusive handler of all VIP aircraft at Erbil International Airport.

A subsidiary of US-based Macair Inc, Macair Flight Support offers specialised aviation services to accommodate all unscheduled aircraft, heads of state, and VIP flights into Iraq.

The red carpet treatment includes passenger and baggage handling, hotels and transportation accommodations, catering, customs and immigration, aircraft security, fuel arrangement and co-ordination – all of which is presented by multi-lingual staff, handpicked for their hospitality and customer service.

“I believe that anyone can do something but the attitude you cannot replace,” explained Dori Abouzeid, CEO and president of Macair Inc. “So we try to obtain the staff that have that constant smile on their face and a good attitude.”

The company also offers a 24/7 concierge service. “I noticed that there is a huge lack of that in the Middle East, and some places in Europe and the US as well,” said Abouzeid. “We have a live person answering the calls 24/7 with meticulous attention to detail.”

Abouzeid sets a high standard. As a licensed aircraft mechanic and a pilot (who used to fly Frank Sinatra) with around 14,000 hours of worldwide aviation experience, Abouzeid has built on his own travel experiences to instil the idea of the red carpet treatment at Macair Flight Support.

“Being a pilot and running an organisation I’ve gone through numerous FBOs worldwide, so I’ve seen the good, the bad and the ugly,” he explained. “We learn from the good and we try and leave the bad and the ugly aside.”

Abouzeid has been keen to do something in the region for a while and Erbil International Airport seemed the obvious choice of location.

“Erbil, specifically being a highlighted epicentre of Kurdistan, acts as a base for the rest of the area and soon to be key centre for the global business community and individual travellers. That requires safe and efficient air transportation for business and leisure travellers who would rather focus on serenity and business than worry about transportation and service,” he said.

“Economically, the region is moving rapidly ahead of the rest of Iraq and it has been reported that the economy’s growth this year is expected to be more than 7%. Additionally, due to a number of Kurdish-international relations, foreign business is encouraged and the regional government is encouraging high quality products and welcoming services.”

### Anywhere in the world

While currently Macair Flight Support does not have any crew on the ground in other parts of Iraq, as a subsidiary of Macair Inc it has more than 100 years of experience in aviation and an expansive network, so it can not only arrange for travel and all arrangements into any part of Iraq, but also to anywhere in the world.

And customers from a variety of areas are taking advantage of this expertise, including local and foreign businesses, government officials, and high-net-worth individuals and VIPs from all over the world.

“A lot of dignitaries are moving in and a lot of oil company executives are starting to come into Iraq, so that’s livened up the influx of airplanes,” explained Abouzeid.

To support this influx, Macair Flight Support has plans for expansion. “As the market continues to grow in the region and particularly in Kurdistan, the demand is going to be high for aircraft handling, chartering and aircraft management, so we believe that private jets will do very well there.

“We are enhancing ground operations with the construction of a new FBO, which is scheduled to open at Erbil International Airport in late 2012,” added Abouzeid.

“The new facility will provide hangars and offices capable of providing elite and efficient services including: ground-handling and aircraft services, fuelling, flight planning, executive hangars, line maintenance, aircraft sales and management.

“The facility will also provide safe, swift, and exceptional passenger-handling for all arriving and departing private aircraft, VIP lounge, a conference lounge, crew rest area, prayer room, exercise room and operations briefing room, among other amenities.”

**Dori Abouzeid: “Erbil, specifically being a highlighted epicentre of Kurdistan, acts as a base for the rest of the area and soon to be key centre for the global business community and individual travellers. That requires safe and efficient air transportation for business and leisure travellers who would rather focus on serenity and business than worry about transportation and service.”**



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# Airshow a symbol of Bahrain's fightback

*January's Bahrain Airshow is set to be bigger and busier than the first edition two years ago. Alan Peaford looks at what is in store.*

**B**ahrain is steeped in aviation history. It was in October 1932 that a Handley Page HP 42 first touched down on a packed sand strip on the island on Imperial Airways' maiden route between London and Delhi.

Within three years a regular service was in operation, followed by flying boat services to a waterway close to what is now Mina Sulman port as wealthy Europeans and Gulf traders made the most of what had become the Middle East's first international hub.

The British made Muharraq island the headquarters for the RAF activities in the whole Gulf region through the Second World War on the site of what is now Bahrain's international airport.

One former RAF pilot, Freddie Bosworth, returned to the island in 1949 with a seven-seater Avro Anson, where, with the support of local businessman Hussein Yateem, he created the Gulf Aviation Company to fly air taxi services around the Gulf states. Today that entity is Gulf Air.

Continued on Page 84



CONTINUED FROM PAGE 83

Concorde used Bahrain as its stopping point en route to Singapore. The world's major airlines called at Bahrain for refuelling. The first aviation training school was established in Bahrain and the island state was recognised as the hub for the industry in the region.

That history is important to Bahrain. The break-up of Gulf Air from its four-nation ownership hit Bahrain hard and a massive investment in infrastructure saw the UAE and neighbouring Qatar rise in importance.

But Bahrain is fighting back. Under the auspices of the ruler King Hamad bin Isa al Khalifa, and the drive of his son Sheikh Abdulla, the Bahrain International Airshow was launched in January 2010.

"This is unlike any airshow that has gone before," Sheikh Abdulla said. "It is overwhelmingly focused on the commercial needs of the aviation industry."

**Region's first Formula One**

Having won the rights to the region's first Formula One Grand Prix motor racing event, Bahrain had proved it had the capability to put on a show. But it turned to the UK company Farnborough International (FIL), which organises the biennial Farnborough Airshow, to help the country's department of Civil Aviation Affairs to make it work.

The brief was clear. It was to be spectacular. It was not to be like other shows with halls packed with exhibitors and it should cater for the upper echelons of the industry and the region.

"It was a tough challenge and a tough brief to achieve," said Amanda Stainer, FIL's exhibition director. "But the Bahrainis had a real will and desire to make it work."

Sheikh Abdulla said: "We wanted to remove the limitations that other shows have. We wanted exhibitors to be able to do on the spot demonstrations and even fly UAVs."

The international airport was ruled out and the Bahrain government literally moved mountains, as it cleared space around the military's Sakhir Airbase and built VIP chalets alongside an apron that served as a space for a static display.



**King Hamad bin Isa al Khalifa – committed to aviation growth.**

Despite the doubts of the cynics, the event turned out to be a major success and FIL was re-contracted to work on this year's event.

In February 2011, the uprising by Shi'ites protesting against the Sunni ruling family in the capital Manama and in surrounding towns and villages – linked in the eyes of the world's media to the Arab Spring revolutions happening in Tunisia, Egypt and Libya – focused attention on Bahrain, human rights, and the intervention by the Peninsula Shield force led by Saudi Arabia, to protect vital assets in the country.

The 2011 Formula One event was first postponed and then cancelled, leading many to question the viability of a second edition of the airshow.

Bahrain's king, in an unprecedented display of openness, called for an independent human rights commission to investigate claims of human rights abuses from both sides. That commission reported back in November. While there were still critics claiming the commission had not gone far

enough, there was an international acceptance that reforms were in place.

It became all systems go for the 2012 event.

According to Stainer, the event has received "good international support" with Airbus, Bombardier, Cessna, Lockheed Martin, Boeing, Embraer, TAG and GE honouring commitments to take chalets.

"We were amazed how it could be done first time round," said Saudi Arabia's Saad Al Wallan, whose company holds the Cessna franchise for the region. "Commercially we really benefitted from it – we are looking forward to being there again."

There is an increase in the number of official military and civil delegations that will be attending.

"Hopefully this year the markets are gaining strength, interest in the region is coming back, people are spending money, airlines are expanding. I think it's going to be fantastic for business this year," said Sheikh Abdulla.

**Strong Russian presence**

The airline business is certainly planning on being there. Sukhoi is bringing the Superjet 100 regional jet to Bahrain for the first time – and is heading a strong Russian participation, which sees Ilyushin Finance bringing the Tu-204SM, the Tupolev answer to the B757 aiming at the 200 seat market and believed to a target for Iran Airlines.

Headlining the Russian involvement at the show will be the fantastic Russian Knights flying display team with the spectacular Sukhoi Su-27s.

"We are absolutely thrilled to have the Knights performing," said Stainer.

Airlines in the region are also brand building at the show. Qatar Airways is bringing one of its 777-300s, Bahrain Air will have an B737 and AirArabia an A320. Embraer will be at the show in force having won orders from national carrier Gulf Air for its E170 regional jets.

Other displays include the Saudi Hawks, the Jordanian Falcons and the Red Devils parachute team. And there was last-minute confirmation that the UAE display team Al-Fursan would be making its international debut.

The Royal Bahrain Air Force is also expecting to make a major impact with an F16 display, as well as featuring the F-5, an RJ85, Bell 212 and a Slingsby trainer on the static line.

Special morning displays will also be carried out at the westerly end of the runway where a special public area has been set up with its own static display and a number of simulator rides and other attractions brought to Sakhir from the UK by FIL.

"International visitors will get a warm welcome from Bahrain and the Bahrainis," Stainer said. "Everyone is excited about the show. It will be great for business."

It's a long way from that first spluttering Handley Page arrival 70 years ago, but Bahrain is firmly back in business.



**Sukhoi is bringing the Superjet 100 regional jet to Bahrain for the first time.**



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# Al Zain builds on a wealth of opportunity



**Alan Peaford**  
*talks to*  
*Talal Al Zain,*  
*chairman of*  
*Gulf Air and the*  
*chief executive*  
*of Mumtalakat,*  
*the investment*  
*organisation*  
*dedicated to*  
*creating value*  
*on behalf of the*  
*Kingdom of*  
*Bahrain.*

**M**umtalakat has recently celebrated five years of existence. Like its rival Mubadala, a few hundred kilometres down the Gulf in Abu Dhabi, the organisation is tasked with delivering wealth to the country by developing a diversified and balanced portfolio of investments.

And like Mubadala, the team at Mumtalakat, believes there are opportunities in the aviation business that can be of immense benefit to the Kingdom.

Heading the executive team is chief executive Talal Al Zain, a highly respected investment banker with Chase Manhattan, Investcorp and Citibank.

Investments include a number of non-energy related assets in sectors such as aluminium production, telecommunications, real estate, financial services, food production ... and aviation.

Al Zain takes a special interest in the aviation sector. As chairman of Gulf Air, Bahrain's national airline, he has seen first hand that old adage of how do you make a million dollars from an airline? You start with two million.

But under his careful stewardship and with an experienced CEO of the airline in Samer Majali, Gulf Air is following a structured recovery plan and is beginning to see the results of its strategy.

"Gulf Air was the only one of businesses in our portfolio that was impacted by the crisis in the Middle East and here in Bahrain. That of course was understandable given the dependence on tourism and business travel. But Bahrain is healthy. Overall Bahrain is still very strong geographically and in an excellent location," Al Zain said.

With the Bahrain International Airshow just around the corner, Al Zain believes the event is a showcase not just for the aviation world but for industry as a whole.

"Because of our existing system, the regulations, the

economic policies that were put together over the last 11 or 12 years since the economic development board (EDB) was set up, has given the economy a strength that it can continue to operate even during downturns," Al Zain explained

"During the financial crisis in 2008-9, the impact on Bahrain was minimal and continues to grow at 4 -4.5% GDP. Our banking sectors had strong balance sheets because of the regulatory system. We have never had liquidity problems and in fact Bahrain banks have wanted to do more business."

It is this financial reality of a strong regulatory system that exceeds standards set in other major financial centres linked with the strong liquidity that Al Zain believes should form the bedrock for companies wishing to set up in Bahrain.

"Unlike other places in the region we do not want to create monopolies," he said. "The economic vision for 2030 from the EDB focuses on to improving standards of living. One of the main verticals in the vision is competitiveness not monopolies. Bahrain is open for investors and companies from the whole world."

#### Aerospace heritage

Al Zain said that the company's aerospace heritage – it was the main hub for the Middle East for half a century and home of the first Gulf airline – and its geographic location were key factors for aviation companies to consider when looking at Bahrain.

"Overall Bahrain is an excellent location. We are 24km from the deepest and strongest economy in the region. And the GCC is responsible for 50% of all growth across the MENA region. Bahrain will always attract business," Al Zain said.

"Another competitive advantage is that we do have trained, educated local talent. If you hear His Majesty the King, the prime minister or the crown prince, when they speak about the economy and the future they always, always focus on dependency on the local people.

"While expats are critical part of our society it is the local talent, local people, that provide sustainability. As Mumtalakat further invests in the aviation sector it will generate more opportunities for Bahrainis and seek support from expatriates to provide to us the know-how."

As well as Gulf Air, Mumtalakat owns the Bahrain Airport Company, the Gulf Aviation Academy and the MRO provider Gulf Technics. It is an active supporter of the Bahrain Airshow.







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## Rwanda the hub of Nexus growth

*The Bahrain International Airshow gives companies operating from the island the chance to display their products and services to the world. Alan Peaford talks to one company with global ambition.*

**O**ne company that has been firmly developing a growth plan for international development is Bahrain and Saudi Arabian-based Nexus, the flight operations services provider, which is now aiming to expand its operations into Africa.

During the early part of 2011 Nexus, part of the Saudi Arabian MAZ group, said it planned to establish a new flight operations centre (FOC) in Kigali, Rwanda – a first for Nexus in Africa, as well as the first of its kind on the continent.

The company said at the Dubai Airshow that these plans are on track and the launch date will be confirmed soon.

The new centre is to be the largest of its kind in Africa and will adhere to the highest industry standards and strictest international regulations, Nexus said at the show. It will be extremely advanced, boasting state-of-the-art technology in flight operations services to cater to local and international customers alike.

Local staff will undergo 180 hours of rigorous training at Nexus headquarters in preparation for the opening, in order to have the capacity of delivering a wide range of services. The company aims to offer complete 24/7 support and back-up facilities for Nexus Africa through its well established FOCs in Jeddah, Saudi Arabia and Manama, Bahrain.

The expansion has been made in partnership with Crystal Venture.

The Rwandan Civil Aviation Authority plans to make the country a regional hub for air transport operation by ensuring aviation safety and security and providing an excellent airport environment with the ultimate goal of promoting tourism and trade. This comes as part of its bigger vision to improve the private sector and infrastructural development within the country.

Despite having a tumultuous history, Rwanda has since strengthened politically and economically, and welcomes

hundreds of thousands of tourists, witnessing exponential growth annually.

With this strategically placed, fully-equipped FOC lying at the heart of Africa, Nexus believes it is well positioned to meet the needs of its clients – VIP fleet operators, private aircraft owners, and low-cost airlines – throughout the entire continent and beyond.

MAZ group chairman, Mohammed Al-Zeer, said: “We have been waiting for the perfect time to announce our opening and we know that this is now coming. This move will solidly position us at the centre of the aviation market in the Middle East and Africa. Our ultimate aim is to be globally recognised as the leading African provider of flight operations services, employing the best, serving the elite and being respected by industry leaders. This is only our first step.”

Abdullah Al-Sayed, president and chief executive officer of Nexus, said: “I have been thoroughly impressed with the extent of Rwanda’s purity, lack of corruption and their organisation skills. We at Nexus feel very proud to be able to tap into such a determined country’s great potential and share this hidden gem with people from all over the world. However, while Nexus will be implementing the highest of international standards at the FOC, just as we do with our other bases, we will still retain a local flavour.”

Crystal Ventures chairman Manasseh Nshuti added: “CVL is wholly owned by Rwandan business people who pooled resources to meet the challenges of economic recovery and take advantage of growth opportunities in a virgin environment. We thrive on innovation, application of appropriate technologies and attracting the best management talent to stay ahead of competitors in all our businesses. This joint venture with Nexus more than meets our intentions and values and we are happy to say that the Rwandan business playing field is becoming more developed and competitive every day.”

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*Bahrain's goal of once again being recognised as a major hub of aviation expertise has been enhanced by the successful investment into its training school. Alan Peaford reports.*



**GAA has invested heavily in simulators and will now feature four CAE full motion sims including the latest Airbus and Embraer aircraft.**

## Gulf Aviation Academy stepping up in class...

**W**hen the first Bahrain International Airshow opened its doors two years ago, one of the newest players there was GAA, the Gulf Aviation Academy.

The academy had been taken out of the Gulf Air portfolio by the group owners – sovereign wealth fund Mumtalakat – to become a separate commercial entity.

This year, GAA goes to the show, head high having made major inroads into the training sector across the region.

According to CEO Tim Shattock, the academy is now working with 15 airline customers – including Bahrain's national carrier Gulf Air – and is expecting to extend this number this year.

"I am really pleased with how it has gone so far," Shattock said. "But we are now looking further afield and in particular are talking to airlines from Africa."

A key element in any training provider's success is keeping up with changing trends among airline customers.

GAA had seen national carrier turn its attentions to right sizing with the leasing of a number of Embraer 170 regional jets. A type also in use by Oman Air and Saudi Arabian Airlines.

The Muharraq-based training centre elected to invest in an Embraer 170/190 series simulator from Canada's CAE.

"We are very pleased to have this full flight simulator in our portfolio," said Shattock. "This new simulator is Level 'D' certified and was ready for training in July 2011. It enables us to provide dry and wet Embraer 170/190 training to Embraer operators in the MENA and wider region. We are also adding technical training for the type for engineers and technicians."

A fourth simulator – an Airbus A330 – is due to be delivered later this year.

At the Dubai Airshow in November, GAA went a stage further and added a cabin emergency evacuation trainer for the E190 and another for the A320. The \$2.2 million contract was signed with Ras Al Khaimah-based crew training device manufacturer Spatial Composite Solutions.

Spatial has delivered cabin trainers to Oman Air, Etihad and Virgin America but this will be its first Embraer cabin.

"A lot of people talk about pilot training, but training cabin staff is equally important," Shattock said. At the moment crews for Embraer aircraft have to go to places like Switzerland for this training. We believe Bahrain will be a great alternative.

"These simulators will help us ensure that cabin crew are trained to the highest industry standards."

Spatial will build full-size replicas of actual Airbus A320 and EMB190 fuselage sections, which are designed to create a realistic cabin environment to train people on all aspects of emergency evacuation procedures. These incorporate flight deck, fully operational doors and evacuation slides. The trainers should be delivered in the summer later this year.

### Smoke and fire simulation

The devices feature smoke and fire simulation, decompression and sound effects. Operation systems simulate emergency scenarios in both the passenger cabin and flight deck and can be manually activated for on-the-spot emergency scenarios or pre-programmed on a touch-screen computer.

"I believe this will give GAA a great advantage in winning new business from several airlines that have added Embraers to their fleet in recent times," said Spatial CEO, Joe McKeever.

GAA success – recognised in regional awards – has also struck a chord with the Bahrain government and its goal of boosting Bahrain's status as a premier aviation hub and playing a vital role in the training and upskilling of Bahrainis.

The academy is training Bahraini nationals as pilots and cabin crew in conjunction with the government's employment agency, Tamkeen.

"We feel very privileged to have been chosen to assist in the delivery of such training programmes and feel the added value we bring to them as trainers will really aid the candidates to make their aspirations realised," Shattock said.

There has been international recognition of the standards too with approval as a Type Rating Training Organisation (TRTO) by both the Bahrain Civil Aviation Affairs (BCAA) and the United Kingdom Civil Aviation Authority (UKCAA). The Academy was also awarded BCAA as well as Civil Aviation Authority International (CAAi) Initial Safety Training (Cabin Crew) Organisation Accreditation for training cabin crew and is the first training academy outside Europe to receive such accreditation from the CAAi.

**CEO Tim Shattock (left) agrees the cabin trainer deal with Spatial's Joe McKeever.**



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Alsalam was at the Dubai Airshow demonstrating that the Saudi Arabian MRO shop has completions in its sights.

# MAINTAINING STANDARDS

## MRO businesses add finance and completions to regional offering

**W**hen the doors open at the co-located MRO Middle East and Aircraft Interiors Middle East events on the first day of February, organisers will be expecting some bright-eyed eager delegates.

For with the growth of orders from the region's airlines, the specialist niche markets are suddenly big news.

The 165 aircraft ordered at the 2011 Dubai Airshow sees Middle East carriers with almost as many aircraft on order (764) as in service (896).

Michele Van Akelijen, aerospace director at F&E Aerospace which is organising the AIME event, said: "Aircraft manufacturers are now fulfilling the huge orders by this region's carriers from seats to connectivity to the latest in in-flight entertainment."

Meanwhile, the MRO aspect of the event is organised by US media company *Aviation Week*, which quoted Bill Lay, PricewaterhouseCoopers'

*Alan Peaford looks ahead to the MRO Middle East and AIME shows and says economies of scale have put the region's niche businesses on a new footing.*

Dubai-based partner as saying by 2015, the UAE will have more commercial aircraft than Japan, now the world's third-largest economy.

But while there have been grumbles from the region's airlines in the past about the lack of support close by, there are now clear signs that international MRO providers have woken up and smelled the Arabic coffee and are working closely

to set up their own or be in partnership with local companies, to develop MRO facilities.

Historically, much of the region's MRO work was sent abroad but it now local fleet sizes approach a critical mass, it makes sense to maintain aircraft at home. And ambitions of home-grown businesses to fill the void has seen sovereign wealth investment from the likes of Mubadala (Abu Dhabi) and Mumtalakat (Bahrain) begin the move along the spectrum from a dipped toe into the water to a fully immersed global player.

The region's airlines have already questioned the value of contract maintenance with flydubai, Emirates, Turkish and Saudi Arabian Airlines already having MRO capabilities in-house.

But at the Dubai Airshow it was clear that many of the local airlines and service businesses are focusing on partnerships.

Continued  
on Page 94

Turkish Technic, Abu Dhabi Aircraft Technologies (ADAT) and Aerostructures Middle East Services (AMES) have all recognised the benefits of collaboration and at the February show are likely to be at the forefront again.

A year ago, ADAT formed an exclusive relationship with International Aero Engines (IAE) to work on certain V2500 engines that are included within IAE's aftermarket maintenance packages. ADAT also has had a broad strategic agreement with GE Aviation since 2008, and its parent company Mubadala Aerospace – owners of SR Technics – signed another agreement with Hamilton Sundstrand for Boeing 787 components.

The aircraft interiors and completions businesses are the main crossover point with the MRO providers.

Turkish Technic has already developed partnerships with OEMs such as Goodrich and with Pratt & Whitney at Sabiha Gokcen airport south of Istanbul where they provide nacelle and thrust reverser repair and rotatable support, and CFM56 series and IAE V2500 engine repair.

But now the company has linked with Turkish Airlines and TAI the Turkish Aerospace Industries to develop the Turkish Cabin Interior Systems (TCI) and with Turkish Airlines and Assan Hanil Automotive Industry and Trade Co to develop aircraft seat manufacturing in Turkey.

Meanwhile, in Saudi Arabia, Alsalam, the well-respected MRO provider developed as an offset company, has created a venture with private aviation business MAZ Aviation to specialise in VIP completions.

The Riyadh-based company has already successfully completed VVIP cabins for government C130 aircraft, while the new Turkish venture is due to deliver its first retrofit programme for Turkish Airlines before the end of March.

Turkish Technic's general manager, Ismail Demir, also said the company is targeting low-cost carriers for its new seat and the Dubai show could be the first time the seat is shown.

For the Saudis it is the bespoke market that attracts them. Mohammed Fallatah, Alsalam CEO said: "Our VIP interior design, refurbishment and completions reflect the passion we have for excellence in the most discerning of markets."

Fallatah said he expects much of the VIP



**Aerostar's CEO Ajay Chaukulkar sees engine leasing as a valuable add-on to the company's Sharjah-based MRO offerings.**

refurbishment lies in existing equipment but that means a complete refurbishment and not simply changing the carpets.

Already Alsalam has faced some design challenges, but all have been taken in the company's stride.

"Some of the new completions we have include unique features," said Fallatah. "One challenging task was to fit the bathroom with an unusual stone. It was a beautiful blue type of stone, which we managed to track down in Afghanistan. That was a challenge, but we managed it and the interior looks stunning. It really adds a personal touch when customers request such things."

Mubadala has also been looking closely at the completions business. Its European MRO subsidiary, SR Technics, opened its Zurich VIP completions centre a year ago and has now brought in its first customer aircraft – a wide-body completion for an undisclosed Middle Eastern customer.

There are suggestions that Al Ain could also soon be the site of a major completions operation, perhaps in partnership with an established player.

While international big brands are embracing partnerships there is also still a desire to establish their own positions.

Joel Haldemann, VP for Europe, the Middle East and Africa confirmed Goodrich still aimed to align with its customers' businesses rather than pursue alliances. "In terms of partnerships, we

have a strategy to develop our own campus," he said.

At November's Dubai Airshow the company did just that. It announced an expansion of the range of services offered by its Dubai-based Middle East MRO campus to support a growing list of operators and products.

Among those operators is Emirates.

Goodrich signed deals with the Dubai carrier to deliver comprehensive overhaul and support services for the suite of 16 passenger evacuation slides on the Emirates Airbus A380 fleet. All maintenance work will be conducted at the Dubai MRO campus.

Ammar Al Zaben, Emirates' vice president of procurement (Aircraft), said: "Goodrich's comprehensive, quality support offerings and locally-based MRO campus make it easier to do business. These were key factors in our decision to outsource this activity to Goodrich."

"Airlines, generally like to work with the OEM and have more confidence with the OEM support," said Antoine Succar, general manager of AMES, the Aircelle and Air France joint venture which launched at MRO/AIME two years ago.

The company launched operations in March 2010 and delivered its first overhauled thrust reverser for the Rolls-Royce Trent 700 engine to Gulf Air later the same year.

Providing the right financial deal is also key to MRO success in the region. Sharjah-based Aerostar has launched an engine leasing business to add to its current offering of engine repair, maintenance and overhaul, aircraft acquisition and supply of material and spares. CEO Ajay Chaukulkar said he is now determined that the company should take the next steps in its development and has bought two V2500 series engines from IAE to form the first part of the leasing business.

"We are targeting the Indian market, where there are 300 A320 aircraft in operation and no other leasing companies," said Chaukulkar. "We have linked the lease with our MRO service, so the engine coming off wing can visit us for repair."

"Engine leasing is a specialised business and high risk because of the costs involved. We believe that with the correct infrastructure and secure lease transactions we can be successful." Chaukulkar expects the business to grow rapidly, with a huge market of new generation engines coming due for service.

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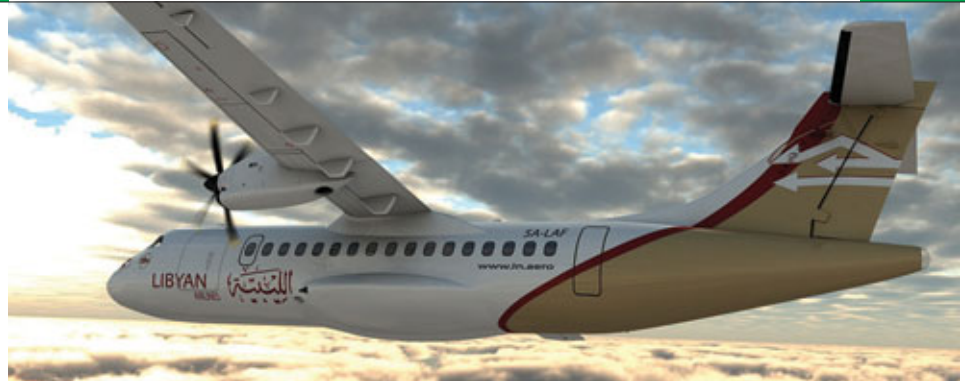
# Long-term support contract for Libyan Airlines

In a first for the two groups, Libyan Airlines and AFI KLM E&M have signed a long-term contract covering component support (pool access and repairs) and maintenance checks for the Libyan carrier's A320 and ATR 42-500 fleets.

Working with Air France Consulting, the MRO is helping return the airline's aircraft, damaged during the recent Libyan hostilities, to revenue service.

AFI KLM E&M was created when Air France Industries and KLM Engineering & Maintenance joined forces following the merger of their parent airline companies.

The MRO firm now has a joint workforce of more than 14,000 offering comprehensive technical support for airlines, ranging from engineering and line maintenance to engine



overhaul, as well as the management, repair and supply of aircraft components, structured around a powerful logistics network.

It supports close to 1,300 aircraft operated by 150 major international airlines but this is its first link with the Libyan national carrier.

According to the Dutch-French venture, its expertise on the A320 product and its many years' operational presence in the region convinced Libyan Airlines to sign the contract, which covers component support and maintenance checks for its seven A320-200s (three on order) and two ATR 42-500s.

Flight Captain Khaled Taynaz, CEO of Libyan

Airlines, said: "AFI KLM E&M's presence in Libya for several years encouraged us to sign this contract, after a period of negotiations, to support our Airbus and ATR aircraft."

Fabrice Defrance, senior vice president commercial AFI KLM E&M, said: "We are extremely satisfied with the signing of this contract, which highlights our leadership position on the A320 product at the same time as it allows us to expand our ATR client base."

The arrival of two aircraft in Toulouse is an important step towards the operational implementation of this contract, which received the decisive support of the French Government.

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Troy Lambeth:  
"We're looking  
forward to  
expanding our  
position in the  
Middle East."



## Sanad, the support with a big part to play

*Mubadala Aerospace is developing a wide-ranging footprint in the region's MRO scene with the latest success story – Sanad Aero Solutions. Alan Dron reports.*

The Mubadala Aerospace MRO portfolio of SR Technics, Abu Dhabi Aircraft Technologies (ADAT) and Sanad Aero Solutions were among the stars at November's Dubai Airshow with all announcing contracts – both individually and as a combined MRO network.

The international contracts and recognition through partnerships has reinforced the confidence the Abu Dhabi sovereign wealth fund had in its decision to focus on MRO work as the major string to the UAE's bow in pursuing its aerospace ambitions.

The three companies give Mubadala the scale it needs in the marketplace to achieve success, said Sanad CEO Troy Lambeth.

Sanad (the name comes from the Arabic 'to support') was set up as a component and engine financing entity to help airlines' liquidity positions by buying and leasing back spares that would otherwise tie up funds by sitting on warehouse shelves as inventory.

"We took a hard look at the spares market," said Lambeth, "whether engines or rotatable components that either break or reach pre-determined life limits. The industry has always had to support parts that were just lying around. We concluded there was a huge amount of spare parts and engines that the industry was holding that we could add value to."

The market in which Sanad operates has been estimated to be as high as \$35 billion and, with forecasts of a further 12,000 new aircraft entering service in the foreseeable future, airlines would have to find a future \$18 billion to support their new fleets.

Sanad believes it can help ease that burden, said Lambeth.

Having been launched with the task of investing in spares for long-term lease, it struck its first deals at the end of 2009, with a mandate for \$1 billion of business in its first five years. To date, around \$250 million of asset transactions in engines and rotatables have been written, with associated long-term MRO contracts valued in excess of \$1.6 billion.

"From a business plan perspective we're ahead of schedule," said Lambeth. "Going back to that \$1 billion, five-year target we're a quarter into that period and expect

to be halfway through that [figure] as we go into 2012. I'm happy with progress so far."

He added that in 2010 the commercial MRO industry globally was a \$43 billion sector, with that figure set to rise to \$47 billion this year and to \$60 billion by the end of this decade.

"This industry never has any shortage of challenges," said Lambeth. "There was a lack of liquidity in 2008/9 and there are questions on liquidity today."

This potentially makes the lease-back of major maintenance items, such as engines and undercarriage systems, more attractive to airlines.

"We're looking forward to expanding our position in the Middle East," added Lambeth, who noted that the region is forecast to be one of the three fastest-growing regions for civil aviation over the next decade.

One of Mubadala's other MRO units, SR Technics, has a footprint in Europe, while Sanad and ADAT have a growing presence in the Middle East. Additionally, Sanad made an initial foray into the Asia-Pacific market last September 28 with a contract from Virgin Australia for a comprehensive financing and access agreement for spares for the carrier's Boeing 737NG and Embraer E-Jet fleets.

It followed on from the agreement signed in August between Virgin Australia, Sanad and SR Technics. That deal leveraged the full scope of Mubadala Aerospace's MRO capabilities and included major component maintenance and technical training agreements supporting the carrier's Airbus A330 fleet. It was complemented by a broad scope component financing solution from Sanad.

The September contract was the largest single transaction to be struck by Sanad. Together, the deals would create additional liquidity and fiscal flexibility for Virgin Australia, said Lambeth.

Other major deals have been struck by Sanad with Germany's Airberlin, and in Mubadala's backyard with Etihad Airlines. Sanad also recently finalised an agreement to provide financing of rotatable components for Hamilton Sundstrand products on the Boeing 787 Dreamliner, as part of a wider arrangement with ADAT and SR Technics.

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## Bombardier Middle East customers 'feeling the love'

*Support for service and parts supply will be a key topic of discussion at the MRO Middle East event. Bombardier has made no secret of the fact it wants to return to the top spot in customer satisfaction when it comes to support and Phil Nasskau finds out it is working on enhancing its support services in the region.*

**E**ric Martel is very clear about the reasons why Bombardier opened its regional support office (RSO) in Dubai just over a year ago.

Bombardier's president, customer services and specialised and amphibious aircraft, said: "We felt we couldn't do our customers justice by supporting them from Montreal. We needed to be in their time zone; the Middle East is a key region for us and we are projecting significant growth there."

He added that since opening the office in December 2010 the physical presence means "customers are feeling the love".

Recent additions to the Dubai RSO are a liaison pilot and another field service representative, which brings the staff numbers up to five, with Martel more than happy to add more people when they are required.

This RSO is just one of the ways in which Martel is ensuring the company climbs back up the support rankings. He said: "We feel that we are catching up very well already and we are committed to getting back to number one for support – like we were in the 90s. Customers flying business jets are demanding and we have to make sure that we are supporting them in their region."

Martel admitted that one of the challenges he faces over the short term is finding the right technical capability so that the company can focus on providing support locally, and preferably in a customer's own language.

One area where the company has seen a need is in spares. It will be adding to its parts inventory in Dubai, although no figure is yet available because Martel said the company is still working on the details.

Presently, parts in stores in the region are valued at around \$11 million. He said: "We are going to increase our parts significantly – we

will do what we have to do. If we have to triple the parts, then we'll triple the parts."

Martel believes that already the parts inventory in the region is a significant contribution as it ensures that the customer is served more rapidly.

Aside from parts, he is keen to ensure the company can move forward with its goal of providing support locally, which is why the plan is for Bombardier to operate a series of support hubs with facilities in Amsterdam and Frankfurt forming the start for the hub to support Europe, the Middle East and Africa.

As such, the company has been awarded certification at the Amsterdam factory service centre from the GCAA. Martel said: "There is a lot of traffic that comes from the Middle East to Europe and now if they are visiting Europe and want factory maintenance on their UAE-registered aircraft, they can have it."



**Eric Martel:** "If we have to triple the parts, then we'll triple the parts."

Currently the company has no plans to open a factory-owned service facility in the region but, as the installed base and fleet traffic grows, then it may be considered. However, Martel says there is no magic number that determines when the company should open its own service facility.

The company's service network includes nine owned facilities and 51 authorised business aircraft centres and a further five authorised commercial aircraft facilities. In the Middle East it has a Global family simulator at the Emirates-CAE flight training facility in Dubai and will be adding Challenger 604/605 capability at the same location by the end of July 2012.

The newest regional authorisations were for Challenger 604/605 types and were awarded to Jordan's Arab Wings in April and Turkey's MNG Jet in July 2011.



## Traceable Safety and Cost Effectiveness for ADVANCED JET CLEANING SOLUTIONS



Two leading cleaning equipment experts for MRO (Maintenance, Repair and Overhaul), FinnSonic and Galvatek, combined their expertise to design a comprehensive new cleaning concept - CE4MRO. It is designed to promote safety and cost effectiveness in aviation industry jet engine cleaning solutions.

**R**apidly increasing air traffic numbers place increasing pressure on the MRO operations for faster turn-around and better quality service without compromising the strict safety levels. As a result, today's aircraft engines have a critical need for cost effective and rapid maintenance service, which leave little or no room for human error. An aircraft is a complex vehicle, which requires component handling processes that are better documented, better controlled, more reliable and energy efficient.

The new CE4MRO concept offers comprehensive operational solutions for cleaner engine components, faster cleaning processes and reduced failure rates. It is created by two global cleaning experts: Galvatek, the leading manufacturer of surface treatment systems, and FinnSonic, the industrial cleaning solutions expert. The aim is to provide aviation MRO customers with a complete solution for their maintenance and service cleaning requirements.

### BETTER RESULTS FASTER WITH LESS OPERATIONAL COSTS

The beauty of the CE4MRO is its fully automated and encapsulated cleaning lines, which maximize energy efficiency and safety and minimize the use of space. This state-of-the-art engine cleaning shop layout includes the main chemical cleaning product, the bearing cleaning product, the FPI product, the DI water and wastewater treatment plant and the blasting cabinets. Any single part can also be installed to fit customer requirements.

Automated handling and crane systems make working easy and safe. Each tank is efficiently ventilated and covered for added safety and energy loss reduction. Advanced ventilation eliminates fumes and chemical spills are prevented through a range of safety and alarm features. The system measures and records changes in process conditions and any non-conformity in set values will raise an alarm. With automation comes a cleaner, healthier working environment and better recyclability.

### ENVIRONMENTALLY FRIENDLY

Impressively, CE4MRO is estimated to halve labor costs, cut ventilation costs by up to 70 percent and offer substantial savings in energy consumption. Most processes are based on environmentally friendly aqueous chemistry, where a combination of aqueous solutions and ultrasonic cleaning requires fewer chemicals than manual cleaning processes. A state-of-the-art wastewater treatment plant recycles an incredible 90 percent of the water back into the system.

Traceability, safety and cost effectiveness are undeniable benefits that speak volumes on behalf of the fully automated engine cleaning services that CE4MRO offers. It is a more safety-oriented world of automation, process documentation and remote diagnostics.

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*The MENA region has seen its fair share of new airlines starting up over the past few years and one or two collapsing, but as Kelly Green finds out, a new workshop may stop old mistakes from being repeated.*

## How to make sure your start-up isn't a big let-down

In March the Airline Business Plan Development: How to Start an Airline workshop is being brought to the Middle East for the first time.

Organised by Aeropodium, the third international workshop is being hosted and sponsored by the Gulf Centre for Aviation Studies (GCAS), following the success of editions in Washington DC, and London.

The workshop is being led by Dr John Wensveen, president and CEO of Airline Visions, an IATA faculty member, and an expert on low-cost and low-fare high value airline operations specialising in projects requiring start-up expertise.

Anthony Frances, partner at Gates and Partners, will also be speaking.

Wensveen explained that when it comes to launching an airline in the Middle East “one must fully understand the current markets served alongside the niche market opportunities that exist for a start-up carrier”.

“Is it realistic for a new airline to successfully operate without fear of competition from an existing airline? If the answer is yes, pursue the opportunity,” he said.

Wensveen pointed out that, historically, airlines in the Middle East have been owned and financially supported by their respective governments. “However, as governments realise the high fixed costs and massive financial losses associated with airline operations, many are bailing out of the airline industry or creating a more liberalised environment in which to operate, meaning new opportunities for start-up air carriers,” he said.

“Start-ups have the advantage of beginning with a blank slate with no excess baggage, if you will. Business models can be created as real businesses with the intention of making money and not satisfying political motives.”

But starting up an airline is not without its pitfalls and not all new airlines will be successful.

“It is important to clarify that airlines don't fail,” said Wensveen. “It's the managements behind the airline that fail. The airline industry is, perhaps, the most highly regulated

industry in existence and the associated risk factors are lengthy.”

According to Wensveen, the fundamental problem with many new airline start-ups is not doing enough homework in terms of market research and day-to-day operations. “Today, in order to survive long-term, management must have a solid idea of the market to enter and make the right decisions to operate in such an environment,” he explained.

“In addition, management must have a contingency plan in place with a full understanding that the proposed business model will fail.

“Flexibility is key in the business model so the airline can adapt to the changing environment and continue to operate successfully. Acknowledge the risks! Do not hide the risks! By following this methodology, the business model will incorporate strategies to reduce such risks.”

### High barriers to entry

For those hoping to start up their own airline, be warned: the airline industry has high barriers to entry. Wensveen's advice is to thoroughly investigate the following topics: industry conditions and competition, implementation of growth strategy, operating in international markets, government regulation, aircraft fleet availability, fuel, seasonality and cyclicity, labour relations and availability, dependence on key personnel, reliance on third parties, lack of prior operating history, and lack of public market.

“Also, it is important to note, one should not go into the airline business with a long-term goal of operating a successful air carrier forever,” he added. “An exit strategy is important to identify before the airline commences operation. This should be a key piece in the business model.”

While many start-up airlines may not survive in the long-term, there is still a great appeal to getting involved in the high-profile airline industry. “The paycheck is tremendous if done successfully,” said Wensveen.

“In today's environment, success is measured on the following – the right business model, the right money and the right people.

“Airlines must avoid over-expansion and under-capitalisation and find a niche market where there is little to no competition. If an airline expects to compete head-to-head with a well-established air carrier, the start-up will most likely fail as it does not have access to the same resources the longer established airline has, no matter the financial state of the competitor.”

The Airline Business Plan Development: How to Start an Airline workshop will take place on March 15 at Al Bateen Executive Airport, Abu Dhabi. Themes include: introduction to the airline industry, generic versus airline business plan, common business plan mistakes, non-disclosure agreements, elements of the airline business plan, implementation plan, management and support team, risk factors, capitalisation plan, certification, and success strategies.

**Kuwait's Wataniya Airways was a promising start-up but failed after lack of capital.**



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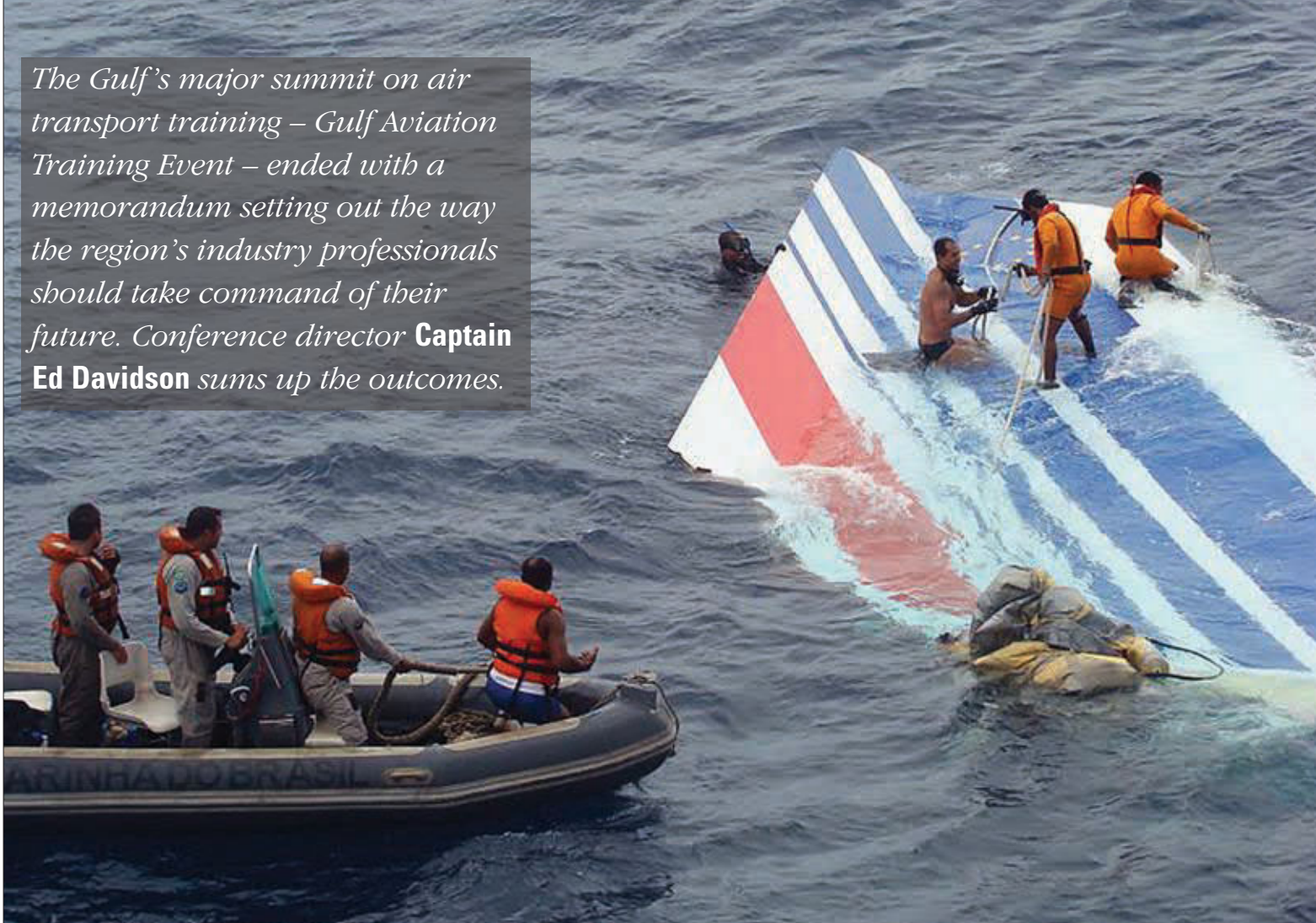
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*The Gulf's major summit on air transport training – Gulf Aviation Training Event – ended with a memorandum setting out the way the region's industry professionals should take command of their future. Conference director **Captain Ed Davidson** sums up the outcomes.*



# GATE's way to safer flying

**W**ith the recent publication of the leaked cockpit voice recorder (CVR) transcripts from the ill-fated Air France 447 crash in the Atlantic, airline industry professionals everywhere have recoiled at the seemingly unfathomable lack of basic piloting skills demonstrated during those final three minutes of digitally preserved communication.

While the underlying causes of the accident are still under investigation, one fact is crystal clear to most of us charged with the training and oversight of our fellow airline professionals – if it can happen to an experienced, respected and closely

Continued on Page 106

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**CONTINUED FROM PAGE 105**

regulated airline, it is likely to happen to any of us.

More than any other, that single realisation appeared to define and motivate the work and dedication of the globally-recognised experts who convened on the margins of the 2011 Dubai Airshow to hold the first Gulf Aviation Training Event – GATE 2011 – and produce the seminal document of immediate action items for discussion by their industry colleagues, now known as the GATE Memorandum.

Designed as an annual conference of the best and brightest minds in air transport training and regulation, GATE 2011, and the GATE Memorandum that grew out of the two mornings of debate and deliberation, set a high bar in the on-going dialogue within the community on the fundamental airline training challenges and, more importantly, potential solutions for the maintenance of quality training for the next generation of airline pilots.

With keynote speakers and panel moderators from the ranks of senior safety, regulatory and airline executives, the conference was intentionally designed to be at once provocative and controversial.

The format and interactions with the panels by the assembled GATE delegates, who represented a wide



**Captain Ed Davidson – GATE was provocative and controversial.**

spectrum of the user community and industry overseers, was designed to confront the issues head-on – issues other training conferences tend to gloss over, such as how do we ensure the quality of graduates from out-sourced pilot training, how much automation is too much and what is the most effective role of the training regulator in an environment of limited financial and manpower resources?

The keynote speakers challenged the panels and delegates to be creative and thought-provoking, while the panel moderators took on the debates in a no-holds-barred fashion. The resulting dialogue created a number of focused solutions that surprised both the participants and the organisers with their clarity and candour.

Put forward as a road map for the training industry, the GATE Memorandum left little doubt as to either the top challenges or agreed solutions to thorny problems that have long afflicted those who must design pilot training in an era of tight budgets, less experienced pilots and higher expectations by safety overseers, airline managements and the travelling public.

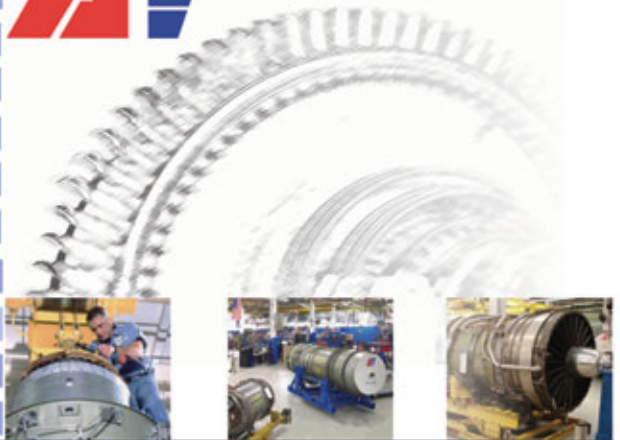
What follows are the principal deliberations and recommended solutions that form the core of the memorandum and demonstrate the industry isn't afraid to confront its challenges head-on.

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## Outsourcing – ensuring the likely future of pilot training

Led by Alan Peaford, a long-time industry observer and currently editor-in-chief of *Arabian Aerospace*, the outsourcing panel enjoyed a spirited debate.

Few, if any, existing airline VPs of flight training want to publically admit it but the oversight and quality of both their ab initio and recurrent training when ‘outsourced’ to third-party providers frequently results in a lower quality of training than that produced by an in-house staff closely overseen by their own regulator and provided by motivated TREs who, unlike a contract instructor, often have to fly with the trainees later in line operations.

While the panel and delegates, some of whom represented outsourced training providers, had some wide disagreement on that statement, the reasons for the quality concerns were more easily agreed – manpower and standards.

With the background information that more than 35,000 pilots will be needed to staff the projected expansion of Gulf-based air carriers over the next several years, the panel was quick to agree that outsourcing was the only viable tool available to airline management to reasonably mitigate the increasing and highly variable demand on relatively fixed facilities within constrained manpower and training budgets.

There was also wide consensus that, for the same reasons, neither regulators nor the airline could be depended upon to provide the level of quality control necessary to ensure that a trainee produced in the outsourced schoolhouse met the same level of performance standard as the one produced in-house.

Add to that the delegates’ clearly expressed concerns surrounding the diminishing level of experience of those pilots now entering the training pipeline, and the case for immediate action became clear.

What was surprising to many was the recommended solution.

After some initial finger-pointing, it became clear that an outside and respected organisation

## Evidence-based training – no more “jumping through hoops”

**Moderated by industry veteran and Emirates Airline senior VP of flight training, Captain Martin Mahoney, the application of evidence-based flight training was one of the more hotly-debated sessions – particularly after it became evident to the panel that few delegates understood the term and fewer still the processes involved in developing and overseeing what many still consider a radical departure from the old-fashioned and regulatory comfortable ‘manoeuvre-based’ system.**

**After considerable discussion, a full description of the process by Captain Mahoney and frank exchanges of position, the delegates became more comfortable that the system represents a likely more effective and cost-efficient method to develop a pilot, whose training is virtually custom-tailored for his specific needs as demonstrated by data captured about his flying style and capabilities.**

**While most panellists and delegates could agree on that point, what was not agreed was the fact that the industry should press for wide-scale implementation without first spending some efforts on educating both regulators and operators on the scheme’s benefits, costs and operation.**

**Therefore, the GATE action item was to ask IATA to take on that task with assistance by selected industry veterans of that type of training.**

had to take on the mantle of standard-bearer for the quality certification of those outsourcing providers.

While it was agreed ISO 9000-type audit organisations were of importance to the process of quality certification, it was also agreed they were not situated to provide the level of informed and industry-specific insight needed for such a technical certification – this was particularly so with respect to the deeper needs of the ab initio training schools challenged to maintain both significant academic and technical competence.

The delegates quickly settled on IATA as the likely organisation that had both the capabilities and the required knowledge to not only develop but also actually “enforce” quality standards

within the industry – much as it does with the successful and widely respected IOSA audit scheme.

IATA’s representative to the panel, Achim Baumann, the Mid-East Region director, was caught somewhat by surprise but was quick to agree to discuss the proposal internally with Montreal.

## The manual handling debate – and a surprise result

Able led by Captain Alan Stealey, the industry-respected chairman of the IATA Operations Council and divisional senior VP of flight operations at Emirates, the final debate on the highly controversial subject of how much manual handling training should be part of initial and recurrent training was eagerly anticipated.

With recent revelations from the Air France 447 crash’s CVR as the unfortunate background fodder, what has quickly become a staple of the pilot web board tirades about the negative influence of automation was surprisingly non-controversial to the GATE delegates.

While the delegates and panel all agreed the increase in automation has probably contributed significantly to lower cost and greater safety, they also agreed that poorly implemented automation policies at many air carriers and the manufacturers’ penchant to “over automate” some basic cockpit functions had resulted in a degradation in manual flying skills of today’s glass-cockpit, fly-by-wire flight crews.

In a carefully worded statement, the GATE Memorandum makes it clear the delegates felt it necessary to support automation but to support increased levels of manual handling drills in both initial and recurrent training within the context of what is hoped becomes a more holistic approach for future flight crews.

With the publication of the first GATE Memorandum, conference delegates, panellists and organisers are hoping the industry carefully reviews their recommendations and begins serious study on implementation.

With the overwhelming training demands that are facing the airline industry in the next 10 years as represented by recently released Boeing and Airbus market reports, as well as the rapidly diminishing resources to accomplish the task, the GATE Memorandum stands as the first step in the necessary blueprint for ensuring the continuation of what most Gulf nations have readily acknowledged as the engine of their economic expansion – a safe, robust and economically stable airline industry.

To view the entire GATE Memorandum go to [www.gates.aero](http://www.gates.aero).

■ *Ed Davidson FRAeS is the former senior vice president, fleet, for Emirates Airlines and is now senior vice president for the aerospace practice of Tetra Tech AMT. He was conference director of GATE 2011.*

## Quality and money – breaking the unholy connection

**As the leader of this debate, I had the pleasure of moderating a candid discussion on the current unhealthy relationship between the cost of a pilot’s ratings, his capability to obtain and pay back financing, and the impact that situation will continue to have on ensuring a wide selection of capable pilots for the industry.**

**There was wide agreement that there is no direct relationship between the size of a pilot candidate’s bank account and his eventual flight operational capability. It was also agreed that the industry couldn’t afford to have its pilot choices be the result of a candidate’s credit score.**

**With only a few dissenters, it was clear the delegates and panellists favoured a system similar to that currently employed by ab initio pilot training provider CTC Wings, which has developed a creative airline and bank-sponsored scheme that first pre-qualifies the candidate based not only on his financial wherewithal but also an objective analysis of future flight training success potential.**

**It then structures a repayment scheme within the financial capabilities of the pilot’s income and requires a certain level of commitment from the pilot in return. Eventually, the ‘loan’ is fully amortised and the pilot gets the career he wants and is qualified while the air carrier is ensured of quality and the bank of repayment – a true win-win-win proposition.**

**This, then, became the GATE recommendation for the way forward and stands as a clear example of the creativity needed to solve some of these more intractable issues.**

*As debate rages throughout the Middle East about a single Arab sky for air traffic management,*

**Rob Coppinger** *looks at the progress Europe and the USA have made on programmes to transform their air traffic management with new technologies and asks what lessons can be learned?*



# Hopes and fears as

**L**aunched in 2004, Single European Sky air traffic management research (SESAR) is a European Commission project managed by the SESAR joint undertaking (SESARJU) organisation.

Three years later, in 2007, the United States government started funding its NextGen process, which is overseen by its Federal Aviation Administration (FAA).

Upgrading European and American air traffic management (ATM) is expected to be worth hundreds of millions of dollars in savings for their respective societies. With air traffic set to double by 2020, improvements are also viewed as a necessity simply to stop a worldwide systemic logjam.

For the technology providers there will be greater opportunities as other regions in the Middle East, India and the Far East follow step and update their ATM systems.

According to the 2011 Deloitte study ‘Transforming the Air Transportation System: A business case for program acceleration’, by 2035

savings of hundreds of millions of dollars will be accrued from NextGen and SESAR, with the overall economy gaining a third of it, airlines a further third and passengers the final third. What both SESAR and NextGen have in common is that they promise to transform the global air transport system by introducing satellite-based positioning, navigation and timing technology, real-time digital data communications, advanced weather sensing and other precision navigation technologies.

#### Overseeing co-operation

The International Civil Aviation Organisation (ICAO) is overseeing co-operation between NextGen and SESAR.

Despite the fact the new technology is predicted to deliver huge societal savings by the EC, FAA and Deloitte, both NextGen and SESAR have been criticised for delays, for what the eventual cost might be for industry and for not being given enough resources by their respective governments.

However, it is the Europeans that are facing a situation where, ten years after SESAR began, research will still be on-going. This is causing uncertainty for the end-users that will have to buy SESAR-derived equipment and concerns about the eventual cost.

The Association of European Airlines (AEA) said the expected cost of introducing SESAR technology for its members was “€8 billion for commercial aviation, around a €1.3 million retrofit cost per aircraft. Payback is only foreseen within seven years and this depends on other partners (the air navigation service providers) delivering their part.”

Part of the reason for this cost is that the development of the equipment, the “industrialisation” of the research, as the EC calls it, has yet to take place and the actual timetable is not clear. The SESARJU said: “SESAR will move into industrialisation as soon as the projects are mature enough, which hopefully will be fully in line with our proposed timing. The 2016 timeline is a date for the current lifetime of the SESARJU



The NextGen  
evaluation lab.

# ATM is transformed

and not related to the industrialisation, per se.”

Thales would be in a prime position to exploit SESAR for its own products. The French company has a prominent role in SESAR because it has been selected to co-lead the three work packages dedicated to the development of the new generation of ATC systems that will be the backbone of the European ATM network.

Thales joined SESARJU in 2009. It describes its SESAR role “as the lead manufacturing industry investor in SESAR... involved in 159 different projects”.

Yet the company is not as clear in its explanation when asked when it expects to have SESAR-developed equipment it can sell? It said: “SESAR will lead to the definition of new air and ground ATM standards, which will represent new operational and technical ATM systems and airborne equipment baselines. Thales plans to offer equipment and systems that meet new ATM standards as soon as market demand is established. In Europe, this will be performance-driven and determined by mandates and

implementing rules, which will have to be applied by air navigation services providers and aircraft operators.”

The fact that SESARJU is not associated with the industrialisation of the research is another concern for the airlines, which are looking ahead at the deployment phase that was planned to start in 2014.

#### Coalition opposition

In a joint September 2011 statement, a coalition of aviation organisations made clear their opposition to EC plans for deployment. The coalition consists of the European Regions Airline Association, the AEA, International Air Transport Association, European Business Aviation Association, European Low Fares Airline Association and the International Air Carrier Association. They said: “Airspace users fundamentally oppose the concept of a contracted deployment manager. Such a concept raises legal questions with regard to the compatibility with [Single European Sky] regulations. A private set-up would never be capable of resolving the critical issue

of conflict of interests, nor would it have the required enforcement power.” Instead, the coalition wants a revised SESARJU to oversee deployment.

Thales commented: “European public funding and a deployment governance structure should be approved and implemented as quickly as possible to enable initial deployments across Europe in the next two to three years.”

Meanwhile, the FAA’s NextGen is already seeing some technology deployed. Raytheon’s terminal data distribution system (TDDS) is in use by the FAA.

The TDDS integrates data from a number of ATC tower and airport systems using the FAA’s system-wide information management (SWIM) infrastructure. SWIM is viewed as a key enabler of NextGen and there is a SESAR equivalent SWIM that it is in development.

Another product that is being developed is Raytheon’s ground-based sense-and-avoid technology for unmanned air vehicles, also known as drones. This, according to the company, is going

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through concept evaluation with a US customer. "It is designed to provide military and civil air traffic controllers with the capability to avoid airborne hazards around unmanned aircraft systems."

Because of the inherently global nature of air transport, interoperability of the US systems being deployed now and the European technologies that will arrive later this decade is a key part of the FAA and SESARJU's work. The FAA said: "We've been working closely with SESAR for a few years now. In technical terms the MoU with the European Commission has been signed and formal co-ordination activities under the SESAR annex have begun."

Under the MoU, work began between the FAA and SESAR on data communications.

SESARJU said: "The interoperability work is progressing according to a set of priorities and will result in resolution of where operational procedures or technologies need to be "identical" in content, or where they may need to be "dissimilar" but compatible in content, and where changes need to be synchronised in time between NextGen and SESAR in order to support or achieve interoperability. This work will be co-ordinated at an ICAO level to ensure appropriate links and compliance with the global block upgrades activity."

### Tremendous leadership

Marion Blakey, president and chief executive officer of the Aerospace Industries Association of America, is also a former administrator of the FAA. She said: "ICAO is providing tremendous leadership in this area and I'm privileged to participate on the future of aviation challenge team that is helping to move this process forward. ICAO's new framework relies heavily upon industry involvement at the technical level, as well, and places several US companies on centre stage for the global harmonisation process."

At that technical level Blakey points to US and European firms that are already collaborating. "Airbus, as a part of Boeing's System Engineering-2020 team, has been selected to provide ATM and performance-based navigation expertise for FAA's greener skies initiative," Blakey said.

Thales added it was performing R&D activities related to SESAR-NextGen interoperability, future avionics and ATC operational improvements through study contracts and the systems engineering-2020 R&D contracts with US companies Metron Aviation and ITT.

But the AEA is not so up-beat about the interoperability situation and what it means for the equipment that will have to be installed. AEA members fear that they will have to buy one lot of on-board equipment for NextGen and another for Europe. "If SESAR and NextGen are not aligned it will further undermine their business case. This is a problem. SESAR and NextGen, as well as other regions, should align their deployment strategies and avoid different solutions for similar problems or airlines will withdraw their support."



## NextGen targets efficiency and volume

**NextGen is the transformation of the United States air traffic management system using satellite-based technology.**

First funded in 2007, NextGen is being managed by the US government's Federal Aviation Administration (FAA).

The goal is a more efficient air transportation system with more capacity. The FAA expects to achieve this through space-based navigation and integrated surveillance, digital communications, layered adaptive security, the integration of weather into decision-making, advanced automation of ATM and net-centric information access, which means information is more readily available to users.

The NextGen timetable foresees automatic dependent surveillance - broadcast (ADS-B) for most of US airspace by 2020. Through ADS-B aircraft are told their location by satellite navigation and then the aircraft broadcast that data.

The NextGen technologies are expected to deliver up to 60% more airport capacity and a reduction in delays from weather of more than 80%.

Today thousands of aircraft crossing the US are flying indirect routes to take them over radar towers. With satellite navigation and constant communication, the FAA expects more direct routes will be taken saving time and fuel. The FAA is expecting to "see savings of hundreds of dollars per flight" by 2018.



## SESAR looks to conquer Europe

**Single European Sky is an initiative launched by the European Commission in 2004 to reform the architecture of European air traffic management.**

Unlike the United States, Europe does not have its air navigation managed at a continental level; it is overseen by the patchwork of nation states.

Yet Europe's airspace is among the busiest in the world with more than 33,000 flights on busy days and high airport density.

As part of the Single European Sky initiative, the Single European Sky ATM Research (SESAR) project is developing the new generation air traffic management system for greater efficiency and capacity.

The EC claims that SESAR "will help create a

paradigm shift [in ATM], supported by state-of-the-art and innovative technology". The new ATM technology will operate over a 30-year period.

SESAR has three phases – the definition phase that lasted from 2004 to 2008, the development phase, which has been on-going since 2008 and was planned to end in 2013, and the deployment phase that was to take place from 2014 to 2020.

The definition phase delivered the ATM master plan, defining content, development and deployment plans. The development phase is producing the technology and operational procedures and the deployment phase will see the large-scale production and implementation of the ATM infrastructure.



*One of the first areas in the region to benefit from the latest air traffic management technology is Dubai. Alan Peaford looks at how Dubai World Central is adopting the new systems.*

## New ATM set to go live at Dubai World Central

**R**aytheon is on track to provide Dubai with the world's most modern air traffic management (ATM) system to safely and efficiently meet Dubai's ambitious airport and air traffic growth plans.

The company's next generation ATM, AutoTrac III (AT3), installed at Dubai World Central's Al Maktoum International Airport, is scheduled to be operational in early 2012.

Raytheon is no stranger to the region and has quietly been delivering ATC systems across the Middle East, including installations in the UAE, KSA, Oman, Lebanon, Iraq and Kurdistan.

While most people would recognise Raytheon for its activities in the defence sector, the company is actually a global leader in ATM, with systems in more than 50 countries helping to control more than 60% of the world's airspace.

Raytheon is building on its recent successes in the Middle East, India, Asia Pacific region and the United States, to meet its goals of creating safe and efficient airspace infrastructure designed to accommodate the projected growth in global air traffic.

The AT3 system will provide ATC automation for the Dubai terminal airspace and approach control services for Al Maktoum International, Dubai International, Sharjah International, and Minhad Airbase. The system will also support tower operations at the Dubai International and Al Maktoum International.

The Dubai AT3 system includes advanced safety and efficiency features, such as multi-radar tracking capabilities,

advanced flight data processing, advanced safety net functions, online data interchange, arrival and departure management, and electronic flight strips.

Raytheon network centric systems director of international ATM, Stephen duMont, said: "Raytheon's next generation ATM automation system provides a high-performance, cost-effective solution for the world's rapidly growing air traffic demands. It contains the most advanced surveillance and flight data processing systems available today and we are extremely pleased that our partnership with Dubai Aviation City Corporation Engineering Projects and Dubai Air Navigation Services will give the emirate the world's most modern ATM system to safely and efficiently meet its ambitious aviation growth plans."

In India, AT3 is operational and being used to control the airspace in three of the country's four flight information regions (FIRs) at centres located at Delhi, Mumbai and Chennai airports. These installations are an important milestone in Airports Authority of India (AAI) plans for the modernisation and transformation of the country's airspace – which is among the world's most rapidly growing aviation and air traffic markets.

### Area control centre

Raytheon is also under contract to deliver AutoTrac to the Indian Air Force at 28 airfields located across the country.

Further afield, Raytheon has been selected to supply its AT3 system for Hong Kong Civil Aviation Department's (CAD) new area control centre at the Hong Kong International Airport. The CAD's new centre will be three times larger than its existing facility and AT3 will replace an earlier version of the AutoTrac system that has been operational in Hong Kong since the mid-1990s.

The Hong Kong system will provide comprehensive next generation air traffic management capabilities to control some of the world's most complex and congested airspace safely and efficiently. Raytheon is also providing a development system to permit training and certification of new air traffic controllers.

The AT3 system features a modern open architecture design and high performance characteristics and Raytheon says it is fully adaptable and scalable to any ATM environment, ranging from a simple tower automation application to a fully integrated national multi-centre system.

"It contains the most advanced flight data processor and displays available today," said duMont. "The next generation ATM technology presents information to the controller in a coherent, integrated fashion on a situation display. This information includes flight, surveillance, aeronautical and meteorological data, enabling the controller to make timely and efficient decisions to expedite the flow of air traffic."

**Stephen duMont: Dubai will have the most modern ATM system to meet growth plans.**



*Honeywell is promoting its range of software products as a solution to increasing growth while reducing airspace congestion in the MENA region.*

**Steve Nichols** reports.

## Software the answer to making hard decisions

**A**ccording to the latest figures from IATA, demand for flights throughout the Middle East is booming, fuelled by the introduction of low-cost carriers and the growth of global business.

And it looks like the growth trend is not going to reverse. But can the Middle East's air traffic management infrastructure keep up? And what additional tools can be used to ensure that it can cope in the future?

Honeywell's Paolo Carmassi, president of aerospace for the region, says a lot of work needs to be done.

"The numbers are staggering. Earlier this year IATA forecast that international passenger demand would grow by almost 10% in the Middle East by 2014," he said.

"The UAE, Kuwait and Jordan will be among the top 10 fastest-growing countries, with the UAE ranked seventh for international passengers at 82.3 million. International freight demand will grow 8.1% as freight links to and via the region continue to develop. And the UAE will lead the region, handling 2.7 million tonnes of cargo."

Hub airports in the region have also expanded, often dramatically – Dubai Airport opened in 1960 with just a single sand runway and today handles 47.2 million passengers every year. Moreover, it is now due for a further \$7.8 billion expansion.

With the flight environment reaching near-saturation levels, modernising airports to reduce congestion in the skies, enhancing airport operation, and improving overall air traffic efficiency and safety, is now critical.

"Clearly the infrastructure will be tested, the airports will be tested, but hopefully the passengers won't be," said Carmassi.

He says Honeywell is tackling some of the key issues "head on".

"Operational efficiency is key to meeting current and future air traffic demands, more so than ever before with fuel prices remaining volatile and question marks hanging over the state of the global economy," Carmassi said.

Honeywell is a key member of the single European sky

ATM research (SESAR) group, which aims to reduce average flight times in the region by between eight and 14 minutes, cut 300 to 500kg of fuel and reduce CO2 emissions by at least 948kg per flight by 2020.

"Anyone who has flown in Europe will know about delays," Carmassi said. "One of SESAR's aims is to reduce the average delay to a minute or less."

Despite its European title, SESAR's work is finding favour further afield too. Some of the technologies coming out of SESAR are just as applicable in the MENA region.

"Air traffic management technology that reduces congestion and improves efficiency by enabling more planes to fly optimised routes is available today," said Carmassi.

As an example, he points to Honeywell's own "Smart" range of products, including SmartPath, SmartTraffic, SmartLanding and SmartRunway.

SmartPath is a next-generation ground-based augmentation system (GBAS) delivering precision navigation, promising to increase airport capacity, decrease air traffic noise and reduce weather-related delays.

By providing precise landing guidance data, Honeywell says that SmartPath enables aircraft to fly either straight in or perform complex approaches that a conventional instrument landing system (ILS) cannot.

"It's also easy to install and offers major cost savings compared with ILS," said Carmassi.

One GBAS installation can cover all ends of all runways, whereas ILS covers only one end of one runway, requiring additional installations for complete coverage at an airport.

One SmartPath system installed at a typical airport can yield annual maintenance savings of up to \$500,000 for an airport using ILS on two runways.

Honeywell says replacing ILS with GBAS technology has been identified as a key component in the FAA's next generation air traffic management plan and SESAR.

Carmassi added that another Honeywell product – a traffic collision and avoidance system called SmartTraffic – also has a lot to offer the MENA region.



**Paolo Carmassi:** "Clearly the infrastructure will be tested, the airports will be tested, but hopefully the passengers won't be."

# AIR TRAFFIC MANAGEMENT

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*As Gulf-based airlines continue their rapid expansion, ATC organisations in the region face rising volumes of flights, both within and transiting the area. Already, as Alan Dron reports, capacity constraints are being experienced.*

# VOLUME CONTROL

**T**im Clark, president of fast-growing Emirates airline, is on record as saying that regional air traffic management limitations are a major hindrance to faster growth.

Emirates, Etihad and Qatar Airways are all continuing to expand at a remarkable rate. And growth in the region is accelerating with the routes initiated by booming local low-cost carriers such as FlyDubai, Air Arabia and NAS.

These include both intra-Gulf flights and those to completely new markets, such as southern Russia and the Central Asian republics.

Traditionally in the Gulf, regional traffic has essentially operated on a North-South axis. The increasing use of Dubai, Abu Dhabi and Doha as hubs means that streams of East-West flights are intersecting those routes.

Currently, ATC in the Gulf is – like Europe – fragmented along largely national boundaries. In the Gulf, there are no fewer than six flight information regions (FIR) – Muscat, Kuwait, Bahrain, Emirates, Sana'a and Jeddah. Just beyond those lie further FIRs based on Amman, Cairo, Damascus, Baghdad and Tehran.

Moves are now afoot by the Civil Air Navigation Services Organisation (CANSO), which represents the interests of air navigation service providers (ANSPs) worldwide, to tackle the problems of lack of capacity and fragmentation of the region's airspace.

This takes the form of two initiatives: the first is the Middle East Regional Airspace Review (MIDRAR). This will seek 'quick wins' to help improve capacity in the short term, as well as studying the eventual restructuring of the entire airspace based on performance-based navigation, plus standardising operating procedures and the integration of systems.

Secondly, CANSO is organising the Middle East ANSPs, users and stakeholders engagement (MEAUSE). Under this, a forum has been

established at which CANSO's regional members can come together with industry partners to share information, discuss priorities and harmonise future plans.

"In the Middle East we need to have a fresh look at the situation that will transcend narrow national interest to embrace regional concerns," said Salem Jahdli, CANSO's director, Middle East affairs.

"The aviation industry is, by its nature, a cross-border business. No matter what we do locally it remains incomplete without reaching out to establish close co-ordination and systemic harmonisation with your surrounding ANSPs and, beyond them, with all aviation stakeholders."

MEAUSE, he said, was creating an improved understanding between the various parties in the region, giving them a better appreciation of each other's problems.

## Future procurement

For example, any future procurement of communications, navigation, surveillance/air traffic management (CNS/ATM) systems, would have to be co-ordinated with relevant stakeholders to ensure compatibility.

An example of the problems to be solved can be seen in the Jeddah FIR, which covers Saudi Arabia and is the largest FIR in the region. The eight FIRs surrounding it each have different separation minima. These variations can lead to problems in traffic flows over Saudi Arabia, especially during busy periods, as transiting aircraft tend to want to fly at the same altitude bands to maximise fuel efficiency.

The MIDRAR study would look into various aspects of airspace management, seeking solutions that would accommodate more flights and enable separations to be reduced, said Jahdli. Among the hoped-for solutions were shorter, more direct routings that would save fuel and cut emissions.

Included among the 'quick wins' being

pursued under MIDRAR, he added, was the exchange of radar data between the various FIRs – radar coverage for many of the FIRs overlaps with that of their neighbours – to allow for reductions in aircraft separation. That, combined with better management and communications, would allow air traffic controllers to handle a greater volume of traffic.

"With some states, such as Saudi Arabia and Egypt, this is already happening," he said. "A memorandum of understanding exchanging radar data has been signed and trials are under way at the moment."

MIDRAR is also looking at integrating air traffic management systems, a move aimed at reducing the load on controllers and ensuring that data flows more smoothly. This would be achieved by transferring data between ATM systems automatically. By having the systems 'talk' to each other, controllers would no longer have to call colleagues in neighbouring FIRs to pass on flight data.

One major additional problem in the region is the large amount of restricted military airspace. Much of this is used only during certain times of the day or night for training sorties and airlines and ANSPs have argued that it could be made available over the rest of the 24-hour cycle.

They have pointed out that military concerns about civilian airliners passing over sensitive areas are now redundant, given the Google Earth facility that allows anyone to see swathes of the planet on their computers.

"There's so much restricted airspace within the region," agreed Jahdli, "but we're starting now to establish communication with the military." In Saudi Arabia, for example, civil and military negotiators were trying to agree 'flexible use airspace', which would give airlines access to currently restricted zones when not required for military training purposes.



Massimo Garbini (left) and Abdulrazag M Zatout sign the agreement to train Libyan air traffic controllers.

“We’re engaging the military so we understand each other’s requirements,” he said.

The ideal future situation for ATC in the Gulf would be a ‘Single Arabian Sky’ along the lines of the long-planned Single European Sky system, which aims to ease the problems caused by similarly fragmented air traffic control over Europe.

Such a solution for the Gulf remains some time in the future, believes Jahdli. Co-ordination, integration and standardisation of operational procedures would have to be achieved first, before going further and tackling more fundamental political issues such as sovereignty of airspace.

Meanwhile, CANSO Middle East will hold its fourth annual conference in Cairo from January 23-25, with a theme of bridging multiple regions, reflecting the fact that the aviation business transcends national boundaries and requires all stakeholders to remove barriers that restrict the smooth and safe flow of traffic worldwide.

The conference will also take place against the backdrop of ICAO’s new approach to develop a future ATM system – aviation system block upgrades – which calls for a set of improvements that can be implemented to enhance ATM performance globally.

This could pave the way for more efficient traffic management with Europe and set the stage for future integration to SESAR, the technology behind the Single European Sky, to realise the ultimate goal of seamless air traffic management.

As in Europe, however, the key to the success of these efforts will be the acknowledgement of the region’s politicians of the benefits that co-operation brings and of responding to the on-going demand for capacity.

## Italian job helps to re-open the Libyan skies

Libyan air traffic controllers are undergoing training in Italy and at control towers in Benghazi and Tripoli thanks to a deal signed with ENAV, Italy’s air navigation service.

The move means that Libya will be fully reopening its airspace for full, safe commercial activities.

The Libyan Minister of Transport, Yussef Al-Whishi, met with Massimo Garbini, the CEO of ENAV, in Tripoli in early December. A memorandum of understanding was signed that sees the Italian company provide training and mentoring to reopen the skies.

The pair were joined by the Italian Ambassador, Giuseppe Buccino Grimaldi, and the director general of Libya’s civil aviation authority, Abdulrazag M Zatout.

Zatout and Garbini signed the agreement, which offers the immediate provision of training courses for Libyan air traffic controllers and, following that, the development of Libyan air navigation assistance services, ground technology to ensure the safe execution of flights and the development of an air traffic management system.

“Air traffic will be normalised thanks to the execution of the technical agreement and Libyan air flights will start circulating again. Normalisation is paramount for Libya’s economic development,” Zatout said.

The terms of the deal provide that ENAV offers Libyan controllers, free of charge, the possibility to obtain once again the operational certification after a 10-month interruption of the service due to the closing of airspace.

ENAV completed its first one-month programme on January 11 2012. Some 30 ATC instructors and controllers were trained for two weeks (one week based on theory and the other week based on practice) in ENAV’s Academy, based in Forlì.

They then returned to Libya, accompanied by their Italian instructors, for a third week of training in-situ. This enabled the airspace to be reopened.

As Libyan instructors reactivated air traffic service control, ENAV instructors began training 180 Libyan controllers. These professionals will be split into different teams, depending on the qualification required, to operate in the area control centres of Tripoli, Benghazi, and at other control towers located in the main airports.

ENAV is also providing a flight inspection service through its own fleet of properly equipped aircraft. It will monitor Libyan radio assistance in order to check radio signals during the take-off and landing phases and to certify the main air navigation services from the ground, in compliance with the highest air safety standards.

# HOLY LANDINGS



**T**hese are incredibly busy times for Turkish construction and airport operator TAV. Fresh from winning yet another tender for the construction and operation of the Izmir Adnan Menderes Airport until the end of 2032, this year TAV begins civil works at the airport of Medina, Saudi Arabia. “We have already arranged the financing prior to the tender; it is one of our biggest objectives to start the investment in the project at once and to ensure early completion,” said chief executive Sani Sener.

The construction project is expected to last three years.

Prince Mohammad Bin Abdulaziz International Airport (IATA: MED, also known as Medina Airport) first opened in 1972. It currently handles scheduled domestic and regional flights. It is, however, more famously known for the surge in charter traffic that congregates during the Hajj and Umrah religious season.

“Demand for Hajj and Umrah have historically been constrained by infrastructure limitations, not only at Jeddah and Medina airports, but also at urban facilities in Mecca and Medina respectively,” observed Sener.

It is estimated that the world’s Muslim population will grow to 2.4 billion by the end of the Medina Airport concession term and Saudi Arabia wants to transform Medina as an international airport, particularly to promote it as an entry/exit hub for the pilgrims and visitors to the Prophet’s Mosque.

The TIBAH consortium partners – TAV Airports, The Al Rajhi Group and Saudi Oger Limited – won the tender to finance, design,

*Plans are under way to build and develop a cost-effective, state-of-the art passenger terminal at Saudi Arabia’s Prince Mohammad Bin Abdulaziz International Airport in Medina.*

**Keith Mwanalushi** talks to TAV chief executive Sani Sener about *the strategy for developing Islam’s second holiest gateway.*

build, maintain and operate the new airport for a period of 25 years using the build, transfer, operate (BOT) model; it is the first airport privatisation of Saudi Arabia. The assets will, at all times, be owned by Saudi Arabia’s General Authority of Civil Aviation (GACA).

#### **Construction and management**

An investment of up to \$1.5 billion will see the construction and management of a new passenger terminal building at MED. “The consortium will soon take over the operations of the existing airport and will begin construction of a 220,000sqm passenger terminal building, passenger boarding bridges and aprons, as well as assorted runway rehabilitations and extensions.”

MED is the fourth busiest airport in Saudi Arabia. Back in 2004 it handled just over 1.5 million passengers, including 378,715 Hajj charter passengers. Throughput is expected to increase to eight million passengers per year and 15 million prior to the expiry of the concession period in 2036, according to Sener. “It’s a substantial increase from the 2010 traffic levels of

3.3 million passengers,” he added.

Religious traffic is no doubt a key driver. Medina has become a major centre of Islamic education and culture. The population is mostly young, educated and increasingly mobile. It is home to the new Medina Knowledge Economic City, an \$8 billion centre consisting of nine million square metres of built-up area.

Sener is optimistic that the ripple effect of this development will translate into increased traffic movements at the nearby airport. “It is envisaged to provide 20,000 jobs and accommodate 150,000 people by 2020. Strong local economic demand combined with religious tourism will encourage more scheduled air services, and may ultimately encourage air carriers to base aircraft at Medina,” he said. “Also, the government is actively promoting religious tourism and making substantial investments at the holy sites, together with private sector investments.”

Sener believes that the private sector, having invested large sums in real estate and other infrastructure, will become a natural ally to lobby the government to increase the number of Umrah visas issued each year.



**Sani Sener:**  
**“We want to start  
 the investment in the  
 project at once.”**  
 Photo - TAV

He described the design concept for the new passenger terminal as one that will reflect Hejazi architecture and the serenity of the city. He added that the consortium had designed the airport in a manner that would ease the airport’s future expansion and allow it to adapt and respond to changing market conditions and traffic growth.

He said: “While the proposed facilities have been designed in consideration of foreseeable traffic growth, any favourable yet unforeseeable traffic developments should be accommodated in the future with minimal disruption to existing operations and in a cost-effective manner.”

The consortium also intends to develop all supporting airside and landside infrastructure. TAV has a foot in other areas of airport operations, such as duty-free, food and beverage services, ground services, IT, security and management services.

Following an extensive period intended to evaluate current operational practices, TIBAH is talking to the major stakeholders, including the Hajj Ministry, government agencies, air carriers, ground-handling companies and agents, to redesign all operational and business procedures and processes at MED.

Sener explained: “Processes will be re-engineered to realise agreed operational key performance indicators (KPIs), while roles, responsibilities and expectations will be defined in service level agreements (SLAs) with key stakeholders.”

He noted examples of possible improvement areas as: coach pick-up and drop-off at the

airport, check-in procedures, baggage-handling procedures, flight-delay procedures and slot allocation procedures.

“We also intend to utilise flow management and passenger tracking technologies such as radio frequency identification (RFID), Bluetooth, global system for mobile communications (GSM) and WiFi in order to monitor passenger processing, minimise flight delays and improve overall operational reliability and effectiveness,” he added.

Management changes at MED are sweeping in as part of the public-private partnership (PPP) agreement signed with the Saudi GACA. PPPs are generally designed to improve levels of service to the public by introducing the private sector’s technical know-how and decreasing the financial burden on the public sector for capital expenditure.

#### **Beneficial results**

PPPs are relatively new to the region but Sener emphasises that TIBAH has significant experience in implementing PPP projects with beneficial results. “We have first-hand experience,” he said assertively. “We are confident that we can mitigate any project risks and overcome any implementation challenges associated with such a complex project and operation.”

He indicated that experienced TAV personnel would fill a number of management positions, including the two key executive positions, the CEO and COO. “This will not only ensure a strong link and effective transfer of know-how

between TAV and Medina Airport, but it will also ensure that the airport is operated in a safe, secure and effective manner and is properly integrated into the TAV airports network.”

Sener explained that Istanbul Ataturk and Ankara airports are both operated by TAV and in 2010 they accounted for almost one-fifth of all international passengers at MED.

“Almost half of those passengers are origin-destination. Not only does this provide us with valuable insight into the nature of passenger expectations at Medina, since it handles the same, identical passengers, but it will enable us to share expertise and know-how to improve the offerings at the airport.”

Modern airports generally strive to achieve industry best practice but, depending on market and regional demands, may implement different strategies. TIBAH intends to simplify the complexities of air travel for passengers using MED. “This is especially important for Hajj passengers, who may not be familiar with air travel and whose only lifetime impression about Saudi Arabia will be formed during the pilgrimage.

“Our over-riding objective is, therefore, to leverage our expertise in airport design, management and operations, so as to ensure that the first and last hours experienced by visitors are spent in a pleasant and attractive airport environment that offers high service quality and, in turn, enhances the pilgrims’ spiritual voyage to one of the holiest Muslim cities during, perhaps, their only lifetime visit to Saudi Arabia.”

*As Abu Dhabi Airport Company battles to keep up with the ever-increasing numbers wanting to use the facility, Alan Peaford meets CEO James Bennett, the man behind a number of ambitious plans for the future.*

**A**bu Dhabi Airport Company (ADAC) will be taking urgent steps to extend the capacity of its main international airport as passenger numbers grow quicker than expected and contracts are still to be let for the proposed midfield terminal.

Speaking in an exclusive interview with *Arabian Aerospace* James Bennett, ADAC's CEO, said that despite work in refurbishing and growing the processing areas of Terminal 1 and the opening of Terminal 3, it would be "a real challenge" to meet the growth demand.

"We are enjoying a period of healthy growth," Bennett said. "In 2011 for the first nine months we were running over 13% on our passenger traffic year-on-year. We have had three or four sustained months when our passenger numbers exceeded one million for each month.

"This is significant because last July we celebrated our first ever month where we exceeded a million passengers. Now we are in a sustained mode where we are at or above a million. On this trajectory we look to wind up the year at about 12 million or a touch above that in terms of passenger activity compared to 10.8 million or 10.9 million the year before."

Bennett predicts that Abu Dhabi will continue its double-digit growth for the next five or six years, which could see the airport topping the 20 million passenger figure before the proposed Midfield Terminal opens in 2017.

"We have now received tender documents for the new terminal project and would expect to be letting the contract in the second quarter of 2012," he revealed.

ADAC has made a number of moves in recent years to match the demand. "Growth of the magnitude that we have experienced in a relatively short period of time creates certain capacity challenges,"

# GROWING

## Bennett's challenge: to manage



Bennett said. “We have been, for the past several years, doing many projects to enhance the capacity.”

In 2009 ADAC completed a parallel runway and during 2010 opened Terminal 3. In 2011 it completed the renovation of Terminal 1, the original main airport building when the Abu Dhabi gateway moved from Al Bateen.

“These improvements included additional security queuing space and more immigration desks,” said Bennett.

But, he admits, these will not be enough to meet the demand. “We have some interim enhancements between now and opening of the Midfield. Those are going to be significant but are not major new terminals or anything like that. It will be processing improvements within the building and expansion of core processing areas. We will be building more hard parking stands. The concept is to improve and expand within existing facilities to process more passengers and maintain the quality. We don’t want to compromise that in any way.”

#### The question of competition

Addressing the question of competition in the Gulf region for airports, Bennett said he not only welcomed it but also didn’t envisage a problem for all the Gulf airports growing.

“Growth in Abu Dhabi alone matches that of growth in the whole region,” Bennett said. “The Gulf States occupy a tremendous geographic advantage when you look at the main markets of Asia Pacific, the Indian subcontinent and Africa. They are all rapidly growing.”

Part of the solution to the challenge of the rapid expansion can be met by sound investment in new technologies, Bennett said.

“We will continue to pursue the advantages of these technologies,” he added. “The more we can drive our passengers to check-in on line or use the kiosks at the airport or some of our remote sites such as ADNEC – the city’s major exhibition centre – then it improves the customer experience but also helps us.

“We have rolled out new websites for the airport and for the company, itself, as part of that development. It adds capacity and eases the way for the passenger – particularly the frequent fliers – to make their way through to their flights using their mobile phones and other devices.”

According to SITA, the aviation IT specialist which supplies systems for Abu Dhabi, passengers at the UAE capital have the highest

demand for self-service options among the major world airport hubs. It also found high rates of smartphone adoption among premium travellers.

SITA said the demand for self-service is partly fuelled by smartphone adoption rates of 78% for frequent flyers (more than ten trips per year) and 35% among business/first class travellers.

Its survey revealed a clear opportunity for airlines to increase the use of mobile check-in, which had only been used by 12% of survey respondents compared to 38% who had used on-line check-in.

#### Mobile phones

According to the SITA survey, 33% of the Abu Dhabi passengers surveyed had a smartphone and a further 50% had ordinary mobile phones. The Blackberry was the most popular with 41% of smartphone holders having one, followed by 26% having an iPhone. Globally, 35% of respondents preferred the iPhone, compared to 28% who used the Blackberry.

The company found 30% of respondents would be willing to pay for information updates sent directly to their mobile phones. Interest was seen to be highest in flight-related information such as gate changes, flight delays, and boarding status, which 80% of survey respondents would use if available. This was followed by wait time at security, 50%; time to reach departure gate, 42%; information on airport parking, 35%; and location of closest lounge, 33%.

ADAC offers free WiFi and WiFi terminals around the airport to encourage more use of e-technology.

Hani El Assaad, SITA’s regional vice-president, Middle East and North Africa, said: “The survey reveals many opportunities to provide services to passengers that will generate revenue, increase efficiency and improve passenger satisfaction.”

ADAC also has other airports in its portfolio. Bennett cites Al Ain – the desert oasis that is becoming a global aerospace hub – and Al Bateen.

“As the first and only private aviation airport in the Gulf, Al Bateen is showing healthy growth rates and the management team there is doing a great job.”

Bennett also said the development of Al Ain’s aerospace cluster was good news for the airport company. “Al Ain is of huge strategic importance to Abu Dhabi and the airport there will continue to grow both for passenger traffic and for cargo,” he said.

## Airport’s carbon accreditation is the first element of success

Abu Dhabi International has become the first airport in the MENA region to be carbon accredited as part of the new industry standard introduced by the Airports Council International (ACI) and recognised by IATA.

The ADAC airport celebrated achieving airport carbon accredited status at the ‘mapping level’ at an event run alongside the ACI Europe and ACI Asia-Pacific Airport Exchange Conference, hosted by ADAC at ADNEC in November.

The ACI Airport Exchange brought together more than 1,000 air transport executives from Europe and Asia-Pacific to work towards the future development of the aviation sector and airports’ operations.

The carbon scheme was introduced in Europe two years ago with more the 40 airports now accredited.

Leonie Dobie, the head of sustainable aviation and airports who worked with ACI in developing the accreditation system, said the European airports had reduced carbon emissions by a remarkable 711,000 tonnes last year – the equivalent of taking 188,000 cars off the road.

The system is now being rolled out to ACI’s Asia Pacific region, which stretches from Turkey across the Asian continent.

ADAC initiated its application to the programme by mapping emission sources within the direct operational boundaries of Abu Dhabi International Airport, calculating the annual carbon emissions, compiling a carbon footprint report and verifying it independently. The airport footprint forms the baseline measure to which future activities and targets will be aligned.

A certificate was presented to ADAC chairman Khalifa Al Mazrouei at the official ACI dinner at the Emirates Palace.

CEO James Bennett said: “We are proud to be the leading airport operator in the region to start playing our part in addressing aviation’s impact on climate change. A key milestone for us is the participation in airport carbon accreditation. The certification recognises ADAC’s efforts towards applying comprehensive carbon management in the capital’s airport. This application also demonstrates ADAC’s commitment towards developing a sustainable future in aviation and effectively managing the environmental impacts of our operations across our five airports in the Emirate of Abu Dhabi.”

Bennett said the second phase of the accreditation would see ADAC identifying the potential and then reducing the carbon footprint. “Our goal is to be carbon neutral in those areas that are directly under the control of the airport,” he added.

Olivier Jankovec, director general of ACI Europe, said a key part of the accreditation process was for the airport to reach out and engage with users, such as the airlines and the retail providers.

# PAINS

## the growth of ADAC

# How people influence the appliance of science

In recent months we've been spared the headlines of long queues at airports but, with increasing passenger numbers, it is always a battle to achieve a smooth flow through airports, particularly as security remains a key issue.

The Middle East is one of the fastest growing regions for air traffic, with increasing volumes, and a high level of investment in airports and infrastructure.

Dubai Airport, for example, has seen an 8% growth in passenger volumes this year; Muscat is up by 13% and Abu Dhabi has increased numbers by 15%.

In Qatar, the new Doha airport, which has an initial capacity of 24 million passengers a year, will see an increase to 48 million with the next phase of development as \$15 billion is pumped into the facility.

Bahrain is currently seeing a nearly \$350 million investment in upgrading its airport.

These are big numbers and keeping the increasing amount of passengers moving smoothly is no mean feat. Consideration of

*Human factors affect more than just crew operations. One of the world's leading design and ergonomics consultants, John Woods, argues that airports need to understand the science... and the people.*



human factors – something that is intuitively understood, even if the science behind it is not – is one way that designers can maximise the value of any investment and ensure that operators get the most out of any airport.

Passengers, maintainers as well as operators, are all 'users' of security checkpoints and by

recognising their needs throughput can be optimised.

■ Passengers: key human factors concerns are privacy, attitude, processing speed, stress and anxiety.

■ Operators: the science of human factors would look at process design, equipment design, training, environmental factors, and posture.

■ Maintainers: efficient processors, access design, working postures, training.

Of course, with any international destination/transit point there will be a very wide range of cultural differences between travellers, which adds to the challenge for designers wishing to consider human factors.

#### Successful pat-downs

Psychological factors are important for the passenger. Body searches involve intrusion into an individual's body space. The experience is a negative one for both the security staff and the passenger – successful pat-downs must involve checks on some of the most intimate body areas.

Because passengers now expect to be searched, they may consider what they will wear for a journey and its temporary removal when being screened. Donning and doffing clothing can be facilitated – zips are more quickly fastened and unfastened than buttons and 'Velcro' strips quicker than shoelaces. But that assumes seasoned travellers who are willing – or able – to make these compromises.

A US survey reckons that American travellers would take an additional two to three flights per year if the hassles in security screening were eliminated. These additional flights are estimated to add nearly \$85 billion in consumer spending and 900,000 jobs to the American economy.

Understanding the different types of passenger

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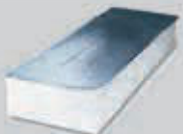


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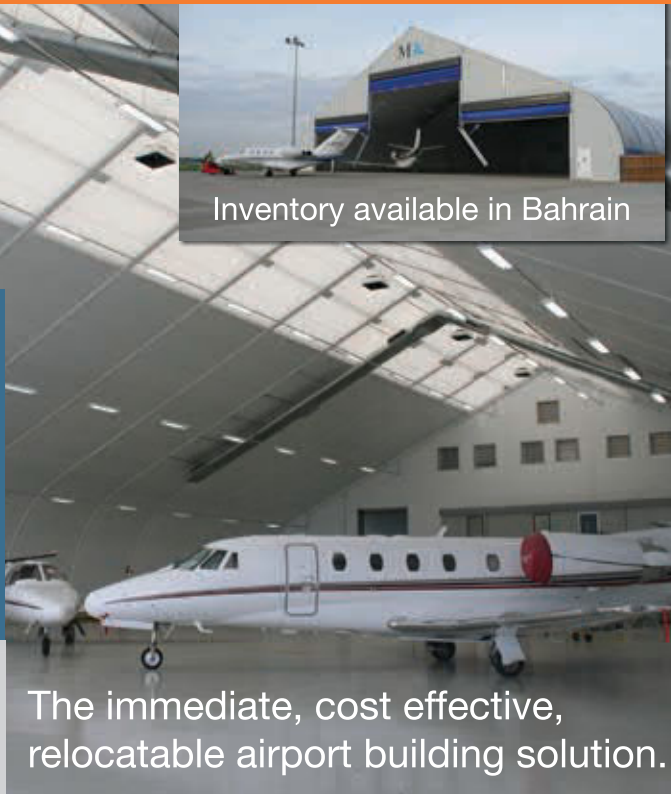
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will have an impact on the design of screening areas to maintain the throughput. Passenger extremes will include octogenarians, wheelchair users, mothers-to-be, children, those with learning difficulties and individuals with restricted vision. In each case designers need to consider heights of conveyors, light levels, instructions and assumptions on mobility to ensure that security lines are not to be held up.

Regulators are now looking at radical alternatives to the current screening processes involving risk-based approaches, where the degree of screening is based around risk assessments. This 'smart thinking' approach will make a significant difference to the way checkpoints are laid out. The advantages cited include the more effective use of available resources and improvements to the passenger experience.

Life for designers would be easier if passenger flows were constant but the reality is that they are not. Not only are there daily and seasonal variations, airports have to cope with massive influxes during special events.

On an annual basis, the pilgrimage to Mecca means millions access the city through the Hajj terminal of King Abdul-Aziz International Airport or the Jeddah Seaport. This is a challenge, as many are inexperienced travellers not used to the checkpoint experience.

Other notable events in the region can drive sudden spikes of passengers – the (now occasional) arrival of the Formula 1 circus. With

ten years to go, Qatar has plenty of time to consider the implications of the World Cup.

For operators working at the conveyor – checking bags through X-ray machines or physically manipulating trays or luggage – the physical layout of equipment is crucial. Manipulating a heavy bag on a conveyor, which is too high, may be acceptable occasionally but it certainly won't be if this has to be done 30 times an hour over a full shift. Back injury issues are rife among staff involved with manual handling and the financial implications of reduced efficiency and time off work are worth avoiding.

**Adjustments to the baggage**

This point of the process usually involves both the passenger – it is their responsibility to load luggage on to the conveyor – as well as the operator, who needs to make adjustments to the baggage being X-rayed to make sure it goes through in the optimal position.

Effective design, created in conjunction with the operators themselves, can speed up the process as well as minimising the injury risk.

X-ray screeners have received much attention in the past, with working periods and target detection having been looked at. Features such as poor layout of equipment, inappropriate general illumination and poor posture all chip away at performance. Just as important are the 'softer' issues to do with motivation, training, team working and supervision.

Maintenance engineers are not seen as front-line staff as far as security screening zones are concerned and their needs often do not receive the same level of attention as others in the security team.

But their needs matter when it comes to easy access to vital parts of the machinery, which must be accessed to keep the systems operating. Access hatches, lighting and sight lines are also points to be considered by designers, as these make a significant contribution to the speed of maintenance and repair.

Operators expect to squeeze every ounce of performance from equipment and the design needs to allow faults to be fixed efficiently and correctly.

There is no definitive solution to checkpoint human factors as each airport is different – it is easiest to ensure 'best practice' when a facility is being built from scratch. But, equally, there are 'best practice' approaches that can be applied to the refurbishment of older terminals.

In the Middle East, where investment is high, the use of human factors thinking will help make it one of the key travel hubs in the world.

■ *John Woods is executive chairman of CCD Design and Ergonomics and is currently involved with establishing standards across Europe, where he is currently involved in projects at both London Heathrow and Gatwick. He has extensive experience internationally.*

*An IATA pilot project saw Emirates and Delta Airlines chosen to test the potential uses of more efficient airspace – but it wasn't quite that straightforward.*

**Jill Stockbridge reports.**

# Wind of change for flight paths

The remit was clear, even if it was never going to be simple. Emirates and Delta Airlines had been chosen for an IATA pilot project to trial new low-density flexible airspace (iFlex), and to demonstrate the potential savings in fuel, CO2 and cost by using the most efficient flight path.

The plan followed the ICAO resolution to introduce the concept of flexible air traffic management (ATM) as a strategic objective.

Delta's flexible flight path was to be tested on the mainly oceanic route from Atlanta to Johannesburg, while for Emirates it would be one of the daily flights between Dubai and São Paulo, Brazil.

The Emirates' route was always going to be a challenge as it crossed continental Africa and cut from east to west across the European traffic flow.

Emirates was chosen as it has been involved in the development of 'flexible tracks' for aircraft operations since 2005, initially with Airservices Australia and then in the Maldives, Indonesia and a number of other countries.

The basic principle is that the flights follow the optimum track by picking up tailwinds (jet streams) or avoiding headwinds and are not restricted to flying the fixed airways in the sky, as they may not be the most efficient routes.

At the end of 2010, Bob Everest, Emirates vice president flight operations support, set about bringing together all the different nation states whose airspace would be involved in the São Paulo test flight – all 34 of them.

Everest said: "Although IATA works closely with the Civil Air Navigation Services Organisation (CANSO) many of the African nations are not members. I was trying to liaise with the 23 different ATC units involved in our route."

Meetings were held in Dakar in January, Dubai in February and the third in the ICAO offices in Paris in March, to try to come to a resolution as to what routes would be flown and to prepare letters of agreement.

"The biggest achievement of the

Dubai meeting was to get the nation states into one room," said Everest. The attendees included the Democratic Republic of Congo, Mauritania, Senegal, Sudan and others.

"At first they were very cautious but became more open as the talks went on. However, it rapidly became apparent that the co-ordination involved would be impractical. Many of the airway structures in the Middle East and Africa were inefficient and not suitable for the route being proposed. In some cases they simply did not have the technology."

## Sheerscope

Another difficulty was the sheer scope of the flexible flight paths.

Everest continued: "The winds in winter and summer are completely different and made the flexible flights, particularly outbound from Brazil, range across a massively wide area of Africa."

So the concept changed. Instead of running one demonstration flight using flexible routing, suddenly Everest and his team were working on how to make the airway structures across Africa and the Middle East more efficient, an essential

building block before iFlex routing could be introduced.

Everest added: "Initially we met with Sudan. We paid for a meeting in Johannesburg, then one in Khartoum and finally in Abu Dhabi with representatives from Saudi Arabia.

"We established a new route that will save us 100nm on every flight. Those meetings cost Emirates around Dh44,000, but give potential savings of 1,600kg of fuel per flight. We are looking at a weekly saving of approximately 35,000kg of fuel, which is a reduction in CO2 emissions of around 110,250kg. This figure will increase with the launch of the Rio de Janeiro flights in January and if we extend our West Africa services."

In total, Emirates has worked out 20 new airway structures and is in the process of implementing them.

Five were opened in October, seven more in November and five are due to come on line in January. Political upheaval in the region has had an impact and the team is still working on three routes, which have been affected by the 'Arab Spring', with airspace closed in countries including Libya.

As they open, the new routes Emirates is developing across the continent are available to all carriers operating in the region, saving emissions on a much wider basis.

Everest concluded: "What started as an evaluation of iFlex for one flight for one city pair has become the creation of multiple iFlex routes that will serve West Africa as well as South America, reducing the carbon footprint of Emirates and other operators in the region. It has provided a daily carbon emission reduction, which will have a much greater impact in both short and long term.

"The airlines and IATA have to give credit to the African countries which have worked with us, which have



Flights follow an optimum track.



Freedom allows aircraft to make use of the best wind conditions.

adopted these policies and which are actively looking at how they can improve.

“Their positive attitude has allowed us to put in this essential building block in a stepped approach towards our eventual aim of flexible flight paths.”

Delta completed the iFlex text flight in July, flying from Atlanta to Johannesburg. IATA reported a 2% saving on fuel, matching IATA’s projected saving on ultra-long-haul routes throughout the world. IATA projects that, once implemented, iFlex could save 365,000kg of fuel per year on the Sao Paulo route, which equates to 1,149,750kg of CO2.

**Close relationships**

Emirates is implementing the strategy elsewhere and has developed close relationships with Canada, Iceland and Russia over the years to obtain maximum flexibility on the polar routes for more efficiency.

Etihad Airways is also working on flexible flight paths and recently announced reduced carbon by nine tonnes on two flights from Australia to Abu Dhabi.

James Hogan, Etihad Airways’ CEO, said: “The fuel savings and reduced carbon emissions

made by these flights are potentially hugely beneficial for both the aviation industry and the environment.

“In recent years, the technological advances made in aircraft navigation systems have been enormous. Aircraft are no longer reliant on ground-based systems but use advanced navigation systems based on the GPS satellite constellations.

“This allows aircraft to fly an infinitely variable number of different routes between two points, subject to the agreement and approval of air traffic service providers.

“If similar savings were possible just once each week for flights between Abu Dhabi and Australia, we conservatively estimate an annual reduction in carbon emissions of some 1,100 tonnes and a saving of 350 tonnes of fuel. This would represent a reduction of more than four tonnes of carbon on every flight.”

The flights were operated over routes Emirates and Etihad have developed with India, Sri Lanka, and Maldives to get better efficiencies and as a continuation of the flex programme in the Indian Ocean. The new segments were opened in November and are used by both airlines.

**Inspirational flights for emission control**

Both UAE airlines have also been taking an active part in a research initiative organised by the Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE), which saw aircraft operated in a manner intended to set new standards in environmental best practice.

INSPIRE is a collaborative network of organisations from the Arabian Sea and Indian Ocean region dedicated to improving the efficiency and sustainability of aviation.

On a single day, Etihad operated its INSPIRE flight from Abu Dhabi to Sydney, while Emirates operated two flights, Dubai-Brisbane and Perth-Dubai.

The flights allowed user-preferred routings, working with air navigation service providers from different countries to gain permission to fly the optimum route, to conduct uninterrupted climb and descent paths and introduce other innovations, such as aircraft using terminal gates as close as possible to runways and the nomination of secondary landing airports as close as possible to primary ones.

Emirates also worked with INSPIRE operating a reduced-emission demonstration flight to the recent COP17 climate change conference in Durban. The B777-300ER aircraft carrying the UAE delegates used the flexible techniques to arrive 23 minutes early, saving more than two tonnes of fuel and five tonnes of CO2 emissions, compared to the regular Durban flights following traditional airways.

Bob Everest, Emirates vice president flight operations support, said: “Although there is a lot of work to co-ordinate one INSPIRE perfect flight, the object is to take the lessons learned and the practices implemented and make them common for all flights, so that the efficiencies gained can significantly reduce fuel usage and emissions.”

*There is increasing traffic between Kazakhstan and the Middle East. The country celebrated the 20th anniversary of its independence from the former Soviet Union last December. **Marcelle Nethersole** travelled to see how it is reinventing itself as prosperous and modern and how the national airline, Air Astana, is helping to achieve these ambitions.*

# STAN AND

**K**azakhstan has some powerful neighbours in the shape of China to the east, Kyrgyzstan and Uzbekistan in the south and Russia north. To the west lies the Caspian Sea.

Of all the 'stans' that were once part of the mighty Soviet Union it is Kazakhstan that is the most economically advanced – with oil and uranium being a big part of its economy.

However, not many people know too much about the ninth largest country in the world.

It offers a diverse landscape, from sparsely populated lowlands to stretches of mountains such as the Tian Shan and Altay.

It offers visitors a great outdoor experience, from skiing and trekking to fishing and horse riding – it is believed to be the country where man first tamed the wild horse.

Its two main cities are the cosmopolitan Almaty and the futuristic capital, Astana.

But Kazakhstan has actually been a well-known landmark on the aerospace map since the late 1950s, when the Soviet Union built a base of operations for its space programme.

Since then, many historic flights have lifted off from Baikonur, including the first man-made satellite, Sputnik 1 in 1957, and the first manned orbital flight by Yuri Gagarin in 1961.

It, therefore, makes sense that the country's national carrier is also making an impact in the aviation industry, helping make Kazakhstan accessible and finally putting this aspiring country on the tourist map.

Air Astana was incorporated in late 2001. Its shareholders are the Government of the Republic of Kazakhstan and BAE Systems of the UK.

Peter Foster has been its CEO since 2005 and has been a big force behind the airline's success. The year 2011 was particularly rewarding.

"We had a great year," said Foster. "The airline grew its capacity by 70% in 2011 and traffic matched that. So it has been a continuous growth since the middle of 2009 when we came out of the recession."

The airline operates a fleet of 25 western

aircraft, with an average age of 10 years for its jets.

It has placed an order for the new Airbus 320 family aircraft, introduced the Embraer E190 for regional services in addition to the Boeing 757-200 and Boeing 767-300ER fleet, and aims to grow its fleet to 34 by 2014 and to 63 by 2022.

It has an outstanding letter of intent for 787s, which Foster expects to confirm into a firm order before too long. Until then, the 757s need to be replaced.

"Geographically we are between South-East Asian centres and European centres," explained Foster. "So we have a lot of long and thin routes, with seven-plus hour flights. So these routes cannot sustain large wide-bodies, which is why the 757 has done a great job, but we do need to replace them at some point as they're getting old, as well as out of production. Due to the problems with the 787 programme we don't have a slot until 2019. Until then, we need to look at perhaps new 767s, or A330s."

#### Domestic and regional routes

Air Astana has close to 50 domestic and international routes and while it concentrates on domestic and regional routes it is adding to its international network at a steady rate.

Foster said: "In the last couple of years we have concentrated on the surrogate home-markets, the routes within this region of Kazakhstan, and we are continuing to expand on this. But our Asian market is also very healthy, much better than the European market.

"We have increased frequencies on our Chinese routes, as well as flights to Bangkok and Kuala Lumpur. Shortly we will start a route to Hong Kong and Ho Chi Minh City in Vietnam. We are making our stamp on the rest of the world, too, as we continue to upgrade airport lounge access around the world in order to further enhance the overall travel experience for our business class passengers and frequent flyer Nomad Club gold members."

Air Astana is the only airline in Kazakhstan allowed to fly into the EU after an audit in 2009, which resulted in EU safety committee safety concerns and a blanket ban on all airlines from Kazakhstan, apart from Air Astana.

"Air Astana is safe due to our unique regularity framework but we have been limited to the total number of frequencies that we operated in June 2009 to this day, and that stops our ability to grow our European network," said Foster. "But progress is being made to try and relax these restrictions."

The good news is the airline is now recognised as a clear leader in the CIS region, as it continues to compliment its modern fleet with a large number of technical and service innovations designed to ensure that air travel to, from and within Kazakhstan is as reliable and convenient as possible.

It has recently opened an engineering centre and Foster has long-term plans: "We are a long way from maintenance centres here. Therefore, sending aircraft overseas is expensive and time consuming. Traditionally there hasn't been any European-approved or FAA-approved heavy maintenance facility in this region so we are on a learning curve with the development of this maintenance and workshop centre.

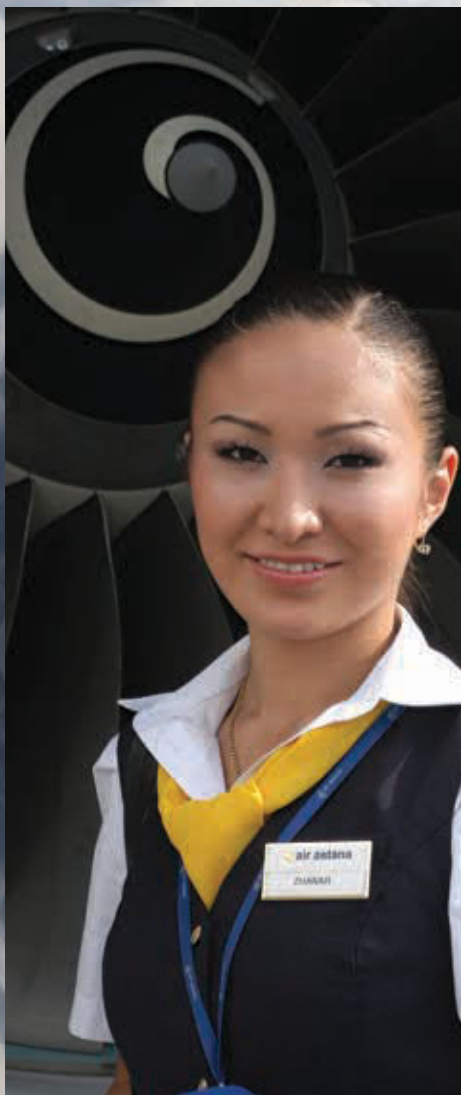
"We are now doing non-destructive testing – batteries, wheels and breaks – and sheet metal works, all of which is licensed by EASA. We are saving money on this but we can also see it as leading into a heavy maintenance capability. This is the only facility of its kind in this region, so we are getting interest from many other airlines. But, primarily, it is a facility for Air Astana."

International airlines flying to Kazakhstan already include Lufthansa, Etihad, Egypt Air and Air Arabia. Turkish carrier Pegasus will also launch a twice-weekly service between Istanbul Sabiha Gokcen airport and Kazakhstan's Almaty from January 25.

"We want to help the country to continue to grow in this positive way," said Foster.



# DELIVER...



Left: A cabin crew member reflecting the modern look of Kazakhstan and its airline.  
Centre: Almaty is a growing destination for visitors from the Gulf.  
Above: Peter Foster - a big force behind the success.

## Australian takes the Oamn Air reins

Australian Wayne Pearce - the former head of strategy and planning at Etihad - has become CEO of Oman Air.

Pearce was previously in a strategy role with Qantas before becoming managing director of the UK-based Gold Medal travel group.

He succeeds Peter Hill who is retiring to live in Sri Lanka. Pearce who studied economics at McQuarrie University in Australia and lives in Switzerland officially took over the post on January 3rd.

## Al Baker nominated for IATA board

Qatar Airways CEO Akbar Al Baker has been unanimously nominated to serve on the IATA board of governors.

He was given the vote of confidence by the general assembly of the Arab Air Carriers Organisation (AACO) at its annual general meeting in Abu Dhabi.

Al Baker, who was recently elected to the organisation's executive committee, said: "I am delighted that AACO sees fit to nominate me to serve on the board. This will help further push the cause of AACO members on the global stage."

## Lewis Jet Aviation's man for Al Bateen

Jet Aviation has appointed Peter Lewis as senior manager of its new operations at Al Bateen executive airport.

As a 30-year veteran of the business aviation industry, Lewis brings a wealth of experience to this new position, particularly in maintenance, project management and quality assurance.

■ Jet Aviation has also appointed Abdullah Al-Ghamdi as the new customer relations

## MASSOUD LANDS TOP JOB AT CIVIL AVIATION MINISTRY



The chairman of the EgyptAir Holding Group and airline CEO Hussein Massoud has been sworn in as the new Egyptian minister of civil aviation.

He was appointed in a new cabinet announced by prime Minister Kamal El Ganzoury.

After accepting the responsibilities of the new position, Massoud said: "The priorities in the next period will be directed towards organising the internal structure of the ministry and creating a homogeneous teamwork system."

He added that ministry employees had excellent knowledge and loyalty to the aviation sector, which would be important in overcoming a critical period.

Massoud is a member of the IATA strategy and policy committee, as well as part of its nomination council and board of governors. He is also the current chairman of African Airlines Association (AFRAA) and chaired the Arab Air Carriers Organisation (AACO) in the previous session.

manager and sales representative for aircraft management and charter services in the Kingdom of Saudi Arabia & GCC.

## UK and Ireland role for Gulf Air's Saggarr

Gulf Air has appointed Rick Saggarr as its new country manager for the United Kingdom and Ireland.

Starting his career with American Airlines in 1994, Saggarr brings with him more than 15 years of airline experience, having worked in senior positions for airlines including Delta, Qatar Airways and Kingfisher. He joins Gulf Air from Hahn Air, based in Frankfurt, where he was the director of the airline business group.

## Patsalides takes on Gama marketing

Gama Group has appointed Andy Patsalides as director of marketing, a new position for the business aviation services company.

He joins the leadership team at a time of significant growth, which will see the company expand its territory in the Middle East as well as moving into Asia during this year.

## KAMAL STEPS UP AT EGYPTAIR HOLDING COMPANY



Captain Hossam Kamal has taken over as chairman and CEO of EgyptAir Holding Company.

He was vice chairman since 2009 and has played a substantial role in many projects that actively enhanced EgyptAir's performance.

During his time with the company Kamal has been a board member, playing a key role in the EgyptAir expansion plan and businesses modernisation. He also chaired several strategic committees, adopting the quality improvement in all EgyptAir subsidiaries and co-ordinating with Egyptian airports to bring forth operation simplification.

Kamal also led the EgyptAir investment plan committee and headed the branding committee.

## EgyptAir's new training chief

Captain Hany Azmy has been appointed vice president for the EgyptAir Training Center and plans to see the organisation reach out to the burgeoning African airline. With more than 30 years in the industry, Azmy has been a captain on B737, A300 and B767 aircraft for the national airline. His last position was manager of technical research at EgyptAir.

## All change at Commsoft

Aircraft maintenance software specialist Commsoft has named Nick Godwin as its new managing director as part of a management restructuring. He will retain his business development and commercial responsibilities.

Commsoft founding co-director Gary Pollak will become chairman of the board. James Stock becomes technical director. David Pusey takes up the key role of project director and Julian Beames becomes business operations manager with a brief to enhance the company's business processes.





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ENGINEERED WITH PASSION

## Abdullah Al-Sayed

Marcelle Nethersole *speaks*  
with Nexus president and  
CEO Abdullah Al-Sayed.



1

■ What does Nexus do?

Nexus is the first and only licensed flight operations services company in Saudi Arabia and Bahrain. Offering top quality services ranging from global concierge and flight dispatch to aircraft and crew scheduling, trip planning and maintenance management to planning automated solutions and security, Nexus provides superior technical expertise and complete convenience to all its clients.

2

■ You are in partnership with FlightSafety and Argus International. How are those partnerships working?

Nexus embarked upon a high-quality partnership with FlightSafety International to establish the best aircraft dispatch centre in Saudi Arabia. The centre now offers a number of training programmes that are available in Manama, Bahrain and Jeddah, Saudi Arabia and are taught by FlightSafety International's highly qualified instructors. The courses that have run so far have proved very successful. Argus International has also been positive. We are now able to offer the Middle East a whole host of safety audit products and services, such as the Argus ratings system for charter operators and international standard for business aircraft operations (IS-BAO) audits.

3

■ How did you get into the aviation business?

My love for aircraft and the open skies began in childhood as my father also worked in the industry, so I was exposed to my dream career at a very early age. I began my career as a flight school representative at Crystal Shamrock, USA. I then went on to be the first Saudi national to become a specialised flight inspection procedure officer at the Civil Aviation Authority. I have had many roles over the years, ranging from flight coordinator to director for the largest three flight operations centres in the GCC, before joining Nexus as the CEO. I have worked for the most prestigious companies in the Middle East, such as Royal Jet and NetJets Middle East. I also have all the necessary aviation-related qualifications, including a masters in business administration from American University London.

4

■ What has been your greatest challenge in this industry – and your greatest success?

My greatest challenge has to be maintaining business growth and constantly providing a high-end service, which adheres to strict safety standards for an affordable and competitive value. As for my success, this is down to my team, who are the ultimate driving force behind our achievements.

5

■ Where do you see Nexus going in the next few years and where will any growth come from?

We have just added more aircraft into the fleet we serve, starting from Hawker800XP, to A319ACJ. Each step we make only serves to take us closer to our ultimate goal to be globally recognised as the leading Middle East provider of flight operations services. Let me put it this way: we want to be the Four Seasons of the aviation industry.

6

■ What advice would you give to other Gulf nationals thinking about a career in aerospace?

You need to be patient and 100% dedicated to what you do. You must have an eagerness to learn every day and never stop; always keep abreast of industry news, as in today's modern society it is constantly changing. But the most important piece of advice I could offer anybody is that you have to have the right attitude. Be realistic but never stop dreaming that you can go higher.



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- Crew / Passenger Stairs
- Aircraft / Heli Towbars and Heads
- Cold and Hot Water Pressure Washers
- Air-Conditioning Units
- Air Compressors
- Boom, Man & Scissor Lifts
- Trailer Mounted Flood Lights
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