



ARABIAN AEROSPACE

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

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ALL EYES ON DUBAI

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AEROSPACE EVENT AHEAD
WE LOOK IN DEPTH AT
DUBAI'S AVIATION PROGRESS



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SF-260TP

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Central
revelations:
DWC is off
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Why the world is looking to Dubai

This edition of *Arabian Aerospace* is unashamedly Dubai-centric. As the greatest aerospace event in the Middle East, Africa and even across the Gulf to the Indian sub-continent, takes place in the UAE's premier city, then all the world's eyes will be focusing on the emirates as a whole but Dubai in particular.

The Dubai Air Show is a world-class event and, as it moves to its new purpose-built home, it begins a new era.

Change is always difficult. I am old enough to remember the grumbling when the show moved from the Garhoud area of the Dubai International airport to the Dubai Air Expo building. I am hearing similar grumbles now. But anyone used to visiting shows like Farnborough, Paris and even Singapore, will be used to a lengthy run from the hotel areas to the show sites.

Dubai Air Show's new site at DWC is easy by comparison – and with the ambition that continues to reign within Dubai's aviation circles, as well as in the Government as a whole, it will not be many years before the site will be even more at the heart of the new Dubai.

In the past few months I have had the pleasure to moderate or chair conferences in Africa, Europe and the United States. It is fascinating to see the awe that many delegates have for the development in our part of the world.

As first-adopters, our airlines are happy to take the risk to invest in new models. And manufacturers seem thick-skinned enough to take the publicly aired pressure from the airline leadership when there are delays or faults. But that courage to invest has significantly helped the major manufacturers with new models like the A350 and A380, the Boeing 787 Dreamliner and now – as we head toward the Dubai show – the Boeing 777X.

In the cabins, the Gulf carriers are driving the



technology to enhance passenger experience; and behind the scenes they are working with technology providers to make new inroads into efficiencies to improve the industry.

With tensions in the region high, focus on defence is great as the region's air forces work on training with some of the world's strongest forces.

And training continues to be high on our agenda as the Gulf Aviation Training Event (GATE) takes place in Dubai this month.

It is all happening in Dubai and now is the time to get a real taste for the future of our industry and share in the excitement.

Safe landings.

Alan Peaford, editor-in-chief
Arabian Aerospace

COVER: Sheikh Ahmed bin Saeed Al Maktoum, head of Dubai Civil Aviation. Picture: Billypix.

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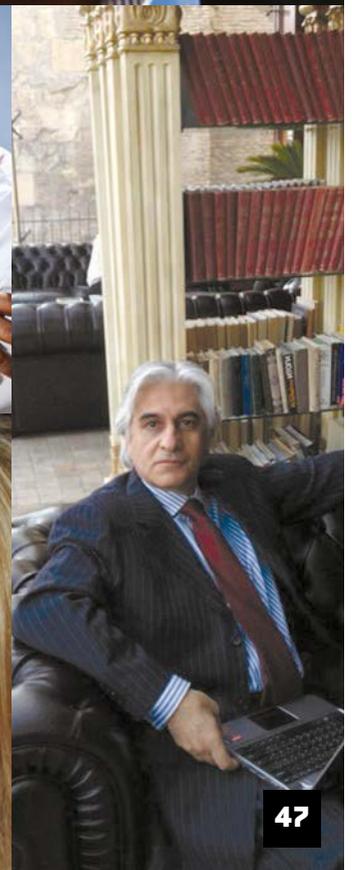
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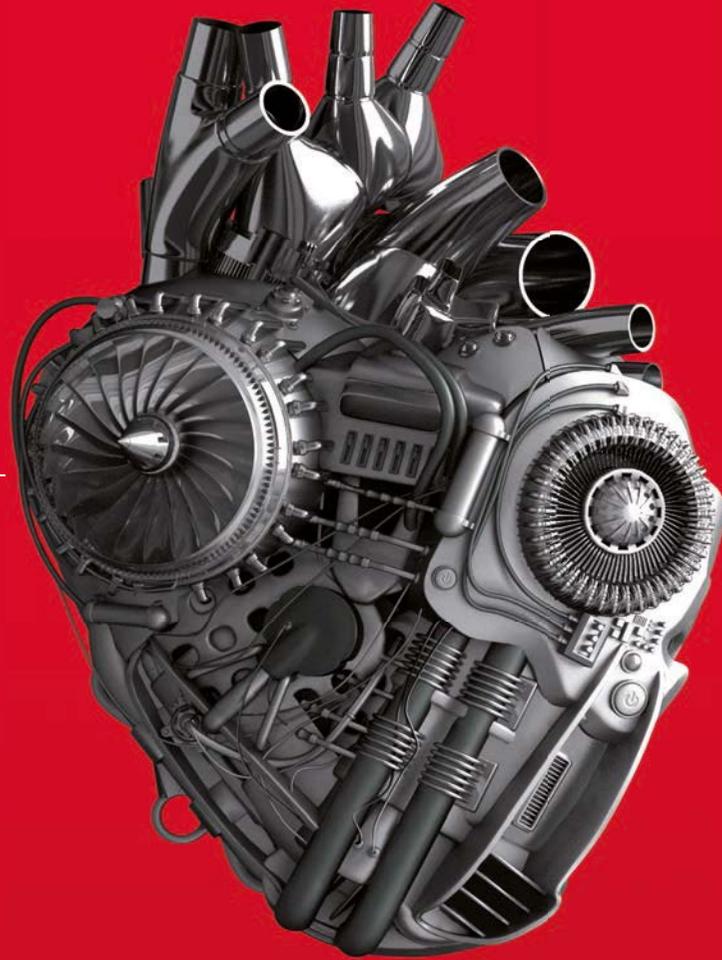


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Air traffic management (ATM) is one of those largely invisible services – a bit like plumbing – that nobody thinks about until something goes wrong. Global air traffic solutions company NATS is working to change that.



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Qatar takes up role in oneworld

Qatar Airways became a full member of the Oneworld alliance with effect from October 30.

The airline completed the oneworld implementation programme just a year after receiving its invitation to join, which made its induction into the alliance one of the fastest in history. Normally it takes around 18 months for any airline to be ready to enter any alliance.

Royal Jordanian president and CEO Amer Hadidi said: "We are glad that Qatar Airways will join the oneworld alliance, alongside Royal Jordanian, the first Arab carrier to gain the trust of any of the three global airline alliances few years ago. There will now be two route networks that will complement each other to serve the Middle East region."

Gulf Helicopters training approval

Qatar's Gulf Helicopters has become an AgustaWestland- authorised training centre. The Doha-based operator provides training services using an AW139 Level B full flight simulator (FFS) certified by the UK's CAA as a FFS, as per JAR-FSTD H, to Level B. It incorporates the latest technical advancements in flight simulation and state-of-the-art graphic displays.

Etihad ups Virgin Australia stake

Etihad Airways has grown its equity stake in Virgin Australia Holdings to 19.9%. The Abu Dhabi-based airline now holds more than 515 million shares in its equity partner airline. This takes Etihad to the threshold approved by



New VIP terminal for Abu Dhabi

Abu Dhabi is to get a new VIP terminal at the emirate's international airport as part of its capacity enhancement programme. The airport said the move is in line with its ambition to provide a world-class travel experience.

The new VIP terminal will be operated by National Aviation Services (NAS), which also provides 'golden class' services in Terminals 1 and 3.

An airport statement said that through the VIP terminal,

passengers would experience a unique personalised service ensuring completion of all travel procedures in the fastest manner possible "while enjoying a range of services within the private terminal".

It is scheduled to open in the fourth quarter of 2013 and will be available to all passengers flying to and from Abu Dhabi International Airport at a pre-set fee, offering added privacy, convenience and luxury.

Australia's Foreign Investment Review Board in June 2013.

James Hogan, president and chief executive officer of Etihad said: "We are delighted to have reached this milestone. It reflects our strong support for the business strategy and management team of Virgin Australia and our enduring commitment to the Australian market."

Mubadala captures a Dream role

Mubadala Aerospace's MRO network has signed an agreement with Rockwell Collins to support Boeing 787 Dreamliner operators around the world.

Under this agreement, Rockwell Collins grants the MRO network – specifically ADAT and SR Technics – access to its spares, services and support around the globe.



Seven up for Etihad

UAE flag-carrier Etihad has purchased seven state-of-the-art full flight simulators (FFS) to be based at the airline's new simulator bay at its training academy in Abu Dhabi, which should be completed this month.

The deal with Canadian manufacturer CAE is worth more than \$200 million at list prices, will see Etihad Airways take delivery of its first Airbus A380 and Boeing 787 FFS, and will support the airline's growing training requirements.

In total, Etihad Airways has ordered three Boeing 787 FFS, one Airbus A380 FFS, one Airbus A350 FFS, and two Airbus A320 FFS. All are CAE 7000 Series models. The airline currently has four CAE FFS: one Boeing 777, one Airbus A320 and two Airbus A330/340s. The first of the A320s should arrive by the end of 2013.

Saran is first for Bell 407

Turkey's Saran Holding Group has ordered the first Bell 407GX to be operated in Turkey.

Saran Aviation will fly the Bell 407GX for corporate transport missions.

It provides aircraft sales as a Bell Helicopter independent representative, as well as offering air ambulance and helicopter transport services.

Nozzle nobbles Emirates A380

The Australian Transport Safety Bureau has confirmed the cause of an engine failure on an Emirates A380 between Sydney and Dubai in November last year, was due to the failure of a high-pressure turbine nozzle on the Engine Alliance (EA) GP7270 powerplant.

Falcon flying to millionaire status

Gulf Air's frequent flyer programme, FalconFlyer, has reached a major milestone; signing one million members.

To mark the achievement, the airline awarded its first ever member with two complimentary Falcon Gold tickets to any destination on the airline's network. Bahraini, Saleh Hussain, the first passenger to receive a distinctive falcon-embazoned card 19 years ago, has flown more than 1.5 million miles with the national carrier and is now a gold member for life.

Safi extends network

Afghanistan's privately-owned Safi Airways, which operates from its two bases in Kabul and Dubai, has taken delivery of two Airbus 319 - 200 aircraft as part of its fleet modernisation and service offering.

The airline launched flights to Islamabad from its original home in Kabul.

Middle East first for Vector

Vector Financial Services, has announced the delivery of two Eurocopter AS332L aircraft to Starlite Aviation Group (Starlite) for operations in the Middle East.

Starlite becomes Eurocopter's launch customer for the new AS 332C1e helicopter, the first of which is scheduled to be delivered this month.



SkyCargo starts on new terminal

Emirates SkyCargo began construction of its new terminal at Dubai World Central's Al Maktoum International Airport (AMIA) and is on schedule with phase one of the construction of the terminal to be complete in December.

This is followed by installation of the cargo-handling system

and the fitment of the interior, which should complete in April with full completion by mid-September, when the terminal will be equipped to handle 700,000 tonnes of cargo and can be further expanded by an additional 300,000 tonnes in a later phase.

Dubai airport's summer record

Traffic at the world's second busiest international airport surged 23.8% in August, making it the busiest month in terms of passenger numbers in Dubai International's history, according to the traffic report by airport operator Dubai Airports.

According to the report, the monthly passenger traffic at Dubai International reached 5,999,375 in August,

compared to 4,847,152 in the corresponding month in 2012.

Etihad looks towards partners

Etihad CEO James Hogan told a conference in Cologne that the Abu Dhabi airline is open to even more strategic investments as it continues to increase its global presence through a mix of organic growth and strategic partnerships.

"Global reach is beyond the capacity of any single

airline," Hogan said. "And progress must come through partnership. We will consider more strategic partnerships if they add value."

AAR wins Saudi defence build role

AAR has won the contract to design and build transportable/mobile subsystems for Raytheon's Integrated Defense Systems in support of a Saudi Arabian initiative to improve joint air and ground integrated defence systems.

Oman facilities deal

The Government of Oman is investing in new cargo facilities across various airports in Oman.

As a result, Oman Air, the concessionaire for cargo handling, and Oman Airport Management Company have signed a strategic joint venture with a Singapore Airport Terminal Services (SATS) to develop and operate state-of-the-art cargo facilities in both the existing and new airports in the sultanate.

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MORE TO BELIEVE IN

Gulf Helicopters roars into forties

The AW139 intermediate twin-engine helicopter fleet operated by Gulf Helicopters of Qatar has achieved the milestone of 40,000 flight hours.

The Doha operator is one of the largest AW139 operators worldwide and a prime player in the Middle East with 15 helicopters of this type already in service and three more to be delivered.

Etihad opens Euro HQ in Berlin

Etihad Airways has opened its new European headquarters in Berlin, enhancing the airline's presence in the German domestic market and further cementing its strategic relationship with Airberlin.

Located in the heart of Berlin's historic Potsdamer Platz, the new office houses both Etihad Airways' European and German sales and marketing teams, and includes joint Etihad-Airberlin reservation and ticketing counters.

Abu Dhabi to join the rotary club

Abu Dhabi defence manufacturer Adcom is to build an unmanned combat helicopter in a joint venture



Sheikh Salem Bin Sultan Al Qasimi, chairman of RAK International Airport, and Tony Lynch regional director Middle East & Africa Arinc, at the implementation of its airport systems. Also seen are: extreme left, Mohammed Qazi commercial director RAK International Airport and (centre) Andrew Gower CEO RAK International Airport.

RAK International's new systems go live

Ras Al Khaimah's gateway – RAK International Airport – has turned on its latest systems. The multi-million dollar contract with Arinc for multiple airport systems went live in October.

The 10-year contract involved the design, supply and installation of Arinc's core suite of airport passenger processing solutions, as well as advanced airport operational systems, including a state-of-the-art vMUSE common use passenger processing solution (CUPPS), AirVue flight information display system (FIDS) and Arinc's latest generation airport operational database (AOBB) AirDB 7 system.

Speaking at the commissioning of the new systems, Sheikh Salem Bin Sultan Al Qassimi, chairman of RAK Airport and the

department of civil aviation, said: "RAK International Airport's strategic vision is tied into the larger vision of the emirate of growing tourism, trade and commerce. The growth and progress of Ras Al Khaimah is intrinsically linked to the growth of the airport.

"We have continuously delivered on all of our promises for this year, including the current expansion phase, which is already seeing the airport receiving a steadily increasing number of passengers.

"We are confident that the Arinc systems, which have gone live today, will make us a hi-tech, efficient and integrated airport."

deal with Russia's Berkut Aero.

The new venture will take the Berkut VL helicopter as a model for Russia's first-ever combat helicopter drone. The aircraft will be stationed on a Russian aircraft carrier and fly to remote areas.

Adcom Systems said it was also considering the superlight two-seat helicopter airframe, which has a range of up to 600km, in its manned form

as the basis for a new attack unmanned system.

Chapman Freeborn to reach out in Libya

Charter specialist Chapman Freeborn has formed an exclusive partnership with Air Libya to place and operationally manage an Antonov AN-26 aircraft based at Tripoli's Mitiga International Airport.

The 5.5tonne-payload aircraft is available for ad

hoc cargo charter requirements as well as internal scheduled services connecting Tripoli and Benghazi with Libya's more remote airfields.

Old PAL's reunion

Philippine Airlines (PAL) has resumed flights to the Middle East, launching a five-times-weekly service on the Manila-Abu Dhabi route in October.

The airline will also launch a five-times-weekly Manila-Dubai and a Manila-Doha service in November. In December it will resume services from Manila to four times a week as well as three weekly flights from Manila to Dammam.

The moves are to support Filipino workers in the Gulf.

Etihad's hedges in good shape

Etihad has been named corporate risk manager of the year at the Energy Risk Awards Asia in recognition of its highly effective fuel hedging strategy.

The airline has built up its fuel-hedging programme over the last six years as a key tool to manage jet fuel price risk, allowing management to plan effectively.

Last year, Etihad managed a fuel hedging portfolio of around 23.8 million barrels, up from only 6.5 million barrels in 2007, when the programme started.



Rotana Jet launches AI Bateen link

Domestic flights in the UAE were given a boost in August when Rotana Jet launched scheduled services from Dubai T2 to AI Bateen – the business aviation airport close to Abu Dhabi city – and then on to Sir Bani Yas island.

Using an Embraer ERJ145, the 50-seater connects Dubai and Abu Dhabi in just 30 minutes. It initially operates three times weekly.

Turkish Cargo is big in storage

Turkish Cargo has inaugurated a new freight storage area at Istanbul's Ataturk International Airport.

Close to the end of runway 06, the 10,500sqm storage area has dedicated areas for mail handling, cold weather storage and five cold storage spaces all with independent power.

Turkish Cargo flies to 239 destinations using belly space and scheduled cargo flights to 47 destinations across the globe with its 10 dedicated cargo aircraft.

Emirates goes to the movies – Latin style

UK-based IFE Services is to supply Emirates with Latin American movies.

The movies are carefully selected from studios across the region, including the developing film industries of Uruguay and Columbia as well as those from the more established Mexican and Brazilian studios.

Passengers will have a choice of six titles on board that will be refreshed regularly.

DCAF full of beans with new FBO

Dubai World Central's (DWC) first business aviation FBO hangar has been completed. The joint venture between Germany's DC Aviation and the UAE's Al-Futtaim, called DCAF, has completed its purpose-



MENA target for Russian Mi-28UB helicopter trainer

Russian Helicopters is looking to offer the new combat training helicopter Mi-28UB for export and has the MENA region in its sights.

Launched at the MAKS show in Moscow in August, the new helicopter is based on the Night Hunter manufactured by Rostvertol. It features a dual-control system that can be used for Night Hunter pilot training, while at the same time retaining all the functionality of an attack helicopter to allow search and destroy operations against enemy equipment and manpower and low-speed targets at any time of day or night in both favourable and complex weather conditions.

built integrated hangar facility with lounge and office areas.

The Dubai hub includes a 5,700sqm state-of-the-art hangar and a 1,300sqm plush lounge area designed to host VVIP customers.

DCAF will be providing aircraft management, FBO, aircraft maintenance services and business jet chartering to local, regional and international clients.

CFS goes the Extra mile to Jordan

The national aerobatic team of the Kingdom of Jordan, the Royal Jordanian Falcons, has selected CFS Aero to service the component repair and overhaul requirements of its fleet of Extra 300s.

Envac goes to waste

Envac, the underground automated waste collection service, has won two major projects in Dubai with Emirates Flight Catering Facility (EKFC).

Envac secured the \$8 million double award following the success of the world's largest operational automated waste collection system for flight kitchens, which was installed into the EKFC in 2008. The system currently handles the waste generated from 150,000 meals per day.

The two new projects will see Envac installed into new separate food preparation and waste handling

facilities within the flight catering facility. The new systems are expected to double the waste handling capacity of EKFC.

Indian takeaway

Etihaad is to buy five Boeing 777-200 LRs – the longest-range passenger aircraft – from Air India to support its accelerated network growth plan.

The Abu Dhabi airline said the aircraft would be used on its Los Angeles flights, which will start in June next year.

Subject to approvals, the aircraft will be delivered in early 2014 and will be refitted in a three-class cabin configuration. It is expected the first aircraft will enter service in April 2014.

Qatar puts the E in cargoes

Qatar Airways Cargo has signed a multilateral e-air waybill (e-AWB) agreement (Resolution 672) with the International Air Transport Association (IATA), which allows parties to conclude cargo contracts by electronic means.

Developed collaboratively by IATA with industry stakeholders, e-AWB removes the requirement for a paper air waybill by providing consent to do an electronic airway bill while not altering the conditions of contract of carriage. There is no longer a need to print, handle or archive paper airway bills.



Wind tunnel wins award for Bahraini student

A student at BAS Aircraft Engineering Training Centre (BAETC) in Bahrain, Ahmed Mohamed Saeed, has been recognised for a field study project at the centre.

Saeed developed a wind tunnel 'to scale' that demonstrates how aerodynamicists test an aircraft wing section at different angles of attack. The wind tunnel has the advanced capability of allowing the visualisation of the airflow around the experimental wing section by the generation of fog air.

CEO of BAS, George Saounatsos, presented an award to Saeed and said: "Talent and competence has to be rewarded."



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Turkey boost to business aviation

The State Airports Authority of Turkey (DHMI) has declared its support for business aviation, recognising the sector plays a crucial role in facilitating regional investment leading to a direct economic impact on Turkey's economy.

The statement was made during a high-level regional forum hosted by the European Business Aviation Association in Istanbul in October. The declaration should reduce some of the "impediments" to business aviation in the country, EBAA said.

New look for Abu Dhabi Duty Free

Abu Dhabi Airports has announced the launch of the new Abu Dhabi Duty Free brand. The new logo takes its inspiration from the iconic architectural design of the new midfield terminal, which is due to be completed in 2017.

Sight Seaing over Sharjah

Visitors to Dubai can now enjoy the scenery of the emirate and its neighbour, Sharjah, from a seaplane.

The new seaplane attraction service, which is called Heritage Arabia, comes after the Sharjah Investment and Development Authority (Shurooq) and seaplane operator Seawings launched the project to provide a new tourist attraction, as well as an ideal business travel solution between the two emirates.

Hadid adds value to African role

Dubai-based Hadid International Services has stepped up its presence and support in Africa, having



G4S extends Baghdad security deal

Global security and outsourcing group G4S has been awarded a two-year extension to its contract to provide aviation security at Baghdad International Airport (BIAP). The \$22.5 million per annum contract, awarded by the Iraq Ministry of Transport, will bring the full contract period to a five-year term.

The G4S team at BIAP has worked closely with the Iraqi Civil Aviation Authority and the Iraqi Government since January 2010 to develop the country's civil aviation capability and international credibility. Baghdad airport now welcomes close to one million visitors a year. G4S has a team of more than 840 employees working at Baghdad airport, more than 700 of whom are Iraqis, and the aim is to continue increasing the proportion of local staff and the level of local expertise.

As part of this commitment, G4S has sponsored a number of its Iraqi managers through the UK Department of Transport's aviation security manager's courses, either in the UK or in Iraq.

added in-house staff to supervise activities in Ethiopia, Djibouti and the Republic of Congo.

Capital action from RAK

RAK Airways has announced its third new destination of the year from its base in Ras Al Khaimah in the UAE. It is now operating to the Saudi Arabian capital Riyadh four times a week.

This is its 12th destination and follows launches to Amman and Islamabad announced earlier this year.

Qatar wins the Asian vote

Qatar Airways has been voted best Middle East airline by readers of *Business Traveller Asia-Pacific* in China.



Security boost for SAEI

Saudia Aerospace Engineering Industries (SAEI) has successfully installed a new security management system in its main base at King AbdulAziiz Airport in Jeddah.

The system – the CEM AC2000 – is delivered by CEM Systems, part of Tyco Security Products of Northern Ireland. "The powerful CEM AC2000 security management system is providing high levels of security to our main maintenance base in Jeddah," said Riyadh Bakedo, director plant & equipment maintenance at SAEI.

"CEM's S610 intelligent readers provide access control restrictions to highly secure airside areas, such as administration offices and aircraft hangers, while CEM biometric readers enable us to control staff access to our airside warehouse."

Emirates farewell to the A340-500

Emirates is divesting itself of its A340-500 aircraft.

The Dubai airline said it had retired two of its 10 Airbus A340-500s, and is breaking one for spares, claiming sustained high fuel prices are taking their toll on operations of the four-engined aircraft.

The Dubai network carrier introduced the ultra-long-range airliner in 2003 but the high cost of fuel makes the aircraft uneconomic to fly now, according to Emirates president Tim Clark.

"We've taken a big hit to retire them but their poor economics means there's no point in flying them."

Clark said Emirates is looking to accelerate the phase-out of the remaining eight aircraft.

EgyptAir has mobility

EgyptAir's Mobile Portal, developed and implemented by Link Development, has won the Amadeus Mobile Achievement Award.

It yielded the biggest airline ratio between number of visitors and its mobile booking, which reached 7%, versus a 3% global average ratio for the airline industry.

Nasair adds five A320s

Saudi Arabian value carrier Nasair has taken delivery of five leased Airbus A320 aircraft.

The aircraft were delivered from GE Capital Aviation Services (GECAS), the commercial aircraft leasing and financing arm of GE.

The five Airbus A320s expands the Nasair fleet to 22 aircraft. It serves 24 domestic and international destinations.

Qatar Links with L-3 sims

Qatar Airways' integrated training centre in Doha will be featuring Boeing 787-8 full flight simulators (FFS) developed by L-3 Link, later this year.

The newly certificated systems allow Boeing instructors to change simulator software loads to replicate how the aircraft operates when outfitted with Rolls-Royce Trent 1000 or General Electric GENx engines.

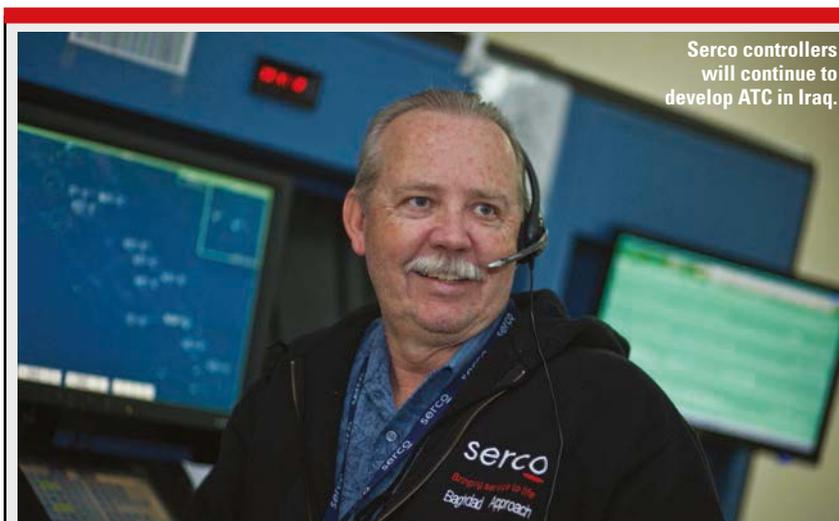
At 50, RJ goes back to school

Royal Jordanian Airlines has launched a 50-scholarship programme on the occasion of the airline's 50th anniversary, marked this year.

The programme includes financing the university dues of 50 bachelor degree students, of which 30 scholarships will go to outstanding achievers from the Jordanian community, 15 to the children of RJ employees and five to children of retired RJ employees.

Turkish translates with SDL

Turkish Airlines has chosen SDL to help drive international sales by providing home language web access for new customers across 10 additional key markets.



Serco controllers will continue to develop ATC in Iraq.

Serco signs new Iraq ATC contract

International service company Serco and Iraq's Al Burhan Group have signed a new agreement with the Iraq Civil Aviation Authority (ICAA) to provide air traffic control (ATC) services, training and support at Baghdad International Airport and extend the partnership's presence in Iraq.

Serco has been providing services in Baghdad since January 2011.

The partnership between Serco and the ICAA has achieved a number of successes, including the achievement of the 'vertical separation minimum' to increase airspace capacity, and the successful training and validation of more than 40 new Iraqi controllers, while continuously developing a solid foundation for re-building ATC capabilities in Iraq.

In an exclusive three-year contract, SDL will work collaboratively with Turkish Airlines to deliver consistent, high-quality website communications in 10 new languages including Russian, Chinese and Arabic.

Iraq approves Egyptian training

EgyptAir Training Center has been given the green light by the Iraqi Civil Aviation Authority as an approved training centre certified to provide all the required aviation training courses for

Iraqi Airways teams. The approval covers courses for cabin crews, pilots and maintenance engineers.

Cessna comes out fighting

Business jet maker Cessna, along with parent company Textron and partner AirLand Enterprises, has secretly developed its first modern military jet, which is likely to be targeted at developing markets.

The Scorpion, a light jet for intelligence, surveillance, reconnaissance and attack, was introduced at the Air

Force Association Air & Space Conference and Technology Exposition in Maryland, USA.

Falco for unmanned role in region

Finmeccanica subsidiary Selex has signed a contract worth more than \$53 million to deliver the Falco unmanned system to an unnamed Middle East country.

Selex will provide operational and maintenance support to the customer for one year as well.

Falco is an operationally

proven, tactical, medium altitude, medium endurance unmanned aerial system for defence and security surveillance applications, designed to supply net-centric command and control with a tactical overview of the operational scenario and target cueing in real time.

Hercules lift

The US government has formally approved the sale of the first two of 25 C-130J Super Hercules aircraft to Saudi Arabia, Lockheed Martin confirmed. The two aircraft are configured as refuelling tankers.

Gulf Air pioneer

Gulf Air has signed an agreement with Dubai Airport that will make it the first full-service network carrier to fly into Al Maktoum International at Dubai World Central (DWC). Flights will begin from December 8.

Safi stays safe

Safi Airways has successfully completed its IOSA audit. The Afghan airline – with its main headquarters in Dubai – already operates in compliance with EASA (European Aviation Safety Agency) requirements and was the first Afghan carrier complying with the strict ICAO (International Civil Aviation Organization) regulations. It is the first Afghan airline to be certified with IOSA.



Iraqi Airways takes first 737-800

Boeing has delivered its first Next-Generation 737-800 to Iraqi Airways, the first of 30 that the airline ordered in 2008, marking a milestone in its relationship with the airline.

The country's transport minister, Hadi Al Ameri, said the US manufacturer had "played a pivotal role" in the growth plan for the resurgent airline, which includes orders for 29 more 737-800NGs and 10 787 Dreamliners.

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A DIFFERENT SCALE ALTOGETHER.



The big three have been investing in new aircraft like Qatar's B787 and Emirates' B777 - now a new surge of spending could be on the way.



Why the big three really do have the X factor...

Industry analyst

Saj Ahmad looks at the procurement plans of the Gulf's major carriers ahead of the Dubai Airshow and identifies the winners and losers.

With the 2013 Dubai Airshow starting life at a custom-built arena within Dubai World Central/Al-Maktoum International Airport, the expo will no doubt start off with a glittering bang.

It has been well documented that Emirates and Boeing are working towards a formal industrial launch of the 777X family in time for the opening day of the show – a deal that could, on paper, be worth at least \$50 billion or more based on list pricing.

Emirates has been pressing Boeing for years to provide a successor to the popular 777-300ER with the 777-8X and 777-9X, and it's equally likely that Etihad Airways and Qatar Airways may join in at the airshow to finalise their own orders for the 777X family.

All three Arabian airlines have redefined the competitive landscape for the aviation industry and have also shown that they are pragmatic, as

well as proactive, in now deploying their energies into becoming drivers for the development of new aircraft.

The three airlines currently have more than 400 aircraft on order, including freighters. While some will be earmarked for the replacement of older jets, the bulk are clearly for expansion and there is no sign of any of these airlines slowing down either their growth or their insatiable appetite to procure more new generation aircraft, such as the 787, A350 and 777X.

Their investment in new technology airliners only feeds their desire to lower costs, remain competitive and expand into new markets that were previously not accessible.

The Emirates runaway success with the A380 is just one example of how it has used the world's biggest aircraft to great effect – it has deployed

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the fleet on a number of congested routes like Sydney and London and given customers more choice, price flexibility and a higher quality product than its poorer, mismanaged Asian, US and European rivals.

In the same vein, Qatar Airways' decision to be the launch customer for the A350 family proves that it, too, seeks a greater number of frequency-based flights to give customers more options and use the long-range capability of jets like the 787-8 and A350-900 to connect cities from Doha that would previously have required a fuel or technical stop somewhere en-route.

Etihaad has been unique in not just taking strategic investment slices in a number of airlines and helping them turn their businesses around, but also giving them the opportunity to hone in on Middle Eastern traffic via its Abu Dhabi hub.

Etihaad is now looking at proffering a more homogenous fleet policy so it can drive greater efficiencies across the airlines in which it has a stake.

Critics have long since argued that the lofty ambitions of Etihaad, Emirates and Qatar Airways, along with their bank-busting billion-dollar aircraft procurement, cannot be sustained indefinitely and that somewhere along the line they'll have to defer, curtail or even cancel orders.

While those observations would ring true if we were talking about European, Asian or US carriers, it does not hit home with the GCC-based airlines.

Regional angst

Despite the regional angst that has been seen in Libya, Tunisia, Egypt, Bahrain and Syria, the desire for travel to and through the Middle East has been robust. Poring over IATA's traffic figures, you see quite clearly that the double-digit percentage growth here is strengthening, not waning.

That is precisely why the likes of Emirates, Etihaad and Qatar Airways are growing their global presence at a rate that would make low-cost airline progress look slow. They are investing in their long-term futures.

This is in stark contrast to other world regions – if you look back over the last 30-40 years airlines in Europe, Asia, North and South America, as well as China, have been hideously slow to let loose their capital expenditure on aircraft, airports and other associated infrastructure costs.

The big Arab three are making sure that they are locking in favourable delivery slots at Airbus and Boeing.

Qatar Airways has the advantage of being the launch customer, not just for the A350-900 (currently in flight testing) and the stretched A350-1000, but also for the A319neo, the A320neo and the A321neo.

Some may see it exposed to risk if these programmes are delayed – one need only look at the disastrous way in which Boeing managed the early days of the 787 programme to see how badly



Top: Emirates president Tim Clark and left, Qatar CEO Akbar Al Baker have proved their strategies work.



things can go and Qatar Airways will be aware that Airbus faces the same, if not bigger, challenges.

Indeed, Qatar Airways has made no secret that it is not happy with the early performance of its 787-8 fleet – and with the airline holding 30 more options on the jet, it knows it has to be forceful and ensure that Boeing pulls out all the stops to get the 787 functioning as near to perfect as is possible to take advantage of its fuel saving and environmental performance credentials.

Major orders

Qatar Airways has also spoken about ordering 777Xs at the Dubai Airshow – combative CEO Akbar Al-Baker has often used the venue to announce major orders – and while the carrier's planned 777X purchase will be eclipsed by Emirates, that it wants to buy more jets speaks volumes about how it wishes to integrate into the Oneworld alliance and perhaps provide some much needed new strategy about how the alliance can compete with the Star Alliance and SkyTeam group.

Likewise, Emirates is poised to snare the 777X launch customer accolade – and with decisions still to be made about where final assembly and wing production will take place, the airline has made Boeing aware that its tolerance for delays is virtually nil.

Having been bruised by Airbus and the A380 wing rib cracking, forcing jets out of service for several weeks at a time, Emirates can ill afford to

stifle its expansion with jets stuck on the ground.

Having bypassed the 787 family, including the recently launched 330-seat 787-10 (stating that it was “too small” for its needs), Emirates' near-term focus on the 777X family not only forms the basis of its eventual 777-300ER replacement, but also for its very large airliner growth requirement.

Emirates president Tim Clark has noted that the 777-8X, slightly shorter than today's 777-300ER, allows it to fly non-stop from Sydney to Rome with a full load. Equipped with approximately 350 seats, the 777-8X replaces the niche market 777-200LR and forms the basis of the planned 777-8XF freighter – another jet that Emirates is keen to see realised.

The stretched 409-seat 777-9X effectively allows Emirates, if it should so wish, to match its A380 capacity on this aircraft on high demand routes like London and New York.

Etihaad, as the biggest 787-9 customer – the prototype flew for the first time in September 2013 ahead of service entry next year – is equally keen to purchase the 777X family for the same reasons as Emirates.

Etihaad has looked to pool financial, training and ancillary support between itself and Air Berlin when they both get their 787s in the coming years. Homogeneity and cost reduction is key to their dual future growth plans when based at their new hub in Abu Dhabi.

These Arabian airlines are clearly not afraid to put their money where their mouth is. Airbus and Boeing are, no doubt, pleased that the GCC represents the one area of the world that has the fewest ageing aircraft to replace but arguably has the fastest growing airlines tapping into the population centres around their Abu Dhabi, Dubai and Doha bases.

With more than a third of the Earth's population just a few hours from these hubs, it is little wonder that these big three Arab airlines will dominate aircraft purchases for a very long time to come.

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The Dubai Civil Aviation Authority (DCAA) has unveiled its strategic plan to steer the next stage of development for the fast-growing civil aviation sector in the emirate. Alan Peaford reports.

FIVE PILLARS FOR GROWTH

Aviation is a major part of Dubai's economy. Hundreds of thousands of jobs in the UAE are now dependent of the industry sector. Billions have been invested in the infrastructure and the promotion of the carriers, the airports and the service sectors that support the daily operations.

The DCAA is at the heart of Dubai's progress, contributing significantly to the work of the UAE's regulator, the GCAA, and also making its own inroads into key areas, such as safety culture.

Now the DCAA has published Shaping Tomorrow's Aviation (2013-2015), the full-cycle strategic plan for the Dubai aviation industry.

It is a plan that has been endorsed and approved by HH Sheikh Ahmed bin Saeed Al Maktoum, president of DCAA, chairman of Dubai Airports and chairman and chief executive of Emirates Airline and Group.

The document was put together based on the Dubai Strategy, which sets the strategic framework for Dubai government entities. It reflects the directions of the Dubai Aviation Sector Strategy (DASS), which DCAA had coordinated in 2011 with its formulation based on directives of the Dubai Executive Council.

DCAA has held meetings and conferences debating the plan and reviewing amendments to get new strands included as its implementation progresses.

The policy document has identified five strategic pillars towards achieving the vision of Dubai becoming the global aviation capital, contributing to prosperity and enabling growth.

According to the DCAA, it has taken into

consideration the entire gamut of developments and trends in designing a roadmap for success and the way forward to a bright and sustainable future.

Sheikh Ahmed said: "The aviation industry in Dubai has witnessed a steady growth in the past years and it continues to stride forward, competing with the world's renowned aviation cities to acquire the highest share of passenger and air traffic.

"Besides the growth of the industry, we consider that it is our prime duty and responsibility to ensure that we implement the highest standards of safety and security in all activities related to aviation."

Sound framework

Sheikh Ahmed said the DCAA directs its strategy objectives and programmes to build a sound legislative and regulatory framework within the emirate of Dubai. This translates the vision of the leadership into strategic initiatives and programmes that support achieving the objectives of Dubai's strategy.

He said: "This is an ambitious roadmap that will drive and support the growth of the aviation industry in the emirate aligned with the Dubai Government strategy and other key stakeholders and players in the industry.

"Adopting innovative and creative practices in executing the strategy is the key to success through which the contribution to the GDP of the emirate, competitiveness of Dubai aviation industry, and optimal alignment and integration among the other stakeholders, could be achieved."

He said the DCAA strategy would be sowing the seeds of success further for the aviation industry and would enhance the quality of government service excellence provided to businesses and consumers, while deploying the highest standards of regulations and policies related to the aviation activities. It would enhance the well-being of Dubai's community and the prosperity in the country.

Many national carriers – particularly in Europe and North America – have criticised the Dubai model of strong government support. But analysts are now saying that these carriers should be asking their own governments why they are not so supportive.

The new strategy plan is being supported right across the leadership.

Mohammed Ahli, director general, DCAA, said the regulator was fully behind the plan. The DCAA is committed to providing "boundless support" to the growth of the aviation industry in Dubai, he said, while maintaining the highest standards of safety and security in the aviation industry by adhering to the standards and recommended practices "adopted by the ICAO and those issued under the federal legal and/or regulatory bodies".

The DCAA strategy covers five main pillars that influence the outcome of the aviation sector – growth, capacity, sustainability, customer and capability.

Ahli said: "Our main focus is to support Dubai's competitiveness level and enhance the growth of passenger numbers and cargo at our two international airports, as well as facilitating

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“This is an ambitious roadmap that will drive and support the growth of the aviation industry in the emirate.”

HH SHEIKH AHMED BIN SAEED AL MAKTUUM

the expansion of the emirate’s designated airlines by securing aero political rights through multilateral and/or bilateral air service agreements or understandings with other states while encouraging airlines of those states to use Dubai airports.”

The strategy plan also outlined measures and initiatives for enhancing customers’ experiences using innovative solutions and technology, as well as increasing the excellence level of Dubai’s aviation services.

Several initiatives and policies, said Ahli, will be focused on improving the standards of aviation safety, security and the environmental impact resulting from the aviation activities, by promulgating the Dubai civil aviation policies (DCAPs).

He said the air transport industry’s regulatory body was committed to building the required capacity of a specialised workforce in the aviation sector, while focusing on recruiting and developing UAE nationals to lead and handle key positions.

Common and shared responsibilities

“Our success is highly linked with the common and shared responsibilities among the leadership in the organisation, as well as having an integrated organisational system that improves the quality and excellence of our key processes, which also provides for innovation, creativity and outstanding performance,” Ahli said.

Hani Abu El Soud, head of the strategy and organisational excellence office at DCAA, said the strategy plan provided the framework for further development of the civil aviation sector.

“This is the DCAA’s most comprehensive strategy plan and comes at a time when the aviation industry is on a fast growth trajectory, with Dubai being on a fast track towards achieving major milestone, including becoming the world’s top airport for international passengers,” El Soud said.

“The 2007-2009 strategy plan was more focused on building the DCAA organisation, while the 2010 strategy plan refined the vision,



mission, values and guiding principles, along with setting up the key performance measures.”

The corporate planning team, led by DCAA performance specialist Muna Al Nuaimi and comprising of members from all the DCAA departments, worked on preparing the strategy plan and overseeing its smooth implementation.

The DCAA benchmarked the 2013-2015 strategy plan with other destinations and completed it in line with the regulations and policies of the ICAO.

According to the plan, the aviation sector supports 259,000 jobs and helped generate more than \$11.7 billion in 2011, both directly and indirectly, through support for tourism and other industries.

Aviation’s contribution to Dubai’s GDP is expected to reach AED165 billion, which is

equivalent to 32% – up from 28% recorded in 2011, according to Oxford Economics estimates.

The aviation sector employs more than 5% of the ‘waged workforce’ in Dubai, the plan claimed.

The DCAA expects to see passenger aircraft movement for both Dubai International and Dubai World Central reaching 355,000 this year and 385,000 and 416,650, respectively in 2014 and 2015. The target for cargo aircraft movements has been fixed at 28,250 this year and 31,500 in 2014 and 35,000 in 2015.

Over the next three years the DCAA aims to work on several initiatives, including an airspace development programme, E-complaint and an E-suggestion systems, an aviation consumer protection programme, and travel agency audit programmes.

The aviation industry has hailed a significant development on climate change issues made at the latest ICAO meeting. After two weeks of tense negotiations, following many years of discussions, delegates representing 191 countries agreed a resolution charting the way forward for tackling aviation's climate change impact.

Jane Saxton reports.



Paul Steele:
"I congratulate the ICAO leadership for their vision and skill in rallying interests around a common purpose."

Aviation industry hails climate change breakthrough

It took a long while but the aviation industry has stood up to its critics and the threats – particularly by the Europeans to take the law into their own hands – and adopted a resolution to bring industry-wide agreement for emissions and environmental management.

"This is clearly an historic resolution, showing the leadership of both developed and developing country governments meeting at ICAO to drive through the first comprehensive agreement on climate change for any global sector," said Paul Steele, executive director of the industry-wide Air Transport Action Group (ATAG).

"It represents significant progress. The aviation industry has been advocating such a scheme since we developed the first global industry targets five years ago. We now have agreement on a global scheme and a timeline and the building blocks to deliver it."

Despite being seen as the "bad boys" of pollution, the

aviation industry has made cuts much greater than any other industrial sector by introducing new technologies to provide cleaner aircraft.

"The resolution highlights the significance of continued work on the so-called 'basket of measures', recognising that a market-based measure is just one of a suite of important tools needed to reduce aviation emissions," Steele said.

"New technology, more efficient operations and infrastructure improvements also need to be pursued – things our industry has been doing for many years."

The resolution commits governments to develop a global market-based measure for aviation emissions from 2020, to be decided at the next ICAO assembly, scheduled for 2016.

Technical discussions

The next three years will be spent on technical discussions as states work on the design elements of such a scheme, including standards for the monitoring, reporting and verification of emissions and the type of scheme to be implemented.

The aviation industry, coordinated through ATAG, submitted a working paper to the ICAO Assembly from the global associations Airports Council International (ACI), Civil Air Navigation Services Organisation (CANSO), International Air Transport Association (IATA), the International Business Aviation Council (IBAC) and the International Coordinating Council of Aerospace Industries Associations (ICCAIA).

"Industry looks to ICAO as the body safeguarding the harmonised global system of standards that enable us to provide air services in a safe, secure and reliable manner. We congratulate the ICAO leadership for skilfully guiding these negotiations. Industry stands ready over the next three years to assist states to develop the proposals needed for a 2016 sign-off," Steele said.

IATA director general and CEO, Tony Tyler, said: "Reaching this landmark agreement among ICAO's 191 member states was a challenging task. The result carries on the ICAO tradition of uniting governments to focus on the global standards that underpin global connectivity. I congratulate the ICAO leadership for their vision and skill in rallying interests around a common purpose."

Controversial emissions tax is ended by new resolution

The ICAO climate agreement has finally put to bed the threat of the European Union's Emission Trading Scheme (ETS) – dubbed an unfair tax on airlines and bitterly opposed by airlines and governments outside the EU.

The controversial scheme had been suspended by the EU amid the opposition by nations ranging from the USA to the UAE, China and India – a move that Paul Steele said was a catalyst to bring about the resolution.

Amendments approved by the ICAO executive committee included the removal of a clause that would allow member states to implement market-based measures that apply to flights to or from third countries that arrive in or depart from airports in those states.

Instead, the agreement now calls for member states to "engage in constructive bilateral and/or multilateral consultations and negotiations" with other states when creating new and implementing existing market-based measures.

Another amendment to the proposals brought additional relief to nations in the Middle East and Africa identified as "developing countries".

ICAO member states will, in future, be required to grant exemptions for applying such market-based measures on routes to and from developing countries whose share of international civil aviation activities is below 1% of total revenue/ton kilometres of international civil aviation activities, before a global scheme is rolled out.

Member states voted 97 to 39 to drop the clause that would have allowed individual states to launch their own market-based measures



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When Jazeera Airways posted an annual loss of KD8.2 million (\$28.4 million) in 2009, the outlook appeared bleak for Kuwait's fledgling private aviation sector.

The emirate's much-vaunted liberalisation drive had now produced two struggling private carriers – also including Wataniya Airways, which was months away from bankruptcy – and flag-carrier Kuwait Airways continued its two-decade-long run of almost uninterrupted annual losses.

For Jazeera chairman Marwan Boodai, however, the finger of blame was pointing squarely outside of Kuwait. He believed that larger regional competitors were dumping capacity in the emirate in order to re-route traffic through their own hubs. The success of Jazeera's subsequent turnaround plan appears to have validated that judgement.

"Until 2009, we had been profitable every single year since our inception," Boodai noted. "But in 2009 we had a huge over-supply of capacity in the marketplace, due mainly to the big three Gulf carriers [Emirates, Etihad and Qatar Airways]."

Kuwait's domestic airlines shouldered some of the responsibility. Jazeera had commitments for 40 Airbus A320s at the time – originally targeting a multi-hub model across the Gulf – while Wataniya had signed for seven aircraft, despite its niche focus on all-premium cabins. But it was the region's larger carriers that pushed capacity over the edge. Amid a deepening global financial crisis, average load factors in Kuwait fell to just 51%.

Mammoth orders

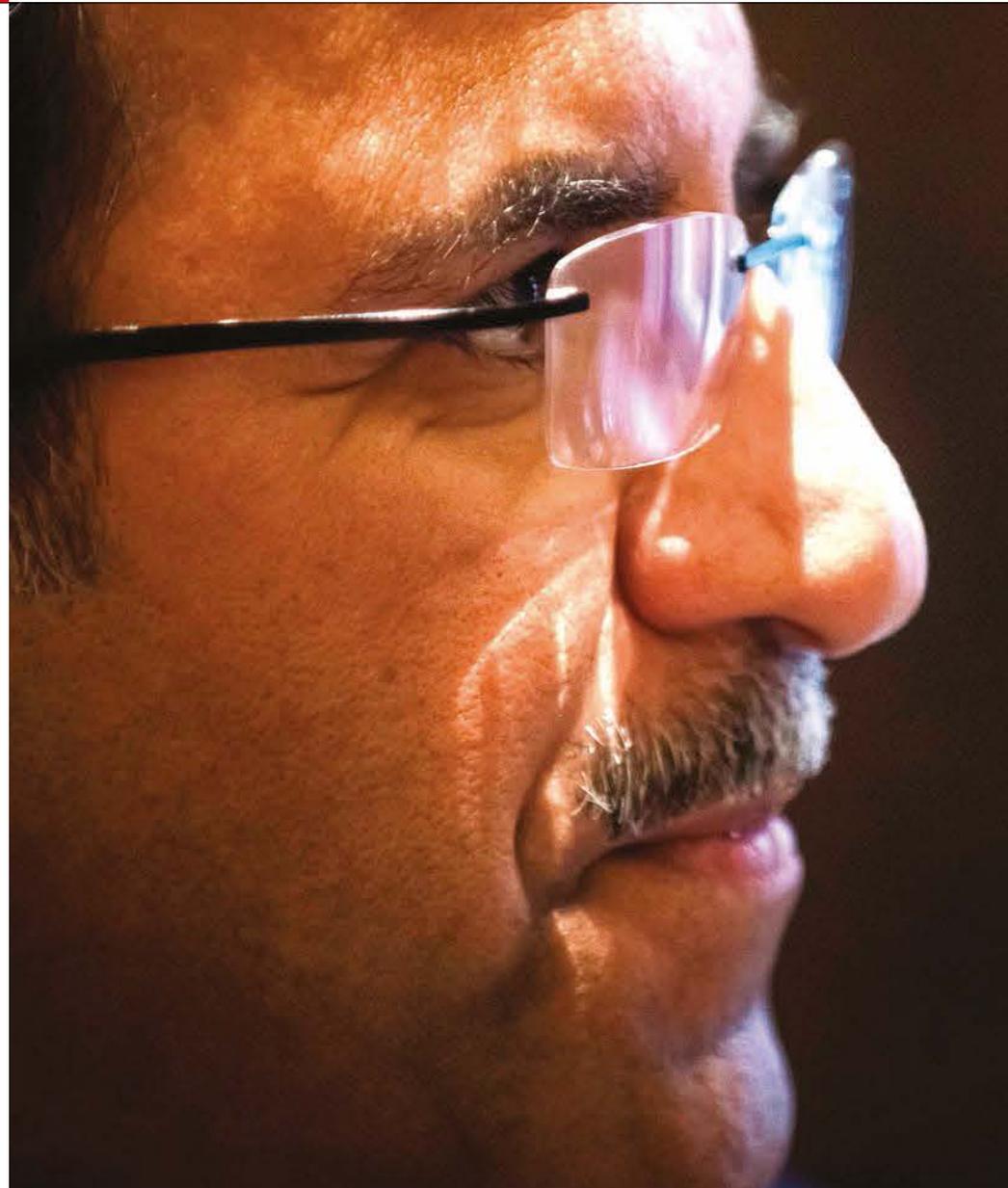
"It was a perfect storm. With all the mammoth orders that were placed [by Gulf airlines] in the mid-2000s, they simply didn't have a place to operate these aircraft," Boodai recalled. "They couldn't even park them. So they were just throwing capacity left, right and centre."

Jazeera responded by sacrificing growth for profitability. The airline slashed its order book from 40 to 15 aircraft; it withdrew low-yielding services to the Indian sub-continent; and it acquired Sahab Aircraft Leasing Company. Though the latter move cost KD25.6 million, it gave Jazeera the ability to scale back its fleet without selling aircraft during a downturn.

"We transferred all our assets into Sahab and within four months we had deployed almost half of our fleet internationally," Boodai said. "We knew we couldn't remove excess capacity just by re-allocating our fleet within the Middle East. The market simply wasn't there."

At the time of writing, the group's fleet consists of 13 aircraft. Seven are placed with Jazeera, while Sahab has leased four to Virgin America, one to Sri Lankan Airlines and one to Saudi Arabia's Nas Air. Another aircraft was due to be delivered in October 2013, while the final unit will arrive in May 2014.

As well as boosting flexibility, Sahab allows Jazeera to continuously rejuvenate its fleet with



more fuel-efficient units. "We have a very simple model. When we buy new aircraft, we deploy them in Jazeera's regional network," Boodai explained.

"Then we take out the older aircraft and re-deploy them through Sahab into the international market."

Capacity cuts continued into 2011, with Jazeera reducing available seat kilometres (ASKs) by a further 28%. Through tight capacity management and network rationalisation, the airline has grown yields by 2.5 times since 2009. These higher returns have offset its still-modest 70% load factor, paving the way for restored profitability. The airline has now been in the black for 12 consecutive quarters.

Although Jazeera styles itself as a low-cost carrier, burdensome regulations in the Middle East necessitate tweaks to the no-frills model. Visa restrictions, closed skies policies and ground

service monopolies push up cost structures, so the emphasis is on passenger value rather than just volume.

"Our focus is not just on load factor, but on getting costs as low as possible," Boodai affirmed. "In order to reach [load factors in the] 80s we'd be sacrificing yield, and that's something we don't want to do."

In pursuit of higher yields, Jazeera provides many services that go beyond the traditional low-cost carrier offering. Passengers are given 40kg of free baggage allowance plus complementary meals, for example. "They want to have the full package," Boodai said. "If you provide a service that customers appreciate, they will be willing to pay extra."

The airline also has a European-style business class product consisting of vacant middle seats, plus benefits like lounge access and 60kg of luggage. The seat pitch is consistent throughout the aircraft, giving Jazeera the option of deploying

Jazeera Airways is cautiously readying itself for growth following a two-year turnaround plan focussed on reducing capacity and boosting yields. Martin Rivers bears more from chairman Marwan Boodai.

Jaz hits the right note...

an all-economy, 165-seat configuration on certain routes.

With its hybridised product delivering consistent profitability, Boodai is turning his attention to the possible resumption of growth from 2017 onwards.

Jazeera will issue a request-for-proposal for more aircraft in the third quarter of 2014. "We haven't really decided what the right number will be yet," the chairman admitted. He said that deferring deliveries will allow the market to "test all the teething problems" of new types like the A320neo and Bombardier CSeries.

The pace of expansion will be determined by Jazeera's on-going strategic master plan, (STAMP), which took the baton from the turnaround plan in early 2012. Running for a three-year period, its emphasis is on preserving profitability while exploring new growth opportunities.

Boodai said the route network will not change

profoundly under STAMP. "We don't need to go beyond our 19 destinations," he insisted, while admitting that "at least a dozen" other major cities – specifically including Tehran – fall within Jazeera's average two-hour flight radius. Frequency changes are more likely. The suspension of the airline's three Syrian destinations, for example, was followed by an uptick in flights to Jeddah, Cairo and Dubai.

Egypt remains the most important country in Jazeera's overseas network, due largely to the 450,000 expatriates who live in Kuwait and regularly fly home.

The airline serves six destinations in Egypt – Cairo, Alexandria, Sharm el-Sheikh, Luxor, Sohag and Asyut – accounting for 49% of ASK capacity. Political upheaval in the country has not significantly affected demand for Kuwaiti flights. In the first half of 2013, passenger numbers on Jazeera's Egyptian routes were higher than in the

corresponding period three years ago before the revolution.

"We believe that Egypt is now going in the right direction and actually we see it as an opportunity," Boodai said. "We haven't had a slowdown, but we have had a loss of opportunity... just imagine how much more capacity we can deploy on the same routes once things settle down."

Future growth of the network will hinge on Jazeera's ability to grow its hub at Kuwait International Airport, which is also home to flag-carrier Kuwait Airways.

The gateway's annual footfall of nine million is modest when compared to other Gulf hubs. But Boodai noted that in Dubai, which handled a total of 58 million people last year, just 10 million touched ground in the city. The proportion of origin-and-destination traffic at Kuwait is far higher. "So nine million is a big, big number given the size of the local market," he argued.

It is easy to see why so many people in Kuwait are flying. About 68% of the emirate's 3.8 million-strong population are expatriates, creating a strong visiting-friends-and-relatives (VFR) market.

Buoyant demand

Among its 1.3 million nationals, high disposable incomes also ensure buoyant demand for air travel. Kuwait has the world's eighth highest GDP per capita, and 94% of its citizens work in the public sector. Their salaries were increased by 25% last year alone.

The country's oil-rich economy is not without its downsides, however. Generosity by the government has fuelled inefficiency at flag-carrier Kuwait Airways, whose long-running privatisation shows little sign of getting off the ground.

Boodai confirmed that Jazeera remains keen to invest in the airline, but he said previous attempts at finding a buyer had been grossly mishandled. Sovereign wealth fund the Kuwait Investment Authority "messed it up" in 2011 by not fully disclosing the balance sheet, he complained.

"Jazeera is definitely interested in the aviation sector in our part of the world. If it is offered at the right price, then yes there is merit in Kuwait Airways," he said. "We would always consider investing. Governments should be in the business of governing, not flying aircraft or driving buses."

Elsewhere in the region, regulatory hurdles continue to block Jazeera's former multi-hub aspirations. The forced closure of its Dubai hub in 2009 highlighted on-going protectionism by government-owned airlines, and Boodai has little interest in pursuing Air Arabia's joint-venture model. His lobbying for a "GCC one sky" based on Europe has yet to gain traction.

Instead, Kuwait will for now remain Jazeera's only hub. The airline will continue focusing on high-yielding regional flights, and it will explore ways to complement Kuwait Airways' long-haul network. 'Growth' is back on the agenda, but the key word is still 'caution'.



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IN IT FOR THE LONG HAUL

*With Boeing's next-generation 777X set to further expand Emirates' reach around the globe, chief commercial officer Thierry Antinori explains to **Martin Rivers** how the airline's in-flight product is evolving to meet the needs of ultra-long-haul flying.*

Few people familiar with the history of Emirates Airline will have been surprised by news that the Dubai flag-carrier plans to more than double its US network over the next five years.

For an airline that receives an average of one Airbus A380 each month – not to mention its growing fleet of Boeing 777-300s – expansion has become the norm. Emirates today serves 135 destinations across 77 countries, with its steady stream of route launches most recently including Angeles in the Philippines, Conakry in Guinea and Sialkot in Pakistan.

But growth of the network only tells part of the story. As Emirates gears up for its widely expected 777X order at the Dubai Air Show in November, chief commercial officer Thierry Antinori is turning his focus to in-flight enhancements tailored for this new breed of wide-body aircraft.

“We work closely with the manufacturers and

now, with the new generation of the 777, we are working on innovations regarding ultra-long-haul flights [lasting] from 18-20 hours,” he said. “Our DNA says that we must keep innovating and we are working on new concepts, new materials, new seats, and new in-flight entertainment.”

Emirates already operates 16-hour non-stop flights on routes such as Dubai to Los Angeles. But, with no end in sight to its double-digit growth projections, the airline is increasingly looking to stretch the limits of ultra-long-haul flying.

While the extended range of the 777X will go some way to adding new destinations, sceptics caution that new technology brings with it the risk of boredom, fatigue and stress for passengers.

“We will work on the lights, the palettes, the colours, and the quietness of the cabin,” Antinori said when asked about efforts to minimise on-

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board discomfort. “And we are permanently reviewing biological rhythms for meals. We will have things that might not be immediately visible, but that will continue to improve the customers’ relaxation.”

Alongside improved lighting, air quality and humidification, he stressed that “soft factors” – a reference to the personal touch for which Emirates has become renowned – will also play a crucial role in keeping passengers content.

“The manner in which our people serve the customer is a part of the product,” Antinori emphasised. “We are not one of those airlines who make rules about when service will take place. No. Our people are there for the whole flight, to deliver food as required and to help and assist our customers.”

In theory, the flag-carrier’s 10 777-200LRs already have a maximum flying time of about 19 hours. In practice, however, Dubai’s geographical location at the crossroads between east and west limits the need for such journey times. Pushing further into the ultra-long-haul market will, therefore, be likely to involve bypassing the airline’s home base – for example by launching non-stop flights from Asia to North America, or from Australia to Europe.

Evidence is emerging of Emirates’ willingness to look beyond Dubai. The airline launched its first transatlantic flights from Europe in October, connecting Milan to New York. Antinori insisted that there are “no plans at present” to replicate the fifth-freedom model from markets like the UK, but opportunities will doubtless be assessed as the fleet continues growing.

Quizzed further about on-board innovations for the fleet, Antinori said passengers have come to expect a “permanent evolution” rather than a “big revolution”. Upgrades to in-flight entertainment systems typically come in one- or two-year intervals, he noted, ensuring gradual adoption of the latest technologies.

In May 2012, Emirates expanded its information, communications and entertainment (ICE) system to include 27inch screens in first class, 20inch screens in business class, and 12.1inch screens in economy class. The back-seat HD devices feature 1,400 channels of entertainment and have been voted the world’s best airline in-flight entertainment by Skytrax for eight years running.

Last year also saw the introduction of OnAir Wi-Fi internet connectivity to Emirates’ entire A380 fleet.

Predictably, Antinori is keeping future



Thierry Antinori: Passengers have come to expect a “permanent evolution” rather than a “big revolution”.

enhancements under wraps. But he noted Emirates’ reputation for pioneering technologies. In 1992, it became the first airline in the world to install TV screens on every seat; in 2008, the first to allow on-board mobile phone calls, as well as the first to provide in-flight showers.

“We keep upgrading. In the latest aircraft we received, we upgraded the remote controls for our in-flight entertainment systems, for example,” he said.

“It will continue. We continue on the learning curve to improve existing products, to have a permanent positive evolution. Together with new technology this will make longer flights easier, and even more comfortable.”

Antinori’s confidence in the on-board product became apparent when the conversation turned to social media – a sphere in which he admitted Emirates was “not the first mover”.

“Because we work very hard on our product, anything that allows the customer to compare and benchmark products is good,” he argued. “If you have a strong product with good feedback from

customers, that’s a channel you can leverage very well. So, for us the strategy is to invest in the brand, invest in the product, and new technology will take care of the rest – because the customer is the referee.”

Empowering customers through online reviews is a double-edged sword, however, as others have discovered. In September, British Airways became the subject of ridicule on Twitter after one disgruntled customer paid \$1,000 for a promoted tweet reading: “Don’t fly @BritishAirways. Their customer service is horrendous.” The bolshie move garnered widespread media coverage around the world, not to mention thousands of retweets.

But Antinori insisted that meritocracy ultimately wins the day online. “You cannot control everything on social media,” he said. “You cannot hide. You’re either completely out, and you have a lot of missed opportunities, or you are in, and you have to be good. So we choose to be in.”

Amid all the talk of strategic evolution, he inevitably broached the subject of partnerships. Emirates has long been praised for going it alone in the global aviation scene, snubbing alliance membership and balking at investments after its ill-fated accord with former equity partner Sri Lankan Airlines.

Executive vice chairman Maurice Flanagan had been among the most vocal critics of non-organic growth, saying it “eats up an enormous amount of senior management time” and is ultimately “just not worth it”. So has anything changed since his retirement in April? Not according to Antinori. “Since day-one, our strategy has always been to concentrate on ourselves first – our brand and our own operation,” he said. “We don’t invest in airline stakes. We keep our money to buy aircraft.”

The obvious exception to Emirates’ independence is its traffic-sharing partnership with Qantas, which was signed in September 2012.

Antinori described the deal as a “very unique opportunity” reflecting his company’s limited reach in Australasia. It is unclear how the partnership will evolve if Emirates starts plying more ultra-long-haul destinations with its forthcoming 777Xs.

What is clear, though, is that Dubai’s flag-carrier has no intention of slowing down. “We are a leader now – we are proud of this, yes – but in our mind we are still the challenger every day,” Antinori concluded. “That’s the attitude of the Dubai people. They are self-confident, but they are very humble.”



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Ghaith Al Ghaith:
Flydubai was
always going to
"do things a little
bit different".



*Flydubai took an unexpected turn in June when it unveiled a new business class product. Chief executive Ghaith Al Ghaith tells **Martin Rivers** why the low-cost carrier is going down the premium path.*

The first Flydubai service offering business class took off for the Ukrainian capital Kiev on October 8, sporting 12 premium seats finished in Italian leather and with a generous seat pitch of 42 inches.

By the end of 2013, the number of destinations benefiting from the two-cabin configuration will have risen to 27.

Several of the routes earmarked for an upgrade – notably the Kyrgyz capital Bishkek, Donetsk in Ukraine, and Juba in South Sudan – are not currently served by a business class operator.

Although premium cabins may seem anathema to the low-cost model, chief executive Ghaith Al Ghaith said unique rules apply to the UAE.

"Dubai is a business capital not just for the UAE, but for the world," he explained. "Out of the 66

destinations that we have already launched, or announced for this year, about 44 are not properly served by airlines with business class products. So we felt that there was a big gap."

Since beginning operations in June 2009, Flydubai has rapidly expanded to become the Gulf's most recognisable low-cost carrier. Its fleet of 31 Boeing 737-800s is comparable in size to Sharjah-based rival Air Arabia.

Two smaller operators – Kuwait's Jazeera Airways and Saudi Arabia's Nas Air – have also adopted the low-cost model in a region still dominated by full-service airlines.

Flydubai was always going to "do things a little bit different", in Al Ghaith's words. It was set up by the Dubai Government with the aim of complementing sister

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Flydubai adds a touch of class

CONTINUED FROM PAGE 41

carrier Emirates Airline, which has an all wide-body fleet.

The newcomer's narrow-bodies are put to work across the Middle East, Asia, Africa and eastern Europe, serving markets that require neither the capacity nor the premium layout of Emirates' larger jets. But its role as a feeder carrier for Dubai is untypical of the low-cost model, which favours point-to-point flying over hub connectivity. There is also the risk of product inconsistency between Dubai's short-haul and long-haul segments.

In many ways, then, incorporating business class should not come as a surprise. The strategy would raise eyebrows in the boardrooms of a European or American low-cost carrier, but Al Ghaith is convinced of its suitability to the Dubai market.

"We've been working on this project for the last two years," he emphasised. "Until now the businesspeople that fly with us have travelled in economy, so there was real demand that we were missing out on."

Flydubai's latest in-flight surveys, conducted between March and August 2013, found that 19% of its customers were travelling on business. That compared with 26% for leisure and 17% for visiting friends and relatives (VFR). Al Ghaith predicted that all categories of travellers would appreciate the added choice of premium cabins.

"We also serve many points on the network beyond the Middle East where there is real demand for tourism; for example out of Russia and Ukraine," he noted. "We know that based on the profile of customers who come to Dubai, there is demand for business

class, or first class even. So, again, we were missing out on that opportunity."

Al Ghaith accepted that there is a trade-off when targeting higher yields. Per-capita costs inevitably rise, coming under pressure from reduced capacity – 174 seats, down from 189 – as well as ancillary freebies.

But Flydubai is mitigating that risk through a staggered uptake of business class across the fleet. Although all of its near-term aircraft deliveries will have a two-cabin layout, no final decision has been taken about the tail-end of the 19 units arriving by 2015. The schedule for retro-fitting existing jets is also still under review.

"When you are managing a fleet, you have to be very careful to put aircraft where you can maximise

returns," Al Ghaith said, noting yield disparities between markets. "For phase-one of this project, not all of our aircraft will be retro-fitted; some will remain all-economy. As we experiment and look at our returns, then we will take the decision to introduce it across more aircraft."

Pushed to estimate how many aircraft he believes will ultimately feature two cabins, Al Ghaith added: "It is too early to say, but 20-plus would be a good target. However, maybe once we have 10 aircraft with business class we will decide to stop. It's very fluid."

On-going experimentation

His caution reflects on-going experimentation with the low-cost model across the Middle East. Air Arabia sticks fairly rigidly to the no-frills ethos, charging for meals and removing checked luggage allowances on some routes.

Nas Air opts for a three-tier fare structure with varying degrees of flexibility and in-flight service. Jazeera has the most generous perks for economy passengers, as well as featuring a European-style business class with vacant middle seats.

For Al Ghaith, however, any venture into premium was destined to involve a new cabin.

While the availability of business class has yet to be fully determined, Al Ghaith is already making plans for the next wave of potential aircraft deliveries beyond 2015.

Flydubai's existing 50-unit 737-800 order will be fulfilled within the next two years, creating a need for growth aircraft as well as replacement units. Al Ghaith had previously told Reuters that another 50-unit order could be on the cards. Without repeating that figure, he confirmed that talks about a new deal have advanced.

"We are looking seriously at making some commitments in the near future for new aircraft," he said. "We are looking at both Airbus and Boeing as a solution for our immediate and long-term requirements after 2015."

Al Ghaith rejected any presumption that Boeing is the front-runner, insisting that both the A320neo and 737 MAX are contenders. Low-cost carriers typically restrict themselves to a single fleet type in pursuit of lower maintenance costs, but synergies with sister carrier Emirates – which operates a mixed fleet – could ease this constraint for Flydubai.

"The fact that we initiated discussions with both [manufacturers] shows that we are open minded about whatever will be best for the company," Al Ghaith added. "We will evaluate that, and we will go for the best option."

Whichever aircraft type Flydubai selects, there is no doubt that it will continue expanding capacity. The airline carried 5.1 million customers last year – almost half of its footfall to date. Passenger numbers rose by 63% in the Gulf Cooperation Council (GCC) alone, compared with average growth of 21% between all operators.

Saudi Arabia, Qatar and Kuwait

remain the largest markets in Flydubai's network, accounting for four out of every 10 seats. But passenger numbers for the Commonwealth of Independent States (CIS) also rocketed by 72% last year, outpacing the 28% average for all airlines. When measured by available seat kilometres (ASK), Russia and Ukraine now rank among Flydubai's top five destinations.

"There are still tremendous opportunities in the geographical area that we cover," Al Ghaith concluded.

"When you consider how fast we have been able to grow in the short time that we have existed, you know that there is more to come. And the more popular Dubai and the UAE become, the more demand there will be."



"The middle-seat option was not something that appealed to us," he said. "To be seen as a product of Dubai, we must do things properly."

Other perks offered in the new business class include complementary lounge access, a 12.1inch back-seat HD TV, priority check-in and up to 40kg of checked luggage. Economy passengers, meanwhile, must pay for food, checked baggage and access to the in-flight entertainment system.

Asked whether Flydubai still considers itself a low-cost carrier, Al Ghaith gave a characteristically enigmatic response. "We are Flydubai," he said with a smile. "What differentiates us is that we are Dubai-centric. Dubai is the centre of our gravity. That gives us the ability to serve different markets, and so we try to offer more products."



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Jordanian ready to live the Dream despite the Syrian nightmare

European jitters about the Syrian conflict continue to take a heavy toll on Royal Jordanian Airlines, prompting ongoing reviews of its network. But, as well as responding to near-term shocks, the Amman-based carrier is standing by its long-term aspirations. Martin Rivers reports.

Though a profit of 1.1 million Jordanian dinar (\$1.5 million) may not seem much for a business with an annual turnover of 802 million dinar, Royal Jordanian was justly delighted when it scraped into the black last year.

The result marked a major rebound from its heaviest loss on record – 57.9 million dinar in 2011 – and the turnaround came despite ongoing uncertainty in the region following the Arab Spring.

But with civil war across the border in Syria now in its third year, the airline has been forced to adapt to higher operating costs and lower traffic flows from Europe. While this necessitates near-term caution, it must also prepare for a renewed expansion drive when its Boeing 787 Dreamliners start arriving next year.

“The situation in Syria had a big impact on Royal Jordanian,” explained Basma Majali, vice president commercial. “We used to carry a lot of traffic to Syria from the United States and Europe. But then we stopped flying there in July 2012, and more recently we also stopped over-flights in the country.”

Royal Jordanian’s decision to keep out of Syrian airspace reflected simmering unease about the prospect of a military escalation. But safety comes at a price. The airline’s service to Beirut now takes a lengthy detour down to Cairo before looping over the Mediterranean – a flight-path which Majali admitted hurts the economics of the route.

Turning to the broader slump in regional tourism, she continued: “As well as the direct impact of losing those passengers [bound for Syria], there was an indirect impact too. Because

of Jordan’s position close to Syria and Lebanon, we lost a big portion of tourism to Jordan. Those were passengers with good yields.”

In response, Royal Jordanian may once again scale back frequencies to some European destinations, as it did in 2011.

Although the airline has partly compensated for the loss of tourist traffic by boosting Asian transit flows, Majali said this is not an ideal substitute. “European traffic going to Asia is lower-yield,” she noted. “So we might minimise some European frequencies if the situation [in Syria] does not improve. We won’t suspend the routes, but we might shrink them.”

European routes

Alongside Royal Jordanian’s 14 western European routes, the network comprises roughly 25 destinations spread across the Middle East and North Africa. Further afield, it flies to four North American cities – New York, Chicago, Detroit and Montreal – as well as seven south Asian cities. In July, Accra in Ghana and Lagos in Nigeria became its first west African links.

With European footfall still under pressure, Majali said every region has been included in a “detailed network review” aimed at identifying new markets.

As well as opening up Africa – flights to Algiers were added in February, while Nairobi, Addis Ababa and Dar es Salaam were also studied – Royal Jordanian has its sights firmly set on Asia and North America.

“We are thinking of operating to Toronto, Washington, Shanghai or Seoul, and Guangzhou,” she noted. “Our feasibility studies

are in the final stages but the board has not yet given its approval.”

On the flipside, Majali said two routes – Colombo in Sri Lanka and Alexandria in Egypt – have been under-performing. A decision will be taken this year over whether they should be withdrawn, she said.

The suspension of Colombo would have a knock-on effect for codeshare partner Sri Lankan Airlines, which started selling tickets on Royal Jordanian’s Amman-Colombo service in August 2012. It remains to be seen whether the Sri Lankan carrier would consider launching its own service in response. But Majali affirmed that codeshares would play an increasingly crucial role at the Jordanian flag-carrier as its network review progresses.

“If you don’t have the capacity to fly the route yourself, codeshares are a very good way of serving your customers,” she said, pointing to existing partnerships with Oneworld members British Airways and American Airlines. “It can be as good as operating it yourself.”

As well as strengthening its ties within the Oneworld alliance – Cathay Pacific and Finnair are two carriers on Royal Jordanian’s watch list – Majali said that codeshare agreements with Oman Air and Cyprus Airways were likely to be announced in the near future.

Talks with the Omani flag-carrier have been under way since at least November 2012, when Royal Jordanian cancelled its Amman-Muscat service. “We are in the last stages of finalising the agreement,” she said, adding that the route will continue to be operated by Oman Air. “It should be launched soon.”

The agreement with Cyprus Airways will,



“We might minimise some European frequencies if the situation [in Syria] does not improve. We won’t suspend the routes, but we might shrink them.”

BASMA MAJALI

meanwhile, entail the Cypriot flag-carrier placing its code on Royal Jordanian’s Amman-Larnaca route. Loss-making Cyprus Airways dropped its competing service earlier this year as part of a wider network retrenchment.

One thing not apparently being planned, however, is a broader strategic partnership. In April 2012, former chief executive Hussein Dabbas said that in order to fend off competition from Gulf and European “mega-carriers”, Royal Jordanian must consider a merger. “This is the trend of many airlines around the world now,” he told *Arabian Business*, adding that consolidation in one form or another was “a must”.

Three weeks later, Dabbas stepped down to join IATA as regional vice president for the Middle East and North Africa. He was replaced by one-time government minister Amer Hadidi. Asked whether a merger was still being pursued under Hadidi’s leadership, Majali said: “As far as I know, nothing is on the table.”

But, while reviews of the network will continue on a rolling basis, greater certainty is attached to Royal Jordanian’s fleet renewal. The airline has 11 787-8s on order, signing commitments for the aircraft between 2006 and 2010.

“We will start receiving our 787s around the end of the second quarter of 2014,” confirmed

Majali, adding that five deliveries will be made next year, with the order being fulfilled by 2017. “Four will be leased and seven will be purchased... previously we used to prefer leasing, but now we want a mixture of leased and owned aircraft.”

The carrier’s 32-strong fleet currently comprises four A340s, three A330s, an up-for-sale A310, two more A310F cargo jets, four A321s, six A320s, four A319s, five Embraer 195s and three E-175s.

Phasing out

The Dreamliners should facilitate the phasing out of the A340s, though Majali said no timeline has been laid out for withdrawals. As the flagship type, the new arrivals will almost certainly be put straight to work on the upcoming Washington and Toronto services, as well as serving other long-haul links in North America and Asia.

For the narrow-body fleet, Majali said it is likely that some leases on the A320-family jets and the Embraers will not be renewed when they expire next year. “We are studying all options [for narrow-body replacements],” she said. “We will go with whatever is financially best from an operating perspective. We’re looking at the A320neo, the CSeries and the new Embraers.”

Profitability is far from guaranteed in 2013 – Majali said just breaking even will be an “achievement” – but flexibility with the network and a more fuel-efficient fleet should keep Royal Jordanian’s head above water. Longer-term, its future growth prospects may sadly be determined in Syria’s capital Damascus more than in Amman.

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FlyGeorgia began operations in August 2012 with backing from TASC Aviation, the Dubai-based consultancy wing of Airbus. Though privately owned, the start-up underscores the Georgian Government's commitment to transforming capital city Tbilisi into a major hub for the Caucasus. Martin Rivers reports.

Georgia on their minds

According to FlyGeorgia chief executive Bijan Mougouee, when Georgia started 'open skies' competition broke out and flag-carrier Georgian Airways lost a big part of the market.

"Turkish Airlines, Pegasus and so many others began to dominate the Georgian market. Georgian Airways, which had been privatised, was not really suited to cope with that competition," said Mougouee.

Rather than taking the airline back under its wing, the state opted to strengthen the private sector by encouraging newcomers such as FlyGeorgia.

The start-up's ownership structure is admittedly hazy, but Mougouee stressed that the Government has not taken a holding in the carrier. "The Government only supports us in terms of not creating barriers," he affirmed. "That's more than enough."

FlyGeorgia operates a fleet of two Airbus A319s and one A320, giving the European manufacturer a foothold in a market that has traditionally favoured Boeing aircraft. All of the Airbus jets are on operating leases of around five years and there are no immediate plans to place new orders.

Hub development

However, with FlyGeorgia spying long-term hub development – "we have a clear strategy of connecting south to north via Tbilisi" – Mougouee said that smaller regional aircraft might eventually be introduced.

"We are looking into the possibility of 50-70 seaters," he confirmed. "In order for us to do the hub concept, these would serve regional areas as a feeder for our Airbuses... But it's too early to say what type of aircraft we will use. All options are on the table."

One possibility would be utilising Georgian Airways' smaller Bombardier CRJ100s and CRJ200s under codeshare agreements. Mougouee explained that the two carriers already have codeshares in place and are firmly focused on "cooperation rather than direct competition".

FlyGeorgia's early route development embodies this preference for complementary traffic. The airline withdrew from Amsterdam in order to avoid cannibalising demand for Georgian Airways' pre-existing service. It also codeshares with its older brother on flights to Erbil in Iraq and Sharm el Sheikh in Egypt, and will do the same when Georgian Airways launches flights to Baghdad.

But, while avoiding head-to-head competition with other Georgian carriers, it has not been shy about tapping into under-served markets. FlyGeorgia now flies to Brussels,



"The Government only supports us in terms of not creating barriers. That's more than enough."

BIJAN MOUGOUEE

Dusseldorf and Kiev in Europe, as well as Dubai, Tehran and Cairo.

Other Middle Eastern destinations are being considered, Mougouee said, singling out discussions with airports in Saudi Arabia and Kuwait. But he emphasised that significant expansion is unlikely to come before the latter half of 2014.

Two possible exceptions are London and Delhi, which would strengthen transit flows through Tbilisi. Flights to the British capital had been planned as early as this summer, but were still being considered as *Arabian Aerospace* went to press. "We know that it's going to be a very profitable route," Mougouee said. "We've already held talks with Luton and Stansted."

With a population of just 4.5 million, Georgia's modest origin-and-destination traffic may strengthen the case for a merger between FlyGeorgia and Georgian Airways. Mougouee admitted that "eventually" that could happen, though he said it is "too premature" to discuss at this stage.

"We have a lot of ideas. The extent to which they can be fulfilled depends on the development of foreign relations, the market, the economic situation and, of course, the political situation as well," he concluded. "These will all affect our future roadmap. We are targeting a lot of things, but while you are developing you should not be too demanding."

NO MISSION IMPOSSIBLE



What are the main missions of Mi-17 type helicopters?

- Rapid delivery of light weapons, ammunition and equipment, as well as of military units;
- Assault troops landing operations;
- Fire support for the landed assault troops in the battlefield;
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Iraq turns the heat on terror

A rapidly deteriorating internal security situation, with a resurgent Al Qaeda, is the backdrop to Iraq's plans to buy Russian – and possibly US – attack helicopters. Alan Dron reports.

The Iraqi Air Force is due to get a significant boost this autumn, with the first batch of a substantial order for Russia's Mil Mi-28NE Havoc attack helicopter due to start arriving.

The Mi-28NE is the export variant of the Mi-28. Armed with a Shipunov 2A42 30mm cannon under the nose, together with the ability to carry a variety of anti-tank and anti-aircraft missiles, plus unguided rocket pods, it forms a major part of a controversial \$4.2 billion arms deal between Baghdad and Moscow.

The agreement, announced in October 2012, was apparently withdrawn after allegations emerged of financial kickbacks to Iraqi officials, but then reinstated in 2013.

As well as the Mi-28s, the deal includes up to 42 Pantsir truck-mounted gun/missile air defence systems.

There will reportedly be 10 Mi-28s in the initial batch. The total number ordered was initially reported as 30, but Jordan-based Iraqi affairs specialist Kirk Sowell said his information was that 40 were now being acquired,

with deliveries due to start as *Arabian Aerospace* was going to press.

Internal security is the driving force behind the Iraqi requirement for the helicopters.

"They need them to patrol the deserts because the Al Qaeda group in Iraq is terrorising convoys, both civilian and military, that travel into the desert, especially in Anbar [province]", said Sowell, editor-in-chief of *Inside Iraqi Politics*.

Al Qaeda in Iraq had been given huge encouragement by the civil war in neighbouring Syria, he said and had grown rapidly since spring 2013, to the point where it was now the largest grouping in the worldwide Al Qaeda 'franchises'.

"They were never this large before. Syria has really been a boost for them in terms of morale and they now have a safe haven in eastern Syria. They can operate freely there and send people at will into Iraq. Ninevah [province] is really bad, as well as Anbar." There were also increasing

Kirk Sowell: "They need them to patrol the deserts because the Al Qaeda group in Iraq is terrorising convoys, both civilian and military, that travel into the desert."

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numbers of attacks in Baghdad itself, he said.

On the day he spoke, more than 50 people died in a series of blasts in the Iraqi capital. Nobody claimed responsibility but Sunni Moslem militants – the same pool from which Al Qaeda recruits – were suspected.

At 250,000 strong, the Iraqi army was large and well-armed and would always defeat Al Qaeda's forces when it encountered them, but it lacked intelligence capability to track down the insurgents.

Other failings, such as poor logistics and corruption, were also hindrances. "Appointments seem to be made on grounds of political reliability, rather than competence."

The Mi-28s would be useful in covering large areas of territory in trying to hunt down the insurgents, who usually favour civilian pick-up trucks as transport.

Iraq is also reportedly seeking unmanned air vehicles (UAVs) to help improve surveillance of desert areas.

And at June's Paris Air Show, Russian news agency RIA Novosti reported that Iraq had signed a contract with Russia's arms export organisation, Rosoboronexport, for an unspecified number of Kamov Ka-52 Hokum B advanced attack helicopters.

Command ships

The Hokums, dubbed Alligator by the Russians, are reportedly to be used as command ships for larger numbers of Havocs.

A spokesman for Russian Helicopters said he was unable to comment on military orders for its products.

Meanwhile, the Pantsir systems were aimed primarily at Turkey, added Sowell. Iraqi prime minister Nouri al-Maliki had made pointed comments about neighbouring countries violating Iraq's airspace and these were clearly aimed at the Turks.

However, despite the arrival of the Russian helicopters, Iraq is still reportedly keen to buy the Mi-28's US counterpart, the AH-64 Apache.

According to US reports, a July visit by Iraq's foreign minister, Hoshyar Zubari, to Washington DC to meet his US counterpart, secretary of state John Kerry, had at the top of the agenda a request to buy the Boeing helicopters.

The US administration is reportedly split on whether to supply the AH-64 to Baghdad. Some officials and politicians are wary of acceding to



The Mi-28s would be useful in covering large areas of territory in trying to hunt down insurgents.

Iraqi requests, concerned that the technology in any advanced US military equipment sold to Iraq would quickly find its way to Iran.

Supporters of a deal make the point that selling Apaches to Baghdad would at least shore up the US's dwindling influence in Iraq and give Washington some leverage; leaving the field clear to Russia would bring no such benefit.

Attack helicopter

Fielding two types of attack helicopter – three, if the Ka-52 order is confirmed – seems bizarre, but some nations do split their purchases of weapons systems between different nations, usually as a hedge against future arguments with suppliers creating problems with supplies of spare parts.

However, that level of redundancy comes at a heavy cost.

"Buying two different types would be a

logistical nightmare," commented Douglas Barrie, senior research fellow at London's International Institute of Strategic Studies.

"The logistics train to support a small number of aircraft would be huge and, financially, the cost overheads of running two types would be punitive."

Costs of a more basic sort are also involved. Having spent around \$4.2 billion with Russia, the talked-about \$5 billion arms deal with the US – not only encompassing Apaches but also Predator and Reaper UAVs – is simply not affordable, said Sowell.

"They don't have the money for this. They want [the weapons] but there's no specific appropriations in the Iraqi defence budget." Even the money being used for the Russian contract was being shunted around between various Iraqi ministries.



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Turkey trainer takes up the challenge

The Hürkuş taxis back after first flight.
Inset left: test pilot Murat Özpala.
Inset right: Gönül Hürkuş celebrates the tribute to her father.

A new basic trainer that could challenge the established marques has made its maiden flight in the skies above Turkey.
Mohammed Ahli
reports from Ankara.

Turkey has achieved a major milestone with the first flight of its basic trainer, the Hürkuş, at the Turkish Aerospace Industries' (TAI) premises near Ankara.

The Hürkuş was designed and manufactured by TAI, primarily to meet the training and light attack/armed reconnaissance aircraft requirements of the Turkish armed forces.

The aircraft is named after the Turkish civil aviator, Vecihi Hürkuş, who first took to the skies some 78 years ago. His daughter, Gönül Hürkuş, was present as the aircraft bearing her late father's name took to the skies.

The trainer will be seeking both the Turkish Directorate General of Civil Aviation (DGCA) and the EASA certification, which will open the doors for TAI to offer the type internationally.

Current contenders

When certificated it will feature a 1600hp engine, and TAI believes it will challenge the current contenders, such as the Beechcraft T-51 and the Embraer Super Tucano. The aircraft, fitted with a pressurised cockpit and ejection seats, was designed by TAI after a lot of research with fast jet pilots. In addition to pilot training missions, TAI is developing the Hürkuş to provide a low-cost and high-accuracy solution to light attack/armed reconnaissance missions.

The 33-minute maiden flight, on August 29 this year, was

watched by TAI employees, guests and the media. Hürkuş climbed 9,500ft and completed a series of flight surface control tests before successfully landing.

TAI test pilot Murat Özpala, who was at the controls, said the flight went exactly to plan and the aircraft handled perfectly. "I felt the power of the aircraft with the high take-off performance from its 1600hp engine," he said.

After the flight, Özpala joined TAI Aircraft Group executive vice president, Özcan Ertem, and the aircraft's chief engineer, Aylin Ararat, in celebrations, which included a traditional water soaking.

The Hürkuş is the latest in a string of successes for TAI, which is rated among the top 100 global aerospace and defence companies.

It acts as Turkey's centre of technology in design, development, modernisation, manufacturing, integration and life-cycle support of integrated aerospace systems. It works on fixed and rotary-wing air platforms to unmanned aerial vehicle (UAV) systems and space systems. A total of 4,600 personnel work at TAI, including 1,600 are engineers.

In the last two years TAI has flown the Anka UAV; launched the high resolution remote sensing satellite Gokturk-2, which it co-developed with the Scientific and Technological Research Council of Turkey (TUBITAK) in 2012; and brought the T129 ATAK Helicopter to delivery status.

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Eurofighter's Typhoon swing-role strike fighter is now holding out the real promise of becoming standard equipment across the air forces of the Gulf Co-operation Council nations. Jon Lake reports.



Middle East gets in the swing with Typhoon

Already in service with the Royal Saudi Air Force, the Typhoon has also been ordered by the Royal Air Force of Oman (12 on order, with 12 options), and has been evaluated, or is under serious consideration, in the UAE, Qatar, Kuwait, and Bahrain.

With 72 aircraft already on order and with the real prospect of an order for further aircraft (probably 48 rather than 72 more, plus up to 24 further Saudi-funded aircraft for Bahrain), the Kingdom of Saudi Arabia is a vitally important Typhoon customer. There have been reports that preliminary talks with the British Ministry of Defence on a further batch are already under way now that pricing changes in the wake of the loss of local assembly have been resolved.

The Royal Saudi Air Force now has its training unit (the 3rd Squadron at Taif) fully stood up, and the first frontline unit (the 10th Squadron) is in the process of forming, while two further units (the 15th and 17th Squadrons) are expected to stand up at a new King Saud base at Hafr al Batin.

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Many believe that if the Typhoon is selected in the UAE, this might trigger a 'domino effect', which could see the remaining GCC air forces opting for the Typhoon in order to gain commonality with their allies.

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The RSAF is far from a passive recipient of the Typhoon, having spearheaded efforts to field new capabilities, and having gained both air-to-air refuelling and tranche 2 air-to-ground capabilities before the British Royal Air Force. In September 2013, the RSAF even deployed four Typhoons (accompanied by four Tornados) to RAF Coningsby to participate in a joint training exercise (exercise Saudi-British Green Flag) with the UKRAF.

The Saudis also want to be involved in the development of new and additional capabilities for the Typhoon, especially in the areas of weapons and active electronically scanned array (AESA) radar, where RAF requirements may not be fully funded, and which have become, to a greater or lesser extent, export-driven.

It is Saudi requirements (and Saudi funding) that are believed to lie behind on-going efforts to integrate the Storm Shadow cruise missile (and the preliminary work being undertaken by EADS Cassidian on integrating the similar Taurus).

The “next nearest crocodile to the canoe”, according to one senior programme source, “is Triple Phase 2” – the next phase of Saudi Typhoon support, and there may be further joint funding on some weapons programmes.

The pace in the Sultanate of Oman is slower, since the Typhoon is not expected to enter service with the RAFO until 2017. But construction of the planned new base at Adam is proceeding apace and long lead time items (LLTI) are on order, ready for the Omani Typhoons to ‘slot in’ to the BAE Warton final assembly line when required to meet their planned in service date (ISD).

Two-seaters

Twelve aircraft are on order – three of them two-seaters – and Oman has options on a further 12. BAE Systems has despatched Air Marshal Simon Bryant, the former ‘number two’ in Britain’s Royal Air Force, to head up the Omani Typhoon programme in country.

The biggest outstanding fighter requirement in the region is in the United Arab Emirates, where the UAE Air Force and Air Defence (AF&AD) requires 60-90 modern fighters to replace its modernised Dassault Mirage 2000-9 aircraft.

At one time the UAE seemed like a sure-fire prospect for the Dassault Rafale but a real competition opened up in November 2011 after the UAE rebuffed the French offer. Since then the UAE has evaluated the F/A-18E, F-15E and Typhoon.

By March 2013, it was being reported that key decision-makers in the UAE, and UAE Air Force (UAEAF), preferred the Eurofighter Typhoon over the Rafale aircraft, and the partnership agreement between Tawazun Precision Industries (TPI) and BAE Systems to make parts of the Eurofighter Typhoon in the UAE gave the Typhoon an industrial edge.

In the absence of competitive offers from Dassault Aviation for the Rafale or from Boeing for the F-18 Super Hornet, Typhoon’s chances seemed to be growing, and UAE president



Sheikh Khalifa Bin Zayed Al-Nahyan is believed to have had talks on a deal for the Eurofighter Typhoon with British Prime Minister David Cameron during a meeting in London on May 1 2013.

Subsequently, it was reported that talks between the UAE and BAE Systems had run into difficulty over pricing. It is understood that the French side has gone away and further refined its pricing for Rafale, while Dassault is able to offer ITAR-free technologies that Eurofighter cannot, and could theoretically buy back the UAE Mirage 2000s for resale, which BAE Systems could not.

Despite this, many expect the UK and the UAE to sign some kind of strategic agreement at the Dubai Airshow, which could act as a roadmap that could eventually lead to Typhoon. One complicating factor is that, whatever fighter the UAE chooses, it may not be chosen on its own merits, but instead as part of a wider deal, with UAV/UCAV technology being the deciding factor.

Whereas most of the Eurofighter Typhoon campaigns in the Gulf region are led by BAE Systems, the campaign in Kuwait is led by Alenia, the Italian partner in Eurofighter – although there has been considerable UK involvement, not least from Cameron, who has had a number of discussions with the Emir of Kuwait Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah.

Kuwait was, like the UAE, once seen as a ‘sure thing’ for the Dassault Rafale but the proposed 14-28 aircraft deal was derailed in March 2010 after a four-man Islamist group, known as the development and reform bloc, asked questions in the Kuwait Parliament. Interest then switched to the Boeing F/A-18E/F Super Hornet and the F-15SE Silent Eagle.

Two Italian air force Eurofighter Typhoons were evaluated in Kuwait during July 2012, reportedly impressing the Kuwaiti Air Force with their performance. Talks are reportedly continuing.

Another nation that once seemed like a ‘shoo-in’ for the Rafale was Qatar. Its requirement for 24-36 aircraft represents a real expansion of its current 12 aircraft fighter force, as part of a wider plan to reconfigure Qatar’s armed forces for deployed operations and coalition war-fighting.

In recent years there has been a more robust interpretation of Qatar’s constitution and the nation is increasingly playing more of a part on the world stage, reshaping its regional profile.

Qatar evaluated the Rafale and F-15E in-country in 2012, but a Qatari evaluation of the Eurofighter Typhoon in the UK, scheduled for April 2011, was cancelled because the personnel involved on the Qatari side were all involved in the Libyan operations. This was finally rescheduled and undertaken at Warton and Coningsby earlier this year with a further in-country evaluation planned to take place in Qatar.

With the US Defence Secretary Chuck Hagel having rebuffed Qatari enquiries about the F-35 Joint Strike Fighter (instead offering the F-16V) Qatari interest now reportedly centres on Typhoon and Rafale.

BAE Systems has submitted request for information (RFI) material and expects an enhanced RFI or full requests for proposal (RFP) to be issued imminently, leading to a decision in the first quarter of 2014. Qatar may want a turnkey PFI-type service. Sources close to the programme suggest that Qatar will go for a tranching fighter buy with an initial purchase of a nominal 14 aircraft.

Sell-on

Like the UAE, Qatar hopes to sell-on its existing Mirage 2000s and has reportedly had discussions with Pakistan on this subject.

The final GCC air force is the Royal Bahraini Air Force, which has reportedly shown interest in acquiring a squadron of 14 Typhoons, though many analysts believe that the tiny island state could not afford such a ‘high end’ solution to its air force’s requirements.

The apparent explanation is that the aircraft would be wholly or partly funded by neighbouring Saudi Arabia, and would be added to any future Saudi order. This follows a similar proposed deal reported in November 2012, under which Saudi Arabia, Jordan and Britain were reported as being in discussion about the possibility of a Jordanian acquisition of the aircraft, with the Saudis providing financial support.

The prospect of a Bahraini Typhoon order emerged publicly following the visit of King Hamad Bin Isa Al Khalifa to London in August 2013, when the subject was reportedly among those discussed with David Cameron.

Britain remains one of Bahrain’s closest international allies and the monarchy is keen to reinforce and strengthen its ties with the UK. Some expect that the Eurofighter Typhoon may gain some kind of preferred status after the next Bahrain Air Show in January.

Many believe that if the Typhoon is selected in the UAE, this might trigger a ‘domino effect’, which could see the remaining GCC air forces opting for the Typhoon in order to gain commonality with their allies, and in order to leverage cost savings via shared support and training infrastructure and arrangements.



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A QEAF Mirage-2000-5 taxis out at Tanagra airbase prior to a two-versus-two training mission.



Qatari Mirage return is no Greek myth

Qatar's Emiri Air Force made a return appearance to Greece.

Kirk Paloulian was there to record the visit.

On September 12, some two years after the Qatar Emiri Air Force (QEAF) departed from Greece at the conclusion of NATO's operation unified protector (OUP) mission in Libya, they returned.

During the 2011 conflict, the QEAF based six Mirage 2000-5s at Souda, the Crete-based home of 115 Wing.

After opening up an official line of communication with the Hellenic Air Force (HAF) in 2012, a plan was hatched for further co-operation.

This time the base was Tanagra, just outside Athens, where the HAF Mirage 2000-5s of 331 Mira (squadron) are based.

With both air forces utilising the Dassault fighter, the QEAF believed it could learn from the wealth of experience the HAF has accrued over the years during air interceptions in the Aegean region.

A QEAF delegation visited the Tanagra Air Base in

January and June 2013 to exchange tactical know-how between the two air forces. From these discussions, the QEAF opted to take part in training flights with the HAF, live firing exercises at the NATO Missile Firing Installation (NAMFI) range in Crete and another similar facility adjacent to the island of Zakynthos.

Tanagra-based 331 Squadron was chosen to host the Qatar detachment and to ensure the QEAF became familiar with the HAF's standard operating procedures during flying training and the live firing exercises.

The core component of the Qatari detachment arrived on Thursday September 12 with the arrival of two C-130Js. The detachment move was assisted by a C-17A Globemaster before the QEAF/7 Squadron Mirage 2000-5s from Doha arrived in the evening of the same day.

Air combat

Both air forces played Blue Air and Red Air during two-versus-two air combat. In addition to the Mirage 2000-5s, the HAF provided packages of F-16C/Ds, F-4Es and A-7Es, as well as an EMB-145H airborne early warning (AEW) platform.

The live firing exercise was held from September 23-27, with each Mirage 2000-5 firing two Mica RFs (radar-guided) and one IR Magic II missile at NAMFI range against an aerial target, and a single Magic II at Zakynthos against an aerial target deployed by an A-7E Corsair.

During the following two weeks more flights took place on air combat and joint aerial tactics.

The QEAF deployment to Greece came just three weeks after another Arab nation – Saudi Arabia – had sent four Tornados and Typhoons to RAF Coningsby for a three-week training exercise.

Three based Mirage 2000-5s with a Qatar Emiri Air Force counterpart on the 331 Squadron flight line.



Royal Saudi Air Force and RAF Tornados and Typhoons are seen here in formation, during Exercise Saudi-British Green Flag.

Right: RAF Coningsby station commander, Group Captain Johnny Stringer (sixth from right), with the RSAF detachment commander, Brigadier General Al-Shahrani on his right, stand with other RAF and RSAF personnel on August 27, after six of the RSAF fighters had arrived.

Alan Warnes reports on the recent RAF-RSAF exercise – Saudi-British Green Flag – that took place at the UK’s RAF Coningsby during the first two weeks of September.



Saudis side by

After nearly three weeks of intense activity, the Royal Saudi Air Force (RSAF) finally departed RAF Coningsby, Lincolnshire, on a bright but blustery September 16.

All 300 or so personnel that accompanied the four Typhoons and four Tornados on a 6,000 mile round trip to the UK agreed they had just worked with one of the finest air forces in the world.

Brigadier General Mohammed Al-Shahrani, the RSAF detachment commander and one of most experienced aviators serving the Arab state, spelled out the importance of the exercise when he spoke to journalists on September 6.

His current job in the RSAF is deputy commander of the 2nd Flying Group at Taif and he has flown Tornado, F-15 and now the Typhoon.

“I want to emphasise that the most important objective of this exercise is to ensure RSAF personnel, from aircrew, to engineers, to staff, to fighter controllers, all get the opportunity to work side by side with the RAF,” he said.

“We need closer cooperation because we never know what the future may hold. Interoperability is key,” he added.

Forging closer relations with the RAF is

paramount to the development of the Saudi’s Typhoon and Tornado force at a time of increasing international threats. Deploying the four Tornados, which have been put through a Tornado sustainment programme (TSP) upgrade, also provided RSAF personnel with an opportunity to learn some new skills with their latest equipment.

All the RSAF Tornados were fitted with new generation Thales Damocles targeting pods. It is likely the experienced RAF Tornado crews showed some of the surveillance, reconnaissance and targeting skills they have learnt in operations over Iraq, Afghanistan and Libya.

Sandy camouflaged

This wasn’t the first time the RSAF had sent Tornados to the UK. Eight sandy camouflaged 75 Squadron Tornados deployed to RAF Lossiemouth for exercise Saudi Sword in late August/early September 2007. Headed by Lieutenant Colonel Abdulaziz al-Qadiri and hosted by 617 Squadron, the visitors were there to evaluate tactics and weapons for the TSP upgrade.

Preparations for this year’s massive logistical

operation led to 15 C-130 Hercules sorties into the RAF base during August 23-30. Down at RAF Brize Norton, Oxfordshire, home to the RAF’s tanker fleet, two RSAF A330 multi-role tanker transport (MRTTs) from 24 Squadron, which provided air-air tanker support, arrived on August 27.

This was the first time the newly delivered Saudi Airbus’ had tanked fighters on deployment overseas.

Al-Shahrani said: “I think for us it is the first time we have deployed Typhoons outside our kingdom for a long time. We are reaching out some 3,000 miles, so it is very important we test our logistical support capabilities.

“It is also the first time we are using the Airbus MRTT on a trail from Saudi Arabia. These are two areas that are important and everything has gone well.

“The Typhoons made one stop before arriving at Coningsby. We refuelled [air-to-air] about three times and that was good enough for us to test the system and test the trail. All our logistic support was delivered by C-130s and we used the MRTT to tank and ferry our main party of personnel to the UK. That is a big test for the aircraft and is proving its worth.”



side with RAF

Unfortunately, only six of the eight fighters touched down at RAF Coningsby during arrivals day on August 27, because two Tornados dropped out of the eight-ship formation over Italy due to technical issues.

This left two Tornados to soldier on alongside four Typhoons, with the two missing Tornados eventually arriving on August 29.

Although the Typhoons were marked as 3 Squadron and the dual-seater 322 was even adorned with a 3 Squadron emblem on the tail, a RSAF Typhoon pilot said the jets were from 10 Squadron aircraft flown by a mix of aircrew from both units at Taif.

The Tornados were all flown by crews from 75 Squadron based at Dhahran.

Aircrews of varying experience flew during British Green Flag, with most clocking up about seven missions.

“For this first Typhoon deployment I picked high and medium experienced crews to make sure we get it right. For the Tornado force, this was their second time in the UK so we brought a broad cross-section of experience,” explained Al-Shahrani. “One of the main objectives is to make

sure whatever knowledge we get we share it back in Saudi Arabia.”

Hosting the Saudi deployment was the resident No 3 (F) Squadron, although 11 (F) Squadron also participated, as did the Typhoon Operational Evaluation Unit, 41 (R) Squadron – its role in the exercise was unclear.

Brought everyone together

Several Tornados from RAF Marham, Norfolk-based 9 Squadron flew to RAF Coningsby on August 30 to ensure that the briefings and debriefings brought everyone together throughout the exercise period.

Al-Shahrani said: “We are flying the Tornado in the same role the RAF does, in the air-to-ground missions.

The Typhoons, just like the RAF aircraft, are flying in the air-to-air role. That way we are combining the two platforms to make sure they operate together.

“We are using the ranges, like the electronic warfare one [at Spadeadam]. While the RAF aircraft and crews have the opportunity to test their skills in this environment all the time, we

don’t have that capability yet, although we are planning something similar soon in Saudi Arabia.”

Flying over the first two days of the exercise (September 2/3) concentrated on familiarising all the pilots with the ranges, routes and weather conditions. Quickly a pattern began to emerge of two sorties a day, at 10am and 2pm.

The first real tactical missions got under way on September 4 and the crews would have been surprised to be flying in perfect conditions with blue skies and scorching temperatures all over the UK – like Saudi but without the haze!

The aircraft flew a variety of mission profiles during their stay, which got more complex as the exercise went on.

All eight fighters departed RAF Coningsby on Monday, September 16 and were subsequently followed by more RSAF C-130 flights over the next four days, while the A330 MRTTs returned to RAF Brize Norton for the trail back.

Exercise Saudi-British Green Flag had been successfully concluded and the RSAF would have left British shores knowing their objectives had been met and all the boxes ticked. Now was the time to implement the lessons they had learnt.



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Africa's first C-130J, destined for Tunisia, is rolled out of Lockheed Martin's paint shop at Marietta, Georgia, earlier this year.

Hercules still has the muscles in North Africa

From Morocco in the west to Egypt in the east, every one of the five African nations that have a Mediterranean coastline uses the Lockheed Martin C-130. But one of those countries' Hercules are to be found a long way from home. Alan Dron reports.

Sitting forlornly on tree-surrounded areas south of Lockheed Martin's huge manufacturing plant at Marietta, Georgia, are 'the abandoned airlifters'.

Parked quietly on two remote areas, away from the bustle of the factory that churns out the West's most numerous military cargo aircraft, are eight C-130H Hercules.

Their two-tone desert camouflage schemes now bleached by more than 40 years' exposure to the hot Georgia sun, the aircraft are in visibly poor shape, with sagging tyres and mould staining their paintwork.

The aircraft were ordered by Libya in 1972, as a follow-on from an initial 1969 batch of C-130s, with the government of Colonel Muammar Gaddafi paying \$70 million for the new examples. But before they could be delivered, relations between Tripoli and Washington soured so badly

that the US Government blocked their delivery. They have been parked at Marietta ever since.

A Lockheed Martin spokeswoman said the company was unable to talk about the aircraft, as it did not own them. She referred questions to the US Air Force, which in turn referred me to the Defense Security Cooperation Agency (DSCA), which handles the US foreign military sales programme, where equipment is sold by direct government-to-government agreement.

DSCA spokeswoman Vanessa Murray said the eight aircraft are still legally owned by Libya. They were no longer airworthy and had been classified as "beyond economical repair".

However, the aircraft remain packed full of spare parts that were ordered by Libya as part of the contract. At least some of those could be of use to help maintain its existing C-130s.

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“Libya wants to salvage whatever spare parts are still usable and scrap the rest,” said Murray. If the aircraft’s airframes are cut up for scrap, “The proceeds would go to Libya.”

This long-running dispute has not persuaded the new Libyan Government against ordering more of the medium cargo aircraft. In June, the DSCA informed Congress that Tripoli wanted to buy two C-130J-30s, together with 10 Rolls-Royce AE 2100D3 engines (eight installed and two spares), plus training and support for an estimated \$588 million.

The Libyan Air Force intends to use the new aircraft primarily to move supplies and personnel within the desert nation, which has limited surface transport infrastructure within its interior.

They will assist with border security, interdiction of terrorists and allow rapid reaction to internal security threats.

Currently the Libyan Air Force is believed to have around nine legacy C-130s on strength, although Flightglobal’s Milicas database records just single examples of the C-130H and the L-100, the civilian version of the aircraft. Libya’s national airline acquired several L-100s on the second-hand market over the years.

Assuming Libya’s request is approved, the new aircraft will not be the first ‘Js’ to be delivered to North Africa.

The arrival in Tunisia in April of a C-130J-30 constituted a small landmark in the more than five decades of service achieved by the US-built airlifter.

Small air force

The aircraft was the first ‘J’ to be delivered to Africa. A further example is due to arrive in Tunisia next year. As well as the C-130J, the country’s small air force has several examples on strength of one of the oldest marks, the C-130B, plus two or three later H-models. The Bs came from US surplus stocks in the 1980s.

Algeria has a reported 16 C-130Hs on strength. Of these, nine are C-130H and seven C-130H-30 longer fuselage variants, according to London’s International Institute for Strategic Studies (IISS), out of an originally-ordered 18, plus two L-100-30s.

The C-130Hs were acquired in unusual circumstances. The US Government approved their sale – allegedly at very favourable prices – in the early 1980s in appreciation of Algeria’s role in helping negotiate the release of personnel from the US embassy in Tehran. More than 100 embassy staff had been held illegally by the Iranians after the revolutionary Islamic government came to power in 1979.

Morocco bought its first examples of the C-130 in 1973 and now has 16 in service. Most are standard C-130H models, but two or three (sources vary as to the exact number) are KC-130H tankers. It also has a single example of the rare RC-130H. This, according to the IISS, is



Morocco has 16 C-130s in service.

equipped with a side-looking airborne radar. Border surveillance is thought to be its most likely role; Morocco and Algeria accuse each other of harbouring militants and of arms smuggling across their mutual border.

One C-130H was lost when it crashed into a mountain in the south of the country in July 2011, killing 78 people on board.

The largest C-130 fleet in North Africa belongs to Egypt. Following its initial 1976 order for six C-130Hs, numbers were built up steadily and now stand at 21 ‘H’ (including three bought from Denmark in 2004), three stretched C-130H-30s and a pair of EC-130H electronic intelligence platforms.

One aircraft was lost in the rescue attempt of a hijacked airliner in Cyprus in 1978, when firing broke out between a task force of Egyptian anti-terrorist commandos brought to the island by the C-130H and the Cypriot National Guard.

Recapitalisation of fleets

According to Steve Pigott, director of C-130J international programs, Lockheed Martin Aeronautics, the five African nations that border the Mediterranean are now expressing interest in the recapitalisation of their fleets. Many of the region’s C-130s were purchased in the 1970s and early 1980s and the extreme climatic conditions, plus in many cases operating into austere airstrips, have taken their toll.

“All of these nations have significant C-130 fleets and well-trained, professional air forces that operate them. And now that the C-130J has proven itself around the globe, we expect that

many of our legacy customers will continue upgrading their fleets. As such, we expect to sell more Js in north Africa over the next several years.”

While not naming names, Pigott confirms that “there are on-going C-130J procurement activities across the region at this time”.

Brazilian airframer Embraer is developing its KC-390 twin turbofan military transport to compete for roughly the same market segment occupied by the C-130, but Pigott believes the US aircraft will continue to see off rivals, despite the C-130’s design stemming from the late 1950s.

“We don’t think in terms of planes directly competing with the C-130 since we don’t believe there are any aircraft that can do what a C-130 can,” he said, citing its ability to handle tasks ranging from maritime surveillance through search and rescue to aerial refuelling.

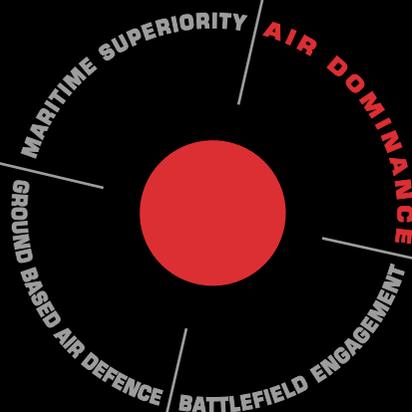
“What we usually see instead is competition for resources – does a customer focus on airlift or do they invest in fighters or ships or another weapon system?”

One factor that may prove an obstacle to newcomers such as the KC-390 gaining a foothold in the market is the presence of used C-130s from the US inventory. These can be competitively priced for resale and, although such ‘excess defence articles’ are sold on a direct government-to-government basis without Lockheed Martin’s involvement, the US company is likely to pick up contracts to support the aircraft under their new owners.

The C-130 is likely to be seen in North African skies for many years to come.

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The World's largest business aviation event – NBAA 2013 – took place in Las Vegas in October and it didn't disappoint. From new aeroplanes to new services, this show had plenty to affect the MENA markets going forward. Alan Peaford was there and reports from the show.

New Falcon swoops in to wow NBAA

French manufacturer Dassault unveiled its biggest and most advanced Falcon jet after years of secrecy over the design.

Codenamed the SMS, the Falcon 5X was revealed to media and customers at special events at the NBAA business aviation show in Las Vegas.

This new-generation business jet will feature a new flight control system, new aerodynamics and other advanced technologies – many pioneered in Dassault's military programmes.

"The Falcon 5X is the new benchmark for the creative use of advanced technology in business aviation," said Eric Trappier, chairman and CEO of Dassault Aviation. "Using design and manufacturing software and systems pioneered by Dassault, we have been able to build a larger, more comfortable and more capable aircraft that is also more environmentally-friendly and much more economical to operate compared to other aircraft in its class."

The 5X is already being tagged as an industry breakthrough, with the specifications showing the largest cabin cross-section of any purpose-built business jet and a fuel efficiency as much as 50% better than aircraft in similar target sectors.

"The Falcon 5X represents our biggest investment since the beginning of the Falcon programmes," Trappier said. "It demonstrates our commitment to maintaining the technology leadership that we have displayed in this market since our first business jet flew 50 years ago."

The new jet has a cabin height of 1.98 metres (6' 6"), an important consideration for passenger comfort on flights of 10 or 11 hours' duration. The 16-passenger aircraft has a range of 5,200nm (9,630km), connecting Los Angeles with London, Sao Paulo with Chicago, Johannesburg with Geneva, or Paris with Beijing.

Functionality and modern style blend in the cabin. The company conducted extensive research into new cabin technology and styling techniques that will greatly enhance passengers' sense of spaciousness and comfort.

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"The Falcon 5X represents our biggest investment since the beginning of the Falcon programmes."
ERIC TRAPPIER

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The new aircraft's digital flight control system represents a major advance in making aircraft control more precise, easier and safer. The system integrates all moving control surfaces for the first time, including an additional control surface called a 'flaperon', that allows steep approaches at slow and safe speeds.

It also integrates nose wheel steering for safer runway handling in strong crosswind conditions and on wet or slick runways.

Dassault Aviation is a leader in digital flight control technology, having pioneered it on fighters four decades ago and having introduced the first business jet with digital flight controls – the Falcon 7X – in 2007.

Honeywell will provide the 5X with a new generation of the Falcon series' EASy all-digital cockpit, as well as its most advanced radar, capable of detecting turbulence at greater distances than current models.

Most advanced

The cockpit will feature the industry's most advanced head-up display (HUD) technology, provided by Elbit Systems.

The new HUD will combine 'enhanced vision' and 'synthetic vision' for unsurpassed situational awareness, even in total darkness, fog or dense haze.

Enhanced vision uses infrared sensors to display terrain in darkness and reduced visibility. Synthetic vision uses a global terrain database for the same purpose. In the 5X, they will be combined for the first time on the HUD, providing a high fidelity view of the outside world even when actual visibility is zero.

The aircraft will be powered by new-generation Silvercrest engines from Safran Snecma, which are 15% more fuel efficient than other engines in the power class. "Emissions are dramatically lower than current standards and the engine is remarkably quiet," said Trappier.

To be priced at about \$45 million in 2013 dollars, the Falcon 5X is expected to make its first flight in the first quarter of 2015 and to achieve certification before the end of 2016.

Eclipse unveils sub-\$3m production jet

Eclipse Aerospace unveiled the first new production Eclipse 550 twin-engine jet at NBAA.

The new aircraft is now the only sub-three million dollar jet aircraft in active production worldwide.

"As the Eclipse 550 Jet makes its first public appearance today, we are so excited and thankful for all of the industry support by our customers, our suppliers, our staff and the aviation community," said Mason Holland, Eclipse Aerospace CEO.

The Eclipse 550 Jet includes standard equipment enhancing safe single pilot jet operations, such as a dual and redundant channel flight management system, anti-skid brakes, and a full situation independent standby display.

Options like synthetic vision and enhanced vision provide an unprecedented level of situational awareness for the pilot, while auto throttles (an industry first in the light jet market) help to further reduce pilot workload.

Two Pratt & Whitney Canada P610F jet engines power the Eclipse 550, giving it the ability to fly to altitudes of up to 41,000 feet at a max cruise of 430mph, all while consuming just 59 gallons of fuel per hour, making the Eclipse 550 the most fuel-efficient twin-engine jet in production today.

The Eclipse 550 is designed to be flown by a single pilot, can be equipped with six forward-facing seats, and includes a three-year 'tip-to-tail' warranty.



Mohammed Al Zeer: "Winning this contract against tough international competition shows that GDC is truly a world leader in head-of-state and VIP aircraft completions."

Dreamliner deals complete double for MAZ

The American completions centre company owned by MAZ Aviation of Saudi Arabia announced a major win. Gore Design Completions has won two Boeing 787 completions contracts for head-of-state aircraft.

Chairman of MAZ group Mohammed Al Zeer said: "We are very excited about this new contract. The Dreamliner is the most sophisticated and technologically advanced aircraft in service today. Winning this contract against tough international competition shows that GDC is truly a world leader in head-of-state and VIP aircraft completions."

MAZ has been supplying design services for Saudi clients and bought the San Antonio, Texas-based modification centre through its investment arm earlier this year. Gore is one of the few North American completions centres that will have the capability to perform completions on the BBJ787.

Al Zeer said that GDC plans to deliver four aircraft this year – three Airbus A340s and one Boeing BBJ3.



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Still-to-fly Learjet 85 gets late summer target

Bombardier's Learjet 85 will enter service around the third quarter of next year, despite having not yet made its maiden flight.

"We are on track to fly before the end of the year and deliver next year," Steve Ridolfi, president of Bombardier's business aircraft division, said.

The company rolled out the first aircraft from its Wichita factory as a handover from the production team to the flight test team.

Ridolfi said the company has fixed unspecified problems associated with manufacturing the aircraft's all-composite airframe, made at its facility in Querétaro, Mexico, where the 1,830 metre (6,000ft) altitude requires Bombardier to use special curing techniques.

The \$21 million aircraft was launched in 2007 and is a midsize, eight-passenger jet that will have a range of roughly 3,000nm (5,556km).



Erin Lear: "I would love to see the products on aircraft from the Middle East."

Lear's skin product joins the jet set

No matter how nice the aircraft, flying at high altitudes can damage your skin. One delegate to NBAA with a whole legacy of aviation in her blood has a way to change that.

Erin Lear is the granddaughter of Bill Lear, the inventor of the car radio – and more importantly the creator of the first real business jet. Bill Lear's Learjet 20 was synonymous with the "Jet Set" elite. At NBAA Erin was there to carry on the family tradition with the launch of a range of skincare products.

Aimed at the FBO market, Lear Organics uses a state-of-the-art formula with all-organic ingredients to help rehydrate the skin.

"This is perfect for high altitude flying," Lear said. "When we fly we get dehydrated and oxygen depletes from our skin. The ionised water in the products makes such a great difference."

Although this was launched at the American event Erin Lear believes that the product could be as international as her grandfather's jets.

"Looking after your skin is essential," she said. "I would love to see the products on aircraft from the Middle East."

Service 'more important than price' says survey

Dubai-headquartered flight support company UAS released details of a business aviation research project that showed when evaluating international trip support providers, high-quality service is more important than acceptable quality service at a low price.

What surprised analysts at NBAA, was that the difference was by a factor of more than two to one – 70% - 30%.

UAS surveyed more than 250 people in business aviation, including charter companies, corporate flight departments, general aviation operators and other companies around the world.

Further reinforcing the service-first message, respondents ranked speedy/efficient service as the top attribute of an international support provider (ISP), with company reputation (word of mouth) being the most important factor influencing their decision when choosing between ISPs.

While respondents overall indicated that excellent trip support service outweighs competitive pricing by a big margin, financial decision-makers who took the survey said they are more inclined to have an eye on the bottom line.

Responsiveness and professionalism

"Companies that are booking business aviation flights care more about responsiveness and professionalism in service than 'extras' like a loyalty programme," said Jay Husary, UAS senior director of operations & sales.

"Also, customers appreciate companies like UAS that oversee the full range of services – such as ground handling, fuel provision, landing permits and catering – ease the process and allow them to cover multiple needs through one point of contact," he added.



Enter the dragon...

NBAA always gets its fair share of celebrity focus and this year Karate Kid Jackie Chan was in town to order a Legacy 500 midsize jet.

The aircraft – the first to be set for China – features a signature gold and red 'dragon' livery.

Chan will receive the aircraft in 2015 to complement his large Legacy 650 – an order first announced the last time NBAA convened in Vegas in 2011.

The star has chosen the aircraft in part because of its performance on mid-range routes up to 3,000nm (5,550km), which will be tailored to missions for his charity work.

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**Lightweight Lineage to
boost range by 200nm**

Embraer is launching a new version of its Lineage aircraft, which has already seen the Middle East as its largest market.

The new Lineage 1000E will increase range by 200nm, allowing it to manage the Shannon-Teterboro (New York) or New York routing across the Atlantic non-stop. Until now flight planners have described the sector as “marginal”.

The 4,600nm range is based on eight passengers flying at Mach 0.78.

To increase the range of the Lineage 1000E, Embraer has shed more than 200kg from the aircraft's basic weight via structural changes, such as tailoring the fuselage supports to the VIP airframe and optimising the design of the aircraft's wire harness.

The new-look fuselage plugs 12 to 13 ‘mirage’ windows that were previously cut out of the fuselage, giving the aircraft an exterior appearance that now clearly marks it as a private jet, rather than the regional jet from which it evolved.

Meanwhile, at NBAA, Embraer unveiled a mock-up of its nine-

passenger Legacy 450, as well as confirming upgrades, including an increase in range from 2,300nm to 2,500nm with four passengers and two pilots, allowing the aircraft to travel between Teterboro and Los Angeles and between New Delhi and Beijing.

The aircraft is due to enter service in 2015.

The Legacy 450 increased range will put it head-to-head with Cessna's Citation Latitude jet, which is currently under development.

Both the 450 and the Lineage 1000 have been undergoing changes to the cabin interiors as well as in the cockpit.

Technology firm Rockwell Collins announced that the Legacy 450 and 500 would be fitted with the company's new enhanced vision system (EVS), the EVS-3000. Rockwell Collins said that the EVS system will enter service in 2015 and will be capable of seeing the full spectrum of airport LED lights and will eventually overlay synthetic vision on top of the EVS view.

Aerion announces wing tests boost

The new wing proposed for the Aerion business jets will improve efficiency and fuel improvements at transonic and supersonic speeds, according to flight tests carried out by the American design team.

At NBAA, chief technology officer Richard Tracy confirmed that results proved that a supersonic wing could maintain laminar flow over the majority of its surface.

Keeping laminar flow over a wing has been seen as critical for fuel efficiency. Small imperfections, such as an out-of-tolerance step in a leading edge joint, can trip the flow into turbulent air, which will increase drag.

There have been a number of expressions of interest in the supersonic business jet from Middle Eastern customers. The design has changed significantly since the initial launch and Aerion has gone back to the drawing board on the size and range of the aircraft.

New life for an old Otter

As tourism increases in the Middle East, the demand for sightseeing flights continues to rise and one American company believes a retrofit of the DHC Twin Otter aircraft could be the answer.

At NBAA in Las Vegas, Ikhana handed over a DHC-6-300 Vistaliner Twin Otter aircraft modified with re-life fuselage, re-life wing boxes and re-life flight controls supplemental type certificates (STC) to Grand Canyon Airlines of Boulder City.

“Our RWMI DHC-6 re-life fuselage STC returns full capital value back to a Twin Otter that would otherwise be salvage value,” said Ikhana CEO, John Zublin.

“This is exactly what the product was intended to do – provide a path



to turning an aging fleet back into an essentially new aircraft.”

The aircraft is being used for flights into the Grand Canyon, one of the US’s main tourist attractions.

The original DHC-6-100, -200, and -300 series Twin Otters, produced from 1965 to 1988, have

a fuselage fatigue life limit of 66,000 hours/132,000 cycles.

The RWMI DHC-6 re-life fuselage STC, allowing new 66,000 hours/132,000 cycles of fatigue life, was awarded by the FAA in November of 2011 and is applicable to all of the DHC-6 legacy series Twin Otter aircraft.

King Air family to get the Nextant treatment

Nextant Aerospace is partnering with GE Aviation to launch a comprehensive upgrade programme for the Beechcraft King Air family, starting with the C90 version. The project sets out to duplicate the success of Nextant’s remaking of the Hawker 400 light jet, but on a vastly larger scale.

The King Air C90 upgrade programme will replace the Pratt & Whitney Canada PT-6 turboprop engine with the GE Aviation H80, which is a modernised version of the Walter M601.

Other upgrades will add a Garmin G1000 flight deck, including a digital stand-by display, a new interior and a refresh of all life-limited components.

Jay Heublein, Nextant’s executive vice-president of global sales and marketing, said at NBAA that there are about 1,500 King Air C90s in service today, but the company expects the greatest interest to come from operators who use the C90 for surveillance and similar roles.

“We see a lot of opportunity in special missions,” Heublein said.



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CONNECTING THE DOTS

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Upstart Morocco is on the rise as an emerging player in the private aviation sector and the inaugural MEBAC show in Marrakech showed just how important it is.

Liz Moscrop reports.

Morocco's key role in MENA growth... as time goes by

Humphrey Bogart and Ingrid Bergman immortalised the Kingdom of Morocco in the film *Casablanca* in one of the most famous aviation scenes in Hollywood history. Three quarters of a century on, and the country is one of Africa's hotspots for aviation development, which is why the Middle East Business Aviation Association (MEBAA), opted to host its inaugural MEBAC conference in Marrakech this October.

In what it describes as "a bid to unite the Middle East and North African region's business aviation industry around its common challenges and trends", MEBAA united with HE Abdullah Bouhouche – director general, Directorate General of Civil Aviation in Morocco – to create the event.

MEBAA founding chairman, Ali Al Naqbi, opened the event with a reminder that the association is an active member of the International Business Aviation Council (IBAC) and aims to be a link between members and government entities in discussing the challenges and obstacles facing private and business aviation in the MENA region.

The association also aims to increase the private aviation market share in MENA, and offers strong purchasing power for its members through applying collective buying methods, which contribute to reducing costs.



Ali Al Naqbi, founding chairman of MEBAA – North African market is growing.

In particular, Al Naqbi pointed to the recent MEBAA aviation insurance scheme (MAIS) initiative, a unique product that lowers costs for its members to achieve competitive premiums and broader coverage. He said: "The strong message here is to raise awareness of the important role of private and business aviation in supporting the global economy. We will do this by conducting exhibitions and offering training forums and open discussion panels with elite decision-makers in the private and business aviation sector, both in the local market and all over the world."

He called on the audience in Marrakech to "help us to have an action plan to follow up and solve the challenges that hinder process". Indeed, he added that the market in Morocco had grown 12% since last year, which could rise to up to 15% at the end of this year.

Nabil Lakhel, director of air transport, for Morocco's Directorate General of Civil Aviation (DGAC) said: "Civil aviation plays a crucial role in the development of countries. It is swift, efficient and safe. Here it is also based on international standards – institutional, technical and legal. We have opened horizons with the EU and last year transported 15 million passengers. Such extended growth led Morocco to start to develop infrastructure and services."

He added that air charter services were the

"lever to sustainable development", saying that the conference aimed to explore new opportunities for business aviation in the country by implementing a network of business operators and developing opportunities in the Moroccan market.

He said: "Morocco is an important player. The air taxi market is crucial and showing great benefits."

Although the installed fleet is small by the standards of more matured markets – comprising 14 jets and 12 operators, the fleet flew more than 2,000 hours last year, creating a turnover of 147 million dirhams, which was a growth of 37% compared to 2011.

He concluded that Morocco needed to "keep up with the development of international standards to attract more international companies to the country".

Some of the OEMS are there already. Bombardier recently set up shop. There are 24 airports in Morocco, 15 international and nine domestic. There are also many MRO facilities in surrounding area, which are capable of maintaining business aviation aircraft, as well as airliners.

Al Naqbi pointed out that one of the first ever recorded flights took place nearby, and that business

**Continued
on Page 76**



Josh Stewart (left) of XJET with Sheikh Ahmed bin Said Al Maktoum, the head of Dubai Civil Aviation after signing the deal for the FBO at Dubai World Central. Stewart spoke at MEBAC about the changing responsibilities of FBOs.

CONTINUED FROM PAGE 75

aviation in the MENA region only started in the 70s and caught up with the best in the world over the last 30 years. Today Dubai is the world's second busiest airport. The UAE is also home to Emirates, the third largest airline, and the region is home to the three fastest growing airlines – Qatar, Emirates and Etihad. Both Emirates and Qatar use VIP aircraft.

The Gulf is also the world's biggest operator of BBJ and ACJ types. He said: "Around 70% of wide-bodies in completions centres are from this region. There are 500 business aircraft registered in the area and 1,000 operating in the region. This fleet is expected to grow to 1,307 in 2020."

He highlighted the stable rules and regulations for all types of operations saying: "There is a very easy and transparent flight approval system here. Investment transparency is very clear. As a foreign operator you can come to Dubai and set up without any local partners."

He added: "Business aviation is bound to grow in this region. Populations are growing. There is an increase in high-net-worth individuals and activities such as horseracing, government operations and medevac all continue to grow. As well as oil, the banks and insurance businesses are generating wealth in the area. Lots of banks and insurance companies are starting to fund aircraft."

Richard Koe, managing director of market data provider WINGX, offered statistics of actual movements and aircraft in north Africa and the Indian Ocean, including: Morocco, Egypt,

Tunisia, Algeria, Libya, Mauritania, Sudan, Djibouti, Comoros, Mayotte and Madagascar.

He said that growth had been strong in the region until 2009, but had fallen back with the onset and aftermath of the Arab Spring uprisings. There were 15,759 movements across MENA in 2012, which was a 25% fall in activity since 2011. However, the region in total had fallen just 3% last year, which was a shallower drop than in Europe, which reduced by 5%.

Koe was bullish, however, and said: "North Africa IMF data indicates a 3 to 5% growth in this region. Morocco is a big market connection between these countries and the rest of world. North Africa is not just a gateway to Europe, but also to other regions."

Biggest growth destination

He explained that the main destination was France but the biggest growth destination was Russia, at 81% this year. Turkey and Belgium were also notable. In Morocco, Rabat and Casablanca generated the most activity.

Most trips are short-haul and most regional operators are small, with only two to three aircraft. Indeed, Egypt has lost an operator since 2000, and now is home to ten operators with 39 aircraft between them.

This is a marked contrast with the more mature Middle Eastern and European markets. Indeed, Middle Eastern and European operators are conducting most charter trips.

Royal Jet and Comlux both doubled their fleets between 2009-2010, then stagnated for the last few years.

The average age of aircraft is 15 in North Africa, one year older than in the UK. Most aircraft are Hawker and Cessna types, but Bombardier is growing, and more than 30% of recent activity is in the heavy large cabin sector.

The light jet slice is shrinking, with the average trip profile of 1.5 to 3 hours.

Koe ended on a positive note saying that the 2013-22 forecast was for "at least 4.5% growth per year with 60 aircraft deliveries".

Not everyone was pleased with the conference. Kadri Muhiddin, CEO of AMAC Aerospace, said he'd hoped that there would have been more opportunity to discuss development of business aviation in Morocco in particular.

He said: "We would be happy to invest in the country but need to see better infrastructure development. We appreciate that MEBA consists of volunteers, and others who want to invest in Morocco, and would be happy to volunteer our services on a working group looking at how to help develop the business aviation sector here."

However, the general feeling from delegates was that the conference was a success.

Al Naqbi concluded: "We realise there is a big gap in infrastructure and regulations, and associations like ours are playing their part in bridging the gap."

The sense in the room was that people wanted to be part of the new growth taking off in MENA.

As Bogart said in the film: "If that plane leaves the ground and you're not with it, you'll regret it. Maybe not today. Maybe not tomorrow, but soon and for the rest of your life."

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FOR THE JOURNEY

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Fixed Base Operations and issues over ground handling were high on the MEBAC agenda,
writes **Liz Moscrop**.

Getting a handle on ground services

As Dubai World Central prepares to open its first purpose-built FBO – a joint venture between Germany’s DC Aviation and the UAE’s Al-Futtaim (DCAF) – facilities and ground handling were high on the agenda in Morocco.

DWC’s hub includes a 5,700sqm state-of-the-art hangar and a 1,300sqm plush lounge area, designed to host VVIP customers.

DCAF, meanwhile, will be providing aircraft management, FBO, aircraft maintenance services and business jet chartering to local, regional and international clients.

It is a far cry from the initial concept of FBOs, which were started by oil companies to cater for crew and passengers buying fuel. However, the very nature of such services means there are different offerings worldwide. As one delegate said: “FBO’s strengths are in privacy, confidentiality and offering fast track through airports.”

The big issue under discussion was the varying standards of handling and other services offered.

A panel comprising Khalid Hadachi, of VIPJET Morocco; Ghassan Hamdan, Saudi NasJet’s CEO; and Josh Stewart, president of XJet World; debated the topic, while Nabil Lakhel, director of air transport, for Morocco’s Directorate General of Civil Aviation (DGAC) and Louis Sorrentino III, MD of safety security and operations for the ICF SH&E consulting group, added their thoughts on how to regulate and populate the working environment.

Serious shortage

According to Hamdan, there is a serious shortage of trained pilots because of the mind-set of training on commercial airlines. He said: “Pilots on commercial airlines sit like a king in a palace. Their mind-sets are different to pilots in business aviation. We train our captains to stand at the door of the aircraft waiting for a VIP to board, with a smile showing him we have a confident captain to fly him to his destination safely.”

He added that it is expensive to train crew for business aviation needs. He continued: “On an airline there are 100 passengers and the ground handlers can take care of them, as can the cabin crew. We do face a problem when so many of our pilots are expats, which costs us a lot of money.”

The panel also pointed to slot-constrained airports all over the world, where business aviation gets ‘squeezed out.’

Stewart said: “Dubai is a great example. Al Batten is like some of the dedicated private aviation airports, which are critical in the US.”

In terms of handling, the lack of clear guidelines worldwide is an issue. Lakhel admitted that Morocco implemented regulation 544 for airlines starting up, but it does not differentiate between commercial carriers and GA operators.

Sorrentino added that regulatory authorities all over the world are trying to structure special rules for the market.

Swissport Maroc CEO Gion-Pieder Pfister, Khaled Shurbaji, operations manager for Jetex Flight Support, and Mohamed Hanno, chairman of the ASE Group, called for handling training to match that of sales, flight despatch, and cargo.

Hanno argued that there needed to be a checklist provided to FBOs by a neutral party, although regulatory authorities should construct the rules. He said: “FBOs need to provide on-the-job and recurrent training. This self-initiative on the part of the FBO itself to collect information and assess internally would offer a better service. You cannot compare FBOs. It is like comparing a three star hotel and a five star hotel.”

Grey market

There was also a suggestion that FBOs should have “a considerable role in identifying the grey market, and reporting irregularities”. Pfister said: “It is a criminal act to operate an illegal flight and although it is not an FBO obligation, it is incumbent on whoever realises what is happening. It is anyone’s responsibility to flag things up when it comes to non-standard operations.”

Shurbaji pointed out that it was easy for FBOs to make mistakes, as only a customs officer could determine the truth. He said that passengers could tell lies to FBOs when asked: “Is this a chartered flight or not?”

Sorrentino proposed FBOs flagging up inconsistencies on aircraft documents. He said: “As yet there is no mechanism to alert authorities of these inconsistencies. We need to educate both internally in our FBOs and within the industry to look out for folks that might charter a private aircraft. They need to know that they are taking a tremendous chance.”

Stewart added: “People rely on showing up at the FBO and the crew are nice and well dressed, but they do not know what standards the aircraft is operating to. There is a pilot shortage in the sector and we need to look at how we are training them.”

The panel also tackled the thorny issue of what makes an FBO accountable for damage that is not due to wilful negligence.

Operators are exposed to large losses in the event of an incident so was there a need to review the insurance aspect of FBO operations to get more suitable coverage for operators for wing dings?

Pfister said: “From the handler’s point of view, obviously not. We would have to know where does it stop and where are the limits? If we have lots of aircraft losses and damage, it increases our own insurance.”

Jetex, meanwhile, puts all insurance liabilities on third parties at its FBOs, including fuellers.

“FBOs need to provide on-the-job and recurrent training.”

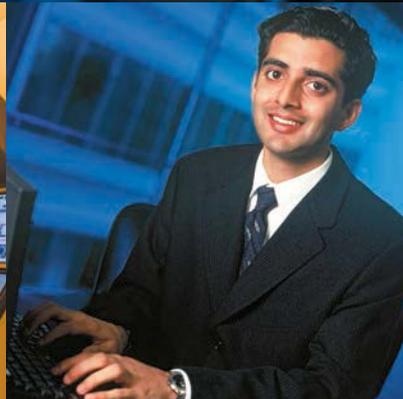
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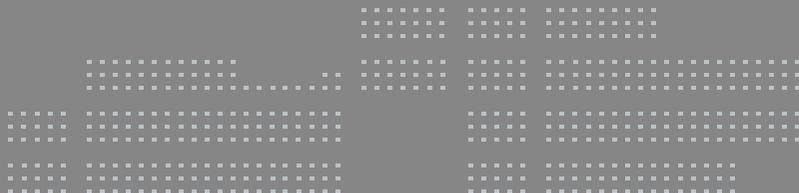




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Art of Success



VIP variant boost for Russian Helicopters

One of the first production Mi-171 helicopters is put through its paces ahead of the certification of the new VIP variant.

A new top-end helicopter targeted at the business and corporate executive travel market has just been launched by Russian Helicopters.

Alan Peaford takes a look at the new entry.

Russian aircraft have traditionally had a utilitarian look. Avionics have been variants of military aircraft and interiors have been designed for government users. But as Russia's private wealth has developed, so has the need for a corporate helicopter that meets the demand of the country's high net-worth individuals.

Russian Helicopters (RH) – the subsidiary of UIC Oboronprom, part of State Corporation Rostec – was created in 2007 to act as an umbrella organisation for Russia's five helicopter production facilities, two design bureaus, and a spare parts production and repair facility.

With this capability, RH was able to take on the challenge and look at converting tried and tested platforms into a corporate helicopter that could push the European and American manufacturers, which currently dominate this sector of the business aircraft market.

The result is the corporate and VIP edition of Russia's Mi-171 helicopter. The announcement confirming Russian

certification of the type was given at the MAKS show in Moscow in September, where the certificate was handed over to Russian Helicopters representatives.

The VIP version of the Mi-171 is produced at the Ulan-Ude aviation plant, one of the RH manufacturers. The luxury interior is made by RH partner company, AeroTaxi-Service, which specialises in creating and servicing VIP-class passenger interiors for Russian-built helicopters. The Mi-171 is fitted with additional aviation equipment and systems that meet the latest requirements for reliability to ensure safety of operation and maintenance. The luxury interior has additional thermal and sound isolation and is made of advanced materials, including Euro-composites cellular panels.

Luxury cabin

The central section of the fuselage is divided into three compartments – front and rear airlocks and a central passenger salon that can hold up to eight passenger and one cabin crew. The luxury cabin has absolutely everything to ensure passengers are comfortable, even on long flights. Compared with the standard Mi-171, the version with a luxury cabin has improved avionics. For example, instead of a UHF radio, the helicopter is equipped with a Prima-VHF radio set. In addition it has radio equipment for providing in-flight updates and entertainment to passengers, a Pulsar radio station and universal communication unit. The additional certification for the Mi-171 means the VIP version of the helicopter can enter the corporate transportation market.

Based on the world-renowned Mi-8/17 series, the Mi-171 has all of the qualities of its famous predecessors, including reliability, a high level of safety, ease of use and suitability for outside storage in all conditions.



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FIRST ADA

Why the 'red and white' company is in the pink

In the offshore oilfields of the Arabian Gulf, the helicopters of Abu Dhabi Aviation are the aerial equivalent of a regular bus service. Alan Dron reports.

For workers on board oil and gas platforms off the coast of Abu Dhabi and further afield, the red and white helicopters of Abu Dhabi Aviation (ADA) are such a normal part of daily life that the clatter of rotor blades announcing their arrival barely merits an upward glance.

They shuttle back and forward between offshore platforms and the coast, rotating oil company personnel and bringing essential supplies that help ensure that the hydrocarbons that are the engine of Abu Dhabi's economy keep flowing.

The intensity of offshore oil support work is high. In an average month, 15,000 passengers and 162,000kg of freight are shuttled to and from offshore fields. Adding to those figures are another 11,000 passengers, who use the helicopters almost like buses to move between different offshore installations.

All this activity results in an annual average of roughly 200,000 landings and take-offs – around 550 every day. Little wonder that this tempo of operations has seen ADA clock up a million flight hours since its creation.

ADA has provided these services since beginning operations in 1976. Starting from just two aircraft, it has become the largest commercial

helicopter operator in the Middle East, with its stylised falcon logo familiar throughout the Gulf. Its current rotary-wing fleet consists of 15 AgustaWestland AW139s, together with 24 Bell 412s and 19 212s. Each type carries 13-15 passengers.

Apart from its own aircraft, ADA also manages around 50 aircraft for third parties.

The company now employs over 900 personnel, including more than 150 pilots and 150 aircraft maintenance engineers.

Apart from carrying oil industry personnel and supplies, ADA is also involved in trying to find the reserves that will keep the industry going into future decades. Seismic surveys in search of oil and other natural resources are undertaken using specialist under-slung load techniques that make use of 'long lines' up to 50 metres in length, which enable the helicopter to remain well clear of obstructions.

While the bulk of the company's business activity remains the support of Abu Dhabi's offshore oil, engineering and construction industries, its portfolio has widened considerably over the years.

Among its missions are medical evacuation, aerial surveying, photography and charter.

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Additionally, all aerial spraying of crops in the UAE – together with most of the crop-spraying in Oman – is carried out by ADA.

The company also undertakes search and rescue (SAR) services on behalf of the UAE armed forces, with seven AW139s stationed at Minhad, Al Bateen, Safran and Al Ain on 24-hour standby for rapid response.

Unlike the helicopters on regular oil industry duty, each of the SAR-equipped machines has a crew of four: two pilots, a winch operator, and a rescue crewman/paramedic.

As well as their primary task of providing SAR for peacetime military operations, the helicopters are tasked to provide assistance to the wider civil community in co-ordination with civilian helicopter operators. As part of this function they operate inter-hospital patient transfers.

On the humanitarian front, ADA is also contracted by the Saudi Red Crescent Authority to provide six helicopters for emergency medical services for the Jeddah and Mecca areas throughout the year, including Ramadan and the haj. With millions of pilgrims thronging the area around Mecca, inevitably a certain proportion fall ill and, in serious cases, must be airlifted rapidly to the nearest hospital.

Back in Abu Dhabi, ADA also provides a 24-hour medevac service for all local Abu Dhabi-based oil companies, from both offshore and desert locations.

However, perhaps the most notable change in the company's activities has been the extent to which they have spread, not only throughout the Gulf but beyond – ADA aircraft have operated as far afield as Brazil, Afghanistan and Papua New Guinea.

One activity that takes some of the fleet far afield is fire-fighting. For the past 15 years between four and six 212s and 412s have been

deployed to Spain to help tackle wildfires over the April to September danger period. The helicopters have a ventral tank fitted, which is filled by a 'snorkel' tube below the aircraft that is dipped into a body of water, such as a lake, to replenish the tank.

With the Bells having a cruising speed of just 120kts and even the faster AW139 only making around 165kts, reaching the more distant destinations where ADA has contracts would take days, if not weeks.

To avoid spending long periods in transit, ADA uses one of its subsidiaries, specialist freight carrier Maximus Air Cargo, to transport its helicopters. The cargo airline, which is 95% owned by ADA, operates two Ilyushin Il-76TD and a single Antonov An-124, which are well able to cope with the weight of the helicopters.

Multi-tyre undercarriages

An additional benefit of the An-124s and Il-76s is that they have rugged, multi-tyre undercarriages that enable the aircraft to get in and out of less-than-pristine airfields close to where the helicopters are due to be deployed.

At the other end of the transport spectrum from heavy freight, ADA is a 50% shareholder in VVIP executive jet operator Royal Jet, the world's largest commercial operator of the Boeing Business Jet, with six of the Boeing 737 derivatives on the fleet. Abu Dhabi-based Royal Jet also operates a fleet of Gulfstream 300 and Lear Jet 60 executive jets.

As well as its helicopter fleet, ADA has six Bombardier Dash 8 turboprops in its inventory. Three are owned by ADA itself (two 37-seat Dash 8 Q200s and one 50-seat Q300) and are used primarily for flights from the mainland to Abu Dhabi's offshore islands, carrying oil industry personnel.

The remaining three are owned by the UAE

Government and are operated by ADA to transport government officials when required.

On the ground, ADA is also an FAA-authorised maintenance centre, capable of handling not only its own maintenance but as a third-party MRO provider at its Abu Dhabi International Airport base.

It caters for general aviation and small rotary-wing types, as well as larger jets, and its clients include several of the region's major petroleum companies, which send their aircraft for heavy maintenance or modification.

MRO is one area where ADA expects to see its business expand; fire-fighting, seismic exploration and more oil production support are also tipped for growth. Contract negotiations are also well under way for expansion into South America and the Far East, although the company has not released details of the nature of the planned work.

With this portfolio of capabilities, ADA is a profitable enterprise. Figures for the first half of 2013 showed the company booked a net profit of AED 94.4 million. This was, however, substantially down on the AED 146.7 million profit for the same period in 2012.

The sharp drop was largely due to losses at Maximus, which has been undercut by mainline airlines in the Gulf, with their ever-increasing belly hold freight capacity. As a result, it has put its fleet of five A300-600RF freighters into storage and plans to sell or lease them out if the market does not improve. It has also decided to leave the aircraft, crew, maintenance and insurance (ACMI) sector and concentrate on the oversized cargo market, which it says continues to provide good business.

With action having been taken at Maximus to stem the losses and ADA's policy of diversification, particularly in overseas markets, its red and white helicopters should continue to successfully ply the skies for some time to come.

Dash 8: ADA also operates Bombardier Dash 8s, used mainly for transporting oil industry personnel to Abu Dhabi's offshore islands.



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LOUNGE DELUXE

A new model Audi A8 car is just one of the luxury perks customers to Cedar Jet Center (CJC) in Beirut can experience following its FBO upgrade in August.

Marcella Nethersole reports.

Cedar Jet Center is now one of the Lebanon's top FBOs and provides the business and general aviation industry with a wide range of services.

Part of Middle East Airlines Ground Handling (MEAG), the company's new expanded facility at the general aviation terminal at Beirut Rafic Hariri International Airport includes a state-of-the-art crew lounge, snooze room, and new offices.

"Cedar Jet Center now has the largest and most luxuriously furnished VIP lounge, which is fully equipped with a business centre," said operations manager Randa Kammoun El Hurr.

"The designs are based on better meeting the evolving needs of today's luxury traveller, while at the same time introducing a unique local flavour in each location. We also have an 1,800sqm hangar as well as an onsite customs and immigration processing centre."

The company has come along way since Middle East Airlines, the country's national carrier, was encouraged by the ministry of transport to invest in a Beirut FBO in 2005. "With the opening of the general aviation terminal in June 2005, Cedar Jet Center was inaugurated and has taken a leading position in

Beirut's newest FBO offers every comfort to business aviation customers.



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an extremely important segment of the private jet business. It is now Beirut's leading FBO," said Kammoun El Hurr.

"We have quickly built a reputation for combining customer loyalty with prompt and proficient responses, practising our belief in a continuous and lasting professional relationship. As a result, our business has experienced double-digit growth over the last four years since opening."

Complete line service

The 24/7 company facilities include all FBO services from cabin and aircraft cleaning to complete line service, as well as passenger and crew transportation, corporate rate hotel accommodation, VIP catering, flight planning, and aircraft chart service.

The FBO can handle all aircraft up to B747, as well as maintenance services for Airbus A319CJ, Boeing BBJ aircraft, Cessna CE-510 Mustang and Hawker H800/850/900XP.

"We have a team of 35 staff and CJC has the advantage of all MEAG human resources and infrastructure back-up. We're a one-stop shop for customers to Beirut offering everything from landing to taking care of the aircraft and



departing. We also have the added beauty of being located just 15 minutes from downtown," said Kammoun El Hurr.

The company handles major commercial operators, including Royal flights from Saudi Arabia, Qatar, the UAE, Bahrain, Kuwait, as well as private operators.

Kammoun El Hurr added: "We also have clients from all over Europe, the USA and Canada."

Rafic Hariri International Airport has in its expansion plan a new passenger terminal and Kammoun El Hurr said the airport is the best place for CJC.

"In a vivid city like Beirut, that has a unique spirit, it has always attracted investors. During the

general aviation terminal early opening, the market was over saturated with six FBOs – that has now been whittled down to three, including Cedar Jet Center.

"With our relationship with Middle East Airlines, too, we're in the best place and are able to offer the best facilities available to customers coming into Lebanon."

He added that while there are no plans to expand within the country, expanding out of Lebanon is not ruled out. "Beirut Rafic Hariri International Airport is currently the only civil airport in Lebanon; hence in Lebanon the chance to expand is little. But, international expansion is one of MEAG objectives, as long as we have the right proposal/tender."



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IF WE ask the right questions
we can change the world.

Inmarsat's I-5 F1 satellite, the first to deliver the company's ultra-fast Global Xpress (GX) Ka-band service, is on track to be launched before the end of the year. Steve Nichols visited Boeing's facility in El Segundo, Los Angeles, to find out more.

High fives all round as GX I-5 giant nears completion

The giant seven-metre tall, six-tonne I-5 F1 satellite, which will serve the EMEA region, is currently undergoing final testing and will leave Boeing's El Segundo facility in early November.

It has passed all of its thermal and vibration tests and was undergoing final radio frequency testing when I visited in September. It is due to be flown to the launch site at Baikonur, Kazakhstan, aboard an Antonov cargo aircraft.

Once successfully launched (the last Proton launch ended in disaster after the rocket's angular velocity sensors were installed upside down) it will be a further month or so before it reaches orbit using its energy-efficient Boeing Xenon ion propulsion system (XIPS) thrusters.

Lower thrust

These are electrically powered and provide much lower thrust than chemical rockets. They are, however, very energy efficient and mean that the satellite can be heavier.

Once in orbit, the satellite will have to undergo testing before being handed over for live use.

Miranda Mills, president aviation at Inmarsat, said: "GX will be the world's first global super-fast broadband service and it is going to revolutionise mobile connectivity on land, at sea and in the air.

"We have invested \$1.2 billion in GX and this is the first of our three spacecraft – Inmarsat I-5 F1 will serve the Indian Ocean, Europe and the Middle East.

"This launch will be followed by others in 2014, with I-5

F2 serving the Americas and I-5 F3 the Asia Pacific region."

The Ka-band technology, which uses ultra-short one centimetre wavelengths, means that a whole new range of equipment – antennas and terminals – is needed. Honeywell is currently developing the main air transport fuselage-mounted Ka-band antenna, which uses a precision cut aperture from German manufacturer Qest, to channel the ultra-short wavelength radio waves.

The electrically-driven antenna, along with the Ka-band terminal, will be certified and available when the three-satellite GX system is fully launched, implemented and certified.

The critical design review phase for the GX antenna design was completed in late 2013. It will have a similar radome profile as the older design for the 'Connexion by Boeing' Ku-band antenna.

This means that the certification process will be much easier to achieve but the radome itself will use materials that are different to those normally used at Ku-band frequencies. The new radome will have to be transparent to the shorter Ka-band wavelengths being used.

Line-fit authorised

The antenna will be line-fit authorised on Boeing's B737, 747, 777, and 787 platforms and Inmarsat and Honeywell are working hard to achieve similar line-fit approvals with Airbus.

Inmarsat also announced an agreement with California-based Kymeta to design a revolutionary lightweight flat-panel Ka-band antenna suitable for use on business jets. This will use new exotic meta-materials to give high performance in a small form factor.

The Kymeta antenna will electronically steer the antenna beam to Inmarsat's GX satellites without requiring power-consuming phase shifters or mechanically moving parts, drastically reducing the overall cost and power consumption of the equipment.

When complete, the GX Aviation satellite system promises to deliver speeds of around 30-40Mbps to a typical airliner. This is around 70-90 times faster than Inmarsat's current L-band SwiftBroadband system (432kbps). Speeds to business aircraft will be lower due to their smaller antennas.

The GX system will be complemented by the existing SwiftBroadband service over the Inmarsat-4 satellites, which deliver up to 99.9% network availability. Inmarsat is currently working on getting SwiftBroadband fully certified for aviation safety services (air traffic control).

The I-5 satellite being built.

Picture: Boeing



Dubai youngsters develop new rocket fuel

A group of high school students calling themselves Dubai Amateur Rocketry have developed a new type of rocket fuel that they say is much easier and cheaper to manufacture. The youngsters, with an average age of 17, said that while the fuel itself may not be the best out there, their way of making it considerably improves upon traditional methods.

The idea of eutectic composites was originally invented in the 1960s by the Monsanto Research Center in the USA. However it was never used or tested in a rocket engine.

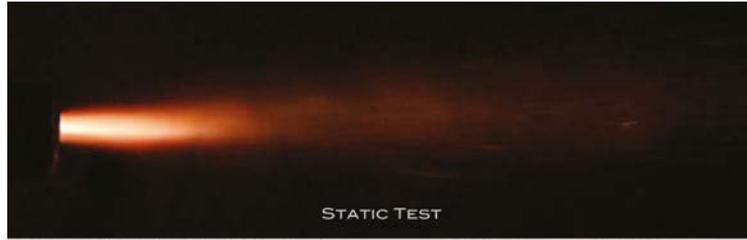
Group member Mahir Tuli said: "By dissolving lithium perchlorate in prepolymers, we found more uses and advantages that were previously unknown.

"We noticed our propellant is denser, more efficient, burns at higher temperatures and is safer. It also has a slower burn rate, a higher specific impulse, and is easier to prepare."

The group does not have a professional laboratory, so they develop the fuel and engines at home. Testing is done outside, often in the desert.

Group member Tianze Cheng said: "We started making these engines because we are interested in many fields of science, and it was a few years ago when we decided to concentrate on and study rocketry-related topics. We have made countless rocket engines with countless types of fuels. However, we have never flown any because Dubai law prohibits it."

The group would be interested to hear from other rocketry groups or experts. A paper outlining how they made the fuel is available. The group can be contacted at DubaiAmateurRocketry@gmail.com or visit their Dubai Amateur Rocketry Facebook page (www.facebook.com/DubaiAmateurRocketry).



STATIC TEST



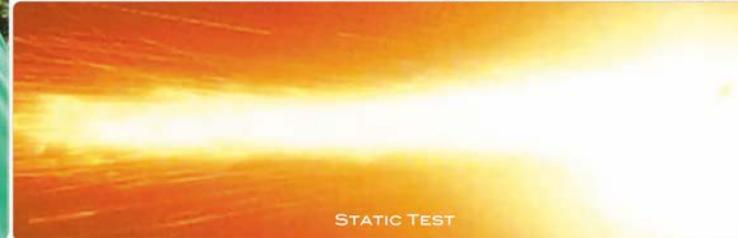
MAHIR TULI



BURN TEST



TIANZE CHENG



STATIC TEST

EIAST invests in the future with engineering scholarships

The Emirates Institution for Advanced Science and Technology (EIAST) in Dubai has awarded two scholarships as part of its efforts to increase the number of Emirati engineers working in the field of satellite manufacturing.

The Entaliq scholarship aims to support talented high school and university students from various engineering disciplines, including computer engineering, electrical engineering and electronic engineering.

University students Marwan Al Sharid and Ahmad Al Nuaimi were the recipients of EIAST's 2013 scholarship, which provides both financial and moral support to the scholars.

HE Yousuf Al Shaibani, director general, EIAST, said: "Investment in the UAE's human capital is part of EIAST's three-pronged strategy for advancing knowledge, infrastructure and manufacturing facilities in order to develop advanced satellite systems through the skills of UAE nationals.

"This is vital to advancing the UAE's march towards excellence and becoming a regional hub and pioneer in global space technology.

"The Entaliq scholarship focuses on promoting scientific and academic

excellence in the field of space sciences and relevant engineering disciplines, which have become the backbone of sustainable development."

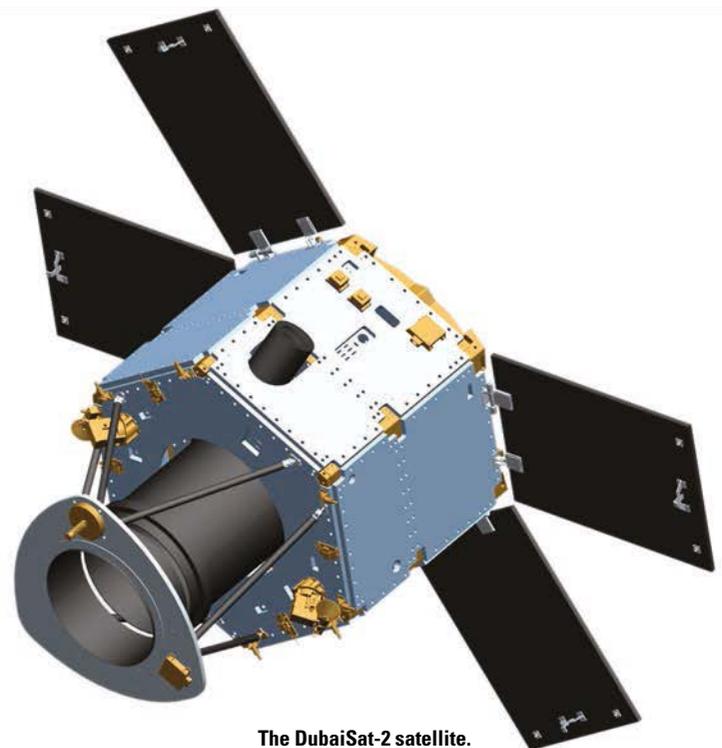
Mona Al Qemzi, EIAST's assistant director general for financial and administrative affairs, added: "We already have a dedicated group of engineers, experts and technicians involved in developing the DubaiSat-3 satellite as part of a new direction towards promoting overall development in light of the directives of our wise leadership."

Al Nuaimi, a second-year mechanical engineering student, said that the Entaliq scholarship paves the way for young UAE nationals to reach the highest levels of scientific and academic excellence.

Al Sharid added: "Winning the scholarship gave me a huge opportunity to improve my skills, not only in my field but personally as well."

He said that the UAE has made great strides towards establishing a strong presence within the global space sciences community.

There are currently 45 UAE experts working on the DubaiSat-3 satellite project, with DubaiSat-2 also due to launch later this year.



The DubaiSat-2 satellite.



Satellite kicks off Qatar's World Cup comms update

Qatar has launched its first television and communications satellite into orbit aboard an Ariane 5 rocket.

The launch of Sohail 1 took place from Arianespace's base in Kourou French Guiana, placing the 6.3tonne satellite into a geostationary transfer orbit, ready for the boost to its ultimate position at 25.5 degrees East.

Sohail 1, which will broadcast more than 30 high-definition and 70 standard channels, will go into service in December, after a three-month experimental phase.

Once in its final orbital slot the satellite, which was built by Space Systems/Loral (SSL), will deliver Ku-band television broadcasting, telecommunications and government services for the Middle East, north Africa and central Asia.

Its higher frequency Ka-band capability will also open up business opportunities in these regions.

Qatar's Es'hailSat carried out this project in

collaboration with its European partner Eutelsat – the Sohail 1 satellite also carrying the alternate name of Eutelsat 25B.

Eutelsat CEO Michel de Rosen said the launch was a success and that the company will offer clients a quality service and strengthen its commitment to its markets.

Ali bin Ahmed al Kauari, CEO of Es'hailSat, said the satellite "will reinforce the services of communications, internet and television transmission, since it will reach very remote areas".

The satellite will remain in service for 15 years and Qatar plans to launch Sohail 2 in around three years' time.

The project is part of a series of Qatari investments in satellites and technology that will help the country have the network needed to broadcast the soccer World Cup it is hosting in 2022.

UAE inks deal for two new military satellites

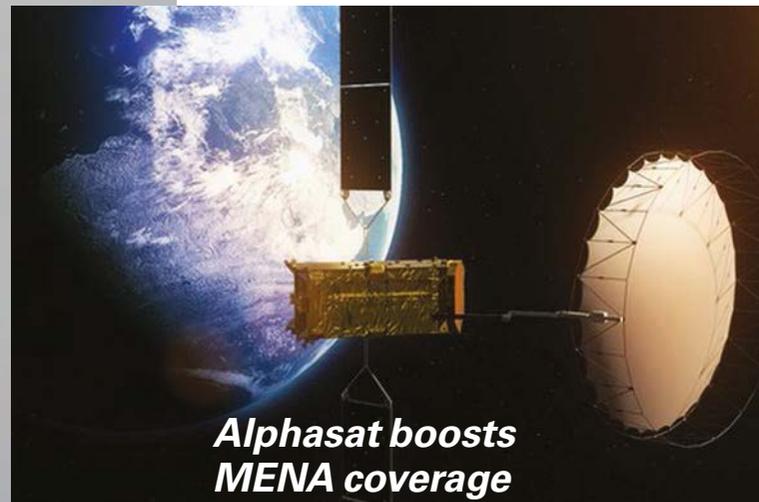
The United Arab Emirates has signed a contract for two new military surveillance satellites in a deal worth around a billion dollars.

The Falcon Eye contract includes the supply and launch of two high-resolution Helios surveillance satellites, a control station and training for 20 UAE engineers.

Astrium, the space division of EADS, and Thales Alenia Space, a joint venture between French Thales and Italian Finmeccanica, will build the satellites.

It is thought that US companies like Lockheed Martin may have been blocked from pitching for the contract due to international traffic in arms regulations (ITAR) issues.

The satellites, weighing less than 1,500kg each, will be placed into orbit on separate launches in late 2017 and early 2018.



Alphasat boosts MENA coverage

The hi-tech Alphasat satellite, launched into orbit in July, will add additional Inmarsat SwiftBroadband (L-band) capacity over the Middle East once testing is complete.

Alphasat is a large telecommunications satellite engineered and built by Astrium through a public-private partnership between ESA and Inmarsat.

The 6.6tonne satellite, with solar wings spanning 40 metres and a design lifetime of 15 years, will extend Inmarsat's global broadband network that supports its 432kbps aeronautical SwiftBroadband service over Europe, Africa and the Middle East.

This was the first application of ESA's new high-power multipurpose Alphasat platform, which serves the large-payload market and meets demand for increased broadcasting services.

Inmarsat CEO Rupert Pearce said: "The Alphasat launch demonstrates Inmarsat's long-term commitment to L-band services and marks a significant milestone in the evolution of our flagship satellite fleet, bringing new capabilities both in terms of performance and resource availability."

Once the payload testing is complete this autumn, Alphasat will be ready to enter commercial service and join Inmarsat's three existing I-4 satellites, which have been powering its global broadband connectivity since 2009.

Other SwiftBroadband enhancements are also due to come online this autumn, including higher data rates and helicopter-compatible waveforms.

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HIGH TECH

The pinnacle of IFE technology at APEX

The 2013 Airline Passenger Experience Expo (APEX), held in Anaheim, California in September, showed what passengers could expect in terms of in-flight entertainment and connectivity in the next few years. Steve Nichols was there.

A number of important announcements were made at APEX that will see more passengers bringing their own electronic devices on board aircraft and satellite connectivity speeds increasing dramatically.

In terms of in-flight entertainment (IFE), Panasonic Avionics launched a new overhead system – the eXO – featuring video, wireless IFE and hybrid cabin class-specific systems.

The single-server system supports cabin-wide entertainment, allowing passengers to use their personal electronic devices to connect with an in-flight portal, interact with other passengers and “enjoy second screen entertainment”, said Panasonic.

Paul Findlay, Panasonic product line manager said: “eXO offers a low-cost, lightweight and fully integrated system that can also work with passengers’ own devices with the wireless streaming option.”

The system is designed to work seamlessly with Panasonic’s wireless network to transform the in-cabin experience into a social environment.

Panasonic said that eXO is being developed in

support of cabin systems for the Airbus A320 and Boeing 737 MAX.

Panasonic’s ‘cool room’ also featured what we can expect to see in a few years’ time, including high-definition audio via a headset, and noise-cancelling earphones that can supply 3D movie sound effects. Other highlights included virtual reality games with a head-mounted display, bringing a new era of gaming to the aircraft.

There were also tablets with ultra-high 4k resolution and 20in organic light-emitting diode (OLED) and curved OLED screens, as well as compression technology using WiMax that can download a one-hour movie in 10 seconds using 30 to 40 megabit-per-second data rates.

Panasonic said many of the technologies are nowhere near coming to market but are intended to be starting points for discussion.

Thales was not to be outdone. Its California-based innovations team had a working demonstration of how gesture-control and eye-tracking could replace the clunky hand-held IFE controller normally expected in seats.

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on Page 96

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With gesture-control you decide what you want to watch by waving your hand around in front of the screen. Cameras detect where your hand is and put a marker on the screen. By moving your hand left or right, up or down, you are then able to select what you want to watch.

To select something, Thales has played with two different ideas. The first is that once you have selected what you want to watch, you just make a pushing motion towards the screen. More recently it has been trialling a “dwell to select” option – holding your hand steady for a few seconds has the same effect.

It also had its eye-tracking system, which uses a camera and an infrared emitter to “see” where you are looking.

You first have to calibrate the system by watching a small aeroplane zooming around the four corners of the screen. Once that’s done you are ready to go. Just move your eyes to look at what you want to watch, dwell on your selection for a few seconds and bingo – you watch the movie.

Brett Bleacher, Thales director of innovations, said gesture-control and eye-tracking are both technologies that could find their way into premium cabins within a few years.

Moving map

Thales was also debuting a new version of its moving map, which it plans to deliver later this year. Together with partner GeoFusion, a 3D Earth visualisation technology specialist, it has adapted the application to work with its TopSeries AVANT system.

Dubbed 3DMaps, the new product uses the system’s android and capacitive touch environment, with full features including multi-touch gestures for zoom, rotate, pan and tilt capability.

Thales also announced a partnership with Seattle-based Survey Analytics to launch a new passenger survey application and reporting tool, planned for release by the end of the year.

Rockwell Collins demonstrated the latest variant of its new scalable programmable audio video entertainment system (PAVES) on-demand system. PAVES offers airlines the choice of a variety of overhead and in-seat monitor combinations throughout the aircraft. The range builds upon the company’s previous PAVES and dPAVES systems, which are installed on more than 2,000 aircraft.

PAVES on-demand can provide in-seat audio/video-on-demand via HD touchscreen displays, while PAVES broadcast is the company’s overhead video and in-seat audio system. The company can offer a wireless IFE solution as well.

But the big talk at Apex was how satellite, wireless connectivity and IFE are converging, bringing more content to more devices than ever.

ARINC said passengers on selected Virgin Atlantic flights between the UK and the US/Caribbean are making great use of its Cabin Connect product, now fitted to three of the airline’s Airbus A330 aircraft as part of a 12-month trial.

Cabin Connect provides a wireless hotspot in



Ian Dawkins: “OnAir Play can even provide passengers with regularly refreshed, time-sensitive content, such as news and sport.”

the sky, with four access points per aircraft. Passengers are able to connect via Wi-Fi with their own personal devices, including smartphones, tablets and laptops.

Alan Penlington, Virgin Atlantic’s customer experience manager, said: “We’ve been pleased with the response from passengers, with the system working well technically, user numbers strong and increasing, and great ad-hoc feedback being received.”

Bringing more content to tablets is an on-going theme and Geneva-based OnAir has got in on the act, launching its OnAir Play solution at the show. The solution brings films, TV, live news, music, games, magazines and newspaper content to passengers’ devices.

Passengers connect to a Wi-Fi hotspot to enjoy a wide range of entertainment features and the system is compatible with all device types, regardless of brand, screen size and operating

system. OnAir’s on-board global system for mobile communications (GSM) and Wi-Fi networks mean passengers can also tweet, e-mail, send text messages, browse the internet and make calls.

Ian Dawkins, OnAir chief executive, said: “OnAir Play marks the start of a new era in how we spend our time during the flight. On the ground, the way we watch TV and films or listen to music has changed to an on-demand mentality. OnAir Play can even provide passengers with regularly refreshed, time-sensitive content, such as news and sport. We want to tell people about what we’re doing, through social media, e-mail, text messages and even talking to them. Why should it be different when we fly?”

OnAir also announced that its Mobile OnAir and Internet OnAir connectivity has gone into commercial service on Saudia’s new B777-300ER aircraft.

Continued
on Page 98



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CONTINUED FROM PAGE 96

The airline's passengers are able to e-mail, browse the internet, update social media, text and talk on the phone as they fly between the Kingdom of Saudi Arabia, the UK and the US. The OnAir connectivity uses Thales' TopConnect solution, which will be line-fitted to all remaining deliveries of Saudia's B777-300ERs.

Lufthansa Systems was also promoting its BoardConnect wireless IFE service, which had just been selected by its parent company for the airline's Airbus A321 fleet.

Twenty of the aircraft are to be fitted with BoardConnect in the summer of 2014 after successful trials. The system gives passengers wireless access to a wide range of content, which is then streamed to their own smartphone, tablet or laptop.

The content can include an interactive moving map, books, newspapers and magazines, plus video on demand. Up-to-date late-window movie content can also be streamed thanks to digital rights management (DRM) technology. Most devices can have an app for the movies installed on the aircraft, apart from Apple iOS, which must have the app downloaded before passengers join the flight.

The system uses active bandwidth management to ensure that each device gets the right data rate. Lufthansa Systems also announced a new shopping module for BoardConnect that allows passengers to browse a catalogue and make a selection, so boosting ancillary revenues.

Meanwhile, connectivity provider AeroMobile said it has seen data usage over its network double during the past year. Kevin Rogers, AeroMobile CEO, said that it is continuing to roll out its

services to more airlines, which are seeing substantial returns on their investments.

"Not only is connectivity improving their customer experience and brand, but the airlines' on-going revenue share pays for the equipment and generates a profit as well," Rogers said. He added that on some flights the ancillary revenue from connectivity exceeds that from duty-free sales.

When it comes to satellite connectivity, a number of announcements were made that promise to improve both coverage and connection speeds over the coming years.

Inmarsat said the first satellite for its ultra-fast Ka-band GX Aviation service is due to launch by the end of the year.

ViaSat was also upbeat about the forthcoming launch of LiveTV's Ka-band service for US carrier JetBlue.

Connectivity service

Don Buchman, ViaSat's director of mobile broadband, said all flight testing has gone as expected and had shown that the system was capable of delivering the claimed 12Mbps bandwidth to the aircraft – and often even more. The connectivity service will be provided by LiveTV and delivered over ViaSat's high-capacity ViaSat-1 satellite.

LiveTV received a supplemental type certificate (STC) from the FAA for the Airbus A320 in September. The plan is for the service to be launched on JetBlue's A320 fleet by the year's end. The full A320 rollout could take 18 months and its small Embraer 190 fleet will then be equipped.

JetBlue is offering a limited free Fly-Fi service for passengers, enough to send and receive e-

mails, browse web pages and watch short video clips. If passengers want more than this – including up/downloading large files and watching videos, such as Netflix – they can pay for an upgraded service.

United Airlines will deploy its LiveTV Ka system about a month after the JetBlue launch.

ViaSat already offers Ku-band coverage over the MENA region and plans to launch ViaSat-2 in 2016, which will improve the speed and availability of broadband services over North America, Central America, the Caribbean, a small portion of northern South America and the primary aeronautical routes across the Atlantic Ocean.

Global Eagle-owned Row 44 and Hughes Network Systems also announced that its coverage has now been extended across Europe, within Russia.

Gogo and SES signed a ground satellite infrastructure agreement to enable the future delivery and expansion of Gogo broadband services over North America, the north Atlantic Ocean and Europe.

Panasonic Avionics announced that it has significantly enhanced the coverage and capacity of its in-flight connectivity service over South America through the use of Telesat's new Anik G1 satellite.

It also announced an agreement with Intelsat for capacity on the latter's EpicNG platform. Panasonic will use the Intelsat 33e satellite, which will launch in 2016, to provide coverage and capacity for its global communications services over routes from Europe to south east Asia, and Europe to north Asia. It will also provide capacity and coverage for intra-region routes, including missions over Russia and the Middle East.

Kevin Rogers: "Not only is connectivity improving their customer experience and brand, but the airlines' on-going revenue share pays for the equipment and generates a profit as well."

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Smart thinking: Jared Shoemaker (left) and Bob Hess and the IntelliCabin control panel.

Intelligent idea promises to revolutionise cabin management

A mock-up showing off the innovative features of BAE Systems' IntelliCabin cabin management solution was on display at the 2013 Airline Passenger Experience Expo (APEX), in California. Steve Nichols reports.

BAE Systems is busy promoting its new IntelliCabin cabin management solution for passenger aircraft. The company describes it as a “smart and efficient way of managing passenger wants and needs in the sky”. It says IntelliCabin is both adaptable and scalable.

Innovations include power points for all seats that can be individually powered up or down, either via a central control or an app on a smart device. This means the power requirements of the aircraft can be better managed, or the airline can treat in-seat power as a paid-for option, driving up ancillary revenues.

Jared Shoemaker, BAE Systems' engineering director, cabin and flight deck systems, said this approach is novel, but could be the way passengers purchase power in the future.

“By being able to turn power on or off to individual seats it means that airlines could opt to actually charge for electrical power. No one has ever done this yet, but that doesn't mean that it couldn't be tried,” Shoemaker said.

“Our smaller in-seat power systems also consume 50% less energy than an existing in-seat set.”

The system can also gather cabin maintenance data, making for faster repairs and quicker turnarounds.

Shoemaker explained that, with its built-in monitoring capabilities, IntelliCabin could diagnose equipment failures so that maintenance personnel don't spend their time troubleshooting hardware or software issues.

IntelliCabin also features fully controllable LED mood lighting, dimmable windows, and enhanced seat control. The passenger foot area hasn't been forgotten either – small form-factor power boxes give passengers more foot room and extra space for luggage. The system will also enable tablet-based IFE systems on wide-body aircraft.

The whole system can be controlled from a central touch-screen or via a hand-held wireless device, such as a smartphone.

BAE Systems said IntelliCabin can also simplify flight crew tasks by automating them, enabling attendants to spend less time preparing the cabin and more time serving passengers.

Bob Hess, of BAE Systems cabin engineering, said the company is in discussions with many potential customers. If the certification process goes as planned, IntelliCabin should be available in quarter four of 2014. Integration should be effortless as it can work with other cabin sub-systems, including IFE.

Faran Siddiqi, IntelliCabin business development lead at BAE Systems, added: “Our meetings with potential customers have yielded overwhelmingly positive feedback. IntelliCabin's power management feature – with the ability to provide power to all seats throughout the cabin – has been especially well received.”

BAE Systems might not be the first name to spring to mind when you think of cabin technology, but its commercial aircraft solutions division has supplied cabin systems for Boeing 777 aircraft since 1995, delivering more than 1,000 sets since 2006. It also supplies the equipment that enables the 737 Boeing Sky Interior (BSI) for more than 600 aircraft.

Overall, its systems fly on an installed base of 12,000 Boeing 737/747/757/767 and 777 aircraft.

BAE Systems has design and development centres in Endicott, USA and Rochester, England; as well as manufacturing facilities in Fort Wayne, Indiana; Guaymas, Mexico; and Rochester.

Airlines are supported from Fort Wayne, Rochester and a facility in Singapore.

The company is also growing its global service network to include offices in emerging markets including Sao Paulo, Brazil; and Beijing, China.



SITA guides Saudia to a digital resolution

The on-going privatisation of Saudi Arabian Airlines (Saudia) has seen the kingdom's flag-carrier undertake a major investment to bring it to the forefront of digital technology.

Alan Peaford
reports.

With the successful privatisation of key areas of the Saudi Arabian Airlines Group, such as catering and ground handling, attention turned to the airline itself.

With its inclusion in Sky Team global alliance, the airline's existing systems came under close review.

As one of the longest-serving and largest airlines in the region, there had been a dependency on legacy systems.

Saudia brought in technology specialist SITA to help focus on the challenge of bringing the airline to the forefront of 21st Century digital technology and build an IT infrastructure that would offer its passengers an outstanding experience, no matter what their departure point or destination across the 250 sites in its 55-country network.

Achieving this would necessitate a complete overhaul of its existing IT infrastructure and a move to a robust internet protocol-based infrastructure. This would enable Saudia to move to a new passenger management system, a modernised flight operations and planning application, and the deployment of a new corporate HR and finance management platform.

Another challenge facing SITA was to help increase productivity and efficiency by eliminating the need for costly levels of support for legacy equipment and connectivity.

In January 2009, Saudia signed a \$76 million, five-year contract to outsource its entire communications, telephony and desktop activities to SITA. The vast project, known as the international managed converged advanced network program (IMCAN), would involve replacing more than 300 legacy leased lines and 5,000 desktops, printers and servers at more than 150 airports and city offices in 55 countries.

A project team was established comprising more than 80 staff, drawn from both SITA and Saudia.

And in September, SITA announced it had met its targets and installed IP telephony across Saudia's international network with significant savings achieved by eliminating international calls among its 151 offices around the world.

Muhammad Al Bakri, Saudia VP information technology, said: "The new voice-over-IP solution represents a major milestone for IMCAN and it helps us remove substantial costs from our business. Our partner, SITA, did an excellent job managing this project and ensuring the cut-over went smoothly."

The programme replaced more than 300 legacy leased lines and 5,000 desktops, printers and servers at 100 airports and city offices in 55 countries.

Key objectives

One of its key objectives is to provide a platform that will enable Saudia to implement a wide range of business critical applications. This will include a new passenger management system, which will allow Saudia to provide passengers with more mobility services, such as remote check-in, mobile boarding passes and self-boarding.

Ibrahim Saleh, SITA's VP sales for Middle East and Turkey, said: "Adding voice-over-IP is a natural evolution for Saudia. By combining voice with the IP connectivity on an international scale, the airline is leveraging the strength of converged networks and benefiting from significant cost savings. This major project also highlights SITA's expertise in providing global services, which are specifically designed for the air transport industry."

And the future looks good, too. "We can now also improve our customer-facing operations, such as the call centre and online booking. This will give our customers more options when they want to fly with us," Al Bakri said.

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In the light of recent operational incidents around the world, questions are being asked about the way aviators are trained.

Chuck Grieve previews the forthcoming Gulf Aviation Training Event (GATE) summit, where delegates will be asking whether changes need to be made.

TIME TO TAKE THE AUTO OUT OF PILOTS?

“We need to take a better look at how we’re managing the process of training the next generation of aviators.”

CAPTAIN ED DAVIDSON

In the two years since the inaugural GATE summit, a number of incidents and accidents have flagged up a problem for the air transport industry.

Training, which equips pilots with modern flight management abilities, may be short-changing them in the ‘stick and throttle’ ability to fly.

The biennial GATE, which attracts senior executives from the airline, regulatory, training and OEM communities, takes place alongside the Dubai Airshow on November 18-19 at the new Dubai World Central (DWC).

This year’s event will be taking a long, hard look at a number of challenging questions under the theme ‘Breaking the Paradigms: Training the Gulf’s New Generation of Aviators’.

“We’ve been watching what’s been happening and it’s made us believe how we’re training pilots is at the root of the problem,” said GATE director Captain Ed Davidson. “It’s based on an old paradigm. We need to break that paradigm.”

“We need to take a better look at how we’re managing the process of training the next generation of aviators.”

Davidson, vice-president of flight operations for Toronto-based Porter Airlines and formerly senior vice-president flight training at Emirates, said the training community’s focus is on the way aviators are taught to manage the flight deck. At the heart of the question is the balance between automation and hands-on flying.

If two recent cases of landing short – the Asiana Flight 214

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tragedy at San Francisco in July and the Lion Air Flight 904 incident in August at Bali, Indonesia – are symptomatic of the problem of automation versus hands-on flying. The Air France Flight 447 mid-Atlantic crash in 2009 is “the leading edge” of that debate.

Flight investigators concluded that the Air France pilots reacted incorrectly when their automatic systems malfunctioned and were unable to recover the aircraft when it stalled.

Autopilot advances mean that pilots today actively fly their aircraft about 80% less than they did as little as five years ago. “Both major manufacturers,” said Davidson, “have contributed to this problem, developing – probably at their customers’ insistence – aircraft guidance and flight management systems that operate with minimal human input.

“The question is how do we try and overcome this problem going forward, not just in training current pilots, but in new up-and-coming aviators? We learn how to fly and can’t afford to lose that stick and throttle ability.

“Everything is pointing to this as the key to fixing the problem going forward.”

GATE summit organiser Fairs & Exhibitions (F&E) has confirmed the participation of industry experts whose contributions will ensure a broad cross-section of the aviation industry is represented.

Thorny question

During their two-day deliberations, they will address regulatory oversight of outsourced training, evidence-based training, hand flying and the potentially thorny question of airline captain selection.

In addition, the summit’s two keynote speakers are Chet Fuller, senior vice-president, commercial aircraft at Bombardier, and Michael Bell, partner and co-head of the aviation, aerospace and defence practice at Spencer Stuart.

Fuller, as the man responsible for sales, marketing and asset management of the Canadian airframer’s commercial aircraft division, has been closely associated with the CSeries programme. The innovative super-efficient narrow-body airliner, the Canadian company’s 110-140-seat challenger to small airliners offered by Airbus and Boeing, achieved first flight at Mirabel, Quebec, on September 16.

Bell is a senior consultant with Spencer Stuart, one of the world’s leading executive search consulting firms. In this capacity, he provides top-level executive search services to clients in the airport, airline and aerospace sectors. He is the author of several airline industry studies.

Alongside the summit, the GATE pavilion will showcase flight-training institutes in the Dubai Airshow exhibition hall. The pavilion has doubled in size compared to the 2011 event, with new to show exhibitors – CAE of Canada, Hellenic Aviation Training Academy of Greece, Frasca International of the USA and Egyptair Training Center of Egypt.



We learn how to fly and can’t afford to lose that stick and throttle ability. Everything is pointing to this as the key to fixing the problem going forward.”

CAPTAIN ED DAVIDSON

CAE, a global leader in modelling, simulation and training, is the headline sponsor for GATE 2013. Gold sponsors are Frasca International and Pan Am International Flight Academy.

A memorandum published at the conclusion of the first GATE conference in 2011 identified four main areas of concern expressed by participants over the current and future training of Gulf-based pilots.

These included the quality of ‘outsourcing’; the maintenance of high-quality training standards of both incoming pilot candidates as well as existing pilots; the use of ‘evidence-based’ training methods; and regular and careful industry reviews.

Davidson said at the time that delegates were adamant that the impending gap between demand for pilots and their supply “cannot be allowed to negatively impact either the pilot training quality or high standards currently achieved by the Gulf region’s carriers”.

Unfortunately, said Davidson, the four points put forward in the memorandum made less impact in the industry than GATE 2011 delegates had hoped. They might have wanted regulators to take note, but recognise that regulators have had other issues to deal with.

GATE 2013 has used those issues as the starting point for its featured panel discussions. One of them, entitled ‘Implementing The New Industry Standard – Evidence Based Training’, tackles that issue head-on.

Evidence-based training – teaching aviators how to respond to a range of problems they might not experience every day on the line – has been shown to work in both the simulator and the cockpit.

Trainers can do so many more things in the simulator than in the air: low altitude stalls, single engine handling, and a lot of upset recover training. “Simulators – especially a Level D simulator – replicates what you do in the plane, and you can freeze it for a training point.”

The training community is “very happy” that IATA has embraced the evidence-based training philosophy with the IATA training and qualification initiative (ITQI) methodology. ITQI is aimed at strengthening the training of existing and future generations of pilots and maintenance technicians.

“Personalising the training takes more work on the part of the airline,” said Davidson. “But we believe what comes out is safer than other methods.”

Objective data recorded during flight, when compared with the pilot’s peer group, can highlight any relative deficiencies in a pilot’s performance. Training can then be designed to address those areas of concern.

A discussion on how airlines select their captains, ‘The Airline Captain - Selection and Training of the Cockpit CEO’, looks at another thorny issue. At some airlines, pilots make captain by seniority alone; others put their potential flight commanders through a rigorous selection process.

Introducing a selection process based on competence and ability would be problematic for airlines whose pilots are unionised; that would include those flying for most of the major carriers but none of the Gulf airlines.

Rigorous selection process

Emirates is among airlines with a rigorous selection process. “We made it clear at Emirates that being a captain is a privilege, not a right,” said Davidson. “You become a captain by being a great co-pilot, by demonstrating your knowledge and ability in that environment to be a commander.

“A small number of first officers who didn’t pass on the first try got it on the second; an even smaller number didn’t make it and probably never would.”

The elephant in the room of GATE 2013 is the problem of recruiting and training the next generation of pilots among Gulf nationals.

“While I was at Emirates,” said Davidson, “we struggled getting young Emiratis interested in being pilots. We put together about 250 nationals as cadets and struggled to get beyond that.”

One problem is economic. Working for the government pays better than working in the private sector; working conditions are also better, as are pensions. The long hours that aviators work, the time they spend away from family, crossing time zones and continents outside the comfort zone of their own culture are not attractive.

Qatar Airlines’ partnership with CTC Training opens the doors to prospective ab-initio cadets of any nationality. Said Davidson: “I think most of the Gulf airlines will go to what Qatar is doing.”

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Alenia Aermacchi SF-260TP

*The Alenia Aermacchi SF-260TP is a small aircraft that punches well above its weight as **Justin Paines**, chief flying instructor with the Empire Test Pilots' School, found out on a recent flight test.*

Light trainer that packs a heavy punch

In terms of cost and size, the Alenia Aermacchi SF-260TP is typical of aircraft used by military forces for elementary flight screening and training.

Size apart, it has the look, feel and performance of large single turbo-prop trainers fielded by Aermacchi's competitors. However, it retains the life-cycle cost benefit of a much lower-performance aircraft.

I assessed the aircraft at Alenia Aermacchi's plant near Milan in Northern Italy, enjoying the hospitality of my old colleague Quirino Bucci, the company's chief test pilot and a graduate of the Empire Test Pilots' School.

After the necessary (and mercifully short) briefings and pre-flight preparation, Bucci and I walked out to the aircraft. Frankly, it was nothing special to look at. Yes, it had pleasing lines, a clean, well-balanced appearance, a little style provided by the wing-tip fuel tanks. But in all other respects it was single-prop light aircraft, such as you might expect when taking your first flying lesson.

I was able to select full reverse in one swift throttle movement, then return the throttle to ground idle without any risk of engine over-temperature – essentially carefree engine handling on the ground.

However, the aircraft is "a lot more" than it first appears. Its relatively thin wing section, for example, (better for higher speed flight) began to reveal hidden promise. A single step on to the wing root provided easy access to the cockpit, which appeared spacious, despite its relatively small dimensions.

The cockpit was intelligently laid out and boasted two large multifunction displays – an installation developed for the SF-260 but based heavily on the Avidyne Entegra.

Within these displays comes more capability than in many fighter aircraft; moving map, flight management system, and systems displays were all available. Certainly, the central up-front controller functionality was representative of many fighter types.

It was late morning by now on a hot day so it was a relief, on strapping into the aircraft, to feel a cool, air-conditioned blast powered by the ground power unit (a simple external battery cart) even before engine start – a definite comfort enhancement to help reduce pilot fatigue.

Start-up was simple and rapid, with aircraft avionic systems (including the inertial platform) brought online by a single switch under battery power, prior to engine start.

The external field of view on the ground was excellent. The nose of the aircraft, sized for the powerful turbine, seemed long and slightly restricted the forward view from the aircraft centreline. However, the nose was also narrow and, overall, the geometry combined with the side-by-side seating and large bubble canopy to give an excellent field of view.

Directional control during taxi was conventional via the rudder pedal-actuated nosewheel steering, and was predictable and easy to operate with a light, responsive feel. The steering did not centre itself on release of foot pressure, which might have been expected to create some problems in fine direction control (such as taxiway centreline maintenance) but no problems were apparent during the taxi tasks I assessed.

With full rudder pedal deflection (but without use of brakes), minimum turning radius was exceptional – just 14 feet or so. Coupled with the excellent field of view, the aircraft should be easy to operate in confined spaces.

The only characteristic that had a slightly harsh feel was the power control. The engine is controlled by a thrust lever as well as a conditioning lever which is used to set operating mode and propeller RPM. But with such power available 'under the



The SF-260 – clean, well-balanced lines. The large bubble canopy gives an excellent field of vision.



Up-front control (top, centre) and two large multi-function displays – state of the art.

hood' it is, perhaps, not surprising that large and somewhat surprising thrust changes were evident with small throttle movements. I was initially over-cautious, especially with selecting reverse thrust while taxiing.

But my caution was unnecessary. With reassurance from Bucci I experimented, becoming gradually more confident. For example, I was able to select full reverse in one swift throttle movement, then return the throttle to ground idle without any risk of engine over-temperature – essentially carefree engine handling on the ground.

Take-off was typical of the big turbo-props I have flown – rapid acceleration (12 seconds from brake release to rotation at 65kts), with moderately high rudder pedal force required to counter the engine torque. In fact, if I'd closed my eyes, I could almost have been in one of those larger, more expensive turbo props.

Control forces for rotation at 65 knots-indicated air speed (KIAS) were light, and acceleration to climb speed at 110kts was rapid. Retraction of gear and flap gave almost no change in trim forces (big trim changes can be a significant distraction to a pilot), and any out-of-trim forces could be quickly nulled using the stick-top 'witch's hat' for lateral and pitch trim.

The rudder trim switch, however, is not hands on throttle and stick (HOTAS) but is

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mounted just below the throttle. At first glance, the lack of HOTAS could be considered a deficiency but its position was easily located without looking down and it was also well tuned to allow easy, accurate rudder trimming.

I was keen to start the assessment but, as Bucci directed me to climb towards the Alps, which were bathed in sunshine and crested by beautiful white cumulus clouds, I allowed myself a brief moment to appreciate the view (endorsing my assessment of the excellent cockpit field of view)!

Incidentally, the SF-260 climbed quickly – just over three minutes from 2,000ft to 8,000ft at maximum continuous power. When training, there is often a need to get above a cloud layer to find clear air and a good horizon. Time spent climbing is largely wasted flight hours. The performance demonstrated by the 260 was excellent – a few minutes into the sortie and you would be ready to begin the lesson.

The aircraft exhibited light but positive apparent longitudinal static and manoeuvre stability – providing an excellent manoeuvring platform without the need for high control forces and little to no intrusive directional trim changes.

Qualitatively, it was a joy – a real pilot’s aeroplane. The light forces and quick response gave the feeling that it was willing and responsive without resistance. Arguably, these stick forces were verging on being too light but my experience in manoeuvring the aircraft was that it was just right (in stark contrast to other big turbines I have flown – affectionately known as ‘multi-gyms’ due to the high control forces and consequent physical ‘work-out’ the pilot undergoes).

The controls were well tuned – with minimal friction and good centring. Harmony between pitch and roll axes could be slightly improved – in the roll axis forces were high, comparatively, to the pitch axis. But this should not be taken as a significant deficiency because the roll axis was, nevertheless, light and responsive compared to competing airframes.

Indeed, the roll response was one of the aircraft’s significant enhancing features and there was little need to coordinate aileron inputs with rudder. At 160kts and 8,000ft, without rudder coordination, a full 360-degree roll was completed in three-and-a-half seconds – nice and fast. Even at elevated g, where roll performance often deteriorates, it took just five seconds for a 360-degree roll at 3g.

Lateral stability was light but positive, spiral stability in the cruise was neutral, and directional stability was moderate – all good features. Fine control of the pitch axis in dynamic tasks, such as attitude capture and g capture, exhibited a slightly slow short period mode, which seemed

Qualitatively, it was a joy – a real pilot’s aeroplane. The light forces and quick response gave the feeling that it was willing and responsive without resistance.

Story of the SF-260

The piston-engined Siai Marchetti SF-260 first flew in 1965 and has developed a strong pedigree.

First equipped with a (then Allison, now Rolls-Royce 250B) 350 HP turbo-prop in 1981, the powerful trainer remains available in both piston (Lycoming 540 series 260HP) and turbine variants.

It has been a massive success, selling more than 900 aircraft to over 27 military forces and a number of civilian flying schools and specialist aviation outfits.

Many military units have re-ordered the same aircraft – a great endorsement of its effectiveness.

It’s a flexible platform, too – boasting two wing pylons certified up to 300lbs carriage capacity on each side. External stores carriage brings the ultimate adaptability in facilitating anything from weapons through defensive aids to telemetry equipment.

Among civilian uses, the ‘Macchi’ is popular both with aerobatic teams and with companies offering air-to-air ‘dogfight’ experiences.

to be the cause of an occasional tendency to hunt a little in capture tasks. Overall, however, this was a lovely aircraft to manoeuvre.

Pulling up into a loop, I began to really enjoy this little beauty. The light pitch forces and responsive roll axis combined with a number of other enhancing features, such as the large bubble canopy and powerful engine, to make it not only easy to fly, but fun too.

For example, the small rudder trim changes with speed and power combined with excellent sideforce cues when out of trim to make life really easy for the pilot in the directional axis. About a quarter rudder only was required over the top of the loop.

One of the best handling tasks to teach coordination in young pilots is the stall turn (or hammerhead manoeuvre), which the 260 executed nicely.

But where I really enjoyed myself was in flick rolls. From around 110kts a sharp aft stick input to the edge of the stall was followed by a half rudder input and bingo – the aircraft flick-rolled rapidly (around two seconds for the 360 roll) with a slight forward stick input to accelerate the roll rate.

The greatest skill in flick manoeuvres is being able to stop this rapid roll precisely and, after two practices, I was able to end it crisply with about a half opposite rudder application.

The nice thing about this kind of capability is the ability to stretch the more able students with demanding handling tasks in a benign, safe environment. Too often we pass students out of training without sufficiently developing their raw handling skills and the benefits of an aircraft that allows you to do this should not be underestimated.

After exhausting Bucci’s patience with my flick rolls (great to fly, horrible to sit through) I moved on!

Stall and spin characteristics are important for two reasons. Firstly, it is vital for an inexperienced pilot to be able to avoid inadvertent stalls and spins but also to be able to recover from them should they occur.

Secondly, training aircraft must be able to be deliberately stalled and spun in order to give the young pilot experience.

The SF-260 excels in both areas.

Approaching the stall clean at 8,000ft, with the engine at idle and a 1kt per second deceleration rate, I got excellent stall warning with a loud and unmistakable audio tone at 82kts.

Aerodynamic buffet began at 79kts and increased progressively in intensity to 73kts, at which point stall occurred with a benign ‘pitch break’ (drop in pitch attitude).

Holding the aircraft in the stall with approximately one-third to one-half aft stick, I was pleasantly surprised to find the ailerons still responsive in the conventional sense, with no apparent tendency for the aircraft to depart and spin.

A slight two-and-a-half centimetre push on the stick to neutral was required to un-stall the wings and recovery from the dive was easy with no apparent tendency to re-stall.

In the landing configuration, most relevant to the safety of an inexperienced student pilot, stall characteristics were similar, with good warning and a stall at 62 KIAS.

Entirely satisfied with the SF-260’s stall characteristics, it was time to spin.

Spinning is potentially hazardous. Spinning performed (either deliberately or inadvertently) by student pilots is more hazardous still. Controls can be mishandled for a variety of reasons, so an aircraft that will recover from a mishandled spin with mishandled recovery controls is a tall order, but extremely desirable.

I elected to both mishandle the controls during the spin and mishandle the recovery. That Bucci was content to let me do this was an indication of his confidence in the aircraft... and in me.

Entering the spin with full aft stick and full left rudder at 75kts with the engine at idle, the 260 exhibited classic motion. A moderate rate, rolling entry settled after a turn into a moderate rate, 45-degree nose down, non-oscillatory spin at a rate of just less than four seconds per turn. So far, so good.

After one-and-a-half turns I sharply input full out-spin aileron, to simulate mishandling in the spin. Theory would tell you that the spin would become more oscillatory – and indeed it did. However, after the planned three turns (total) I used a centralise-controls recovery technique.

Now, the standard spin recovery was to use full opposite rudder, so in looking at a centralise recovery I was again evaluating possible mishandling – this time, a mishandled recovery.

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The cockpit – small on the outside, big on the inside.



An excellent spin trainer – as good as I’ve seen anywhere.

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After two turns the aircraft yaw and roll rates noticeably reduced and though at this point, as we had briefed, a small opposite rudder input was made, the aircraft was certainly recovering with centralised controls.

I repeated the spin, this time using full in-spin aileron, which smoothed and stabilised the spin (in accordance with theory). Centralised controls after three turns (total) this time recovered the aircraft in just three-quarters of a turn.

Overall the spinning had been extremely encouraging. Not only were the motions benign (neither too fast nor too oscillatory and, therefore, not disorientating) but the 260 exhibited reliable recovery characteristics (at least as far as I was able to test) even with centralised controls.

So overall, an excellent spin trainer – as good as I’ve seen anywhere.

As with many aspects of flight training, there are two demands on the aircraft – it must be safe for the inexperienced pilot and have a good set of characteristics for training.

Both visual and instrument flying are relevant so I went ‘heads in’ to evaluate use of the primary flight display on the large, Avidyne multi-function screens. I performed a variety of representative instrument tasks – speed capture in the dive, heading capture in turns, and pitch

attitude capture. The primary flight display was clear and readable in the bright conditions and was easy to use.

I then elected to configure with gear and flap a little early, to have a look at the handling qualities in the landing configuration, before reaching the landing pattern.

Turbulence at lower level (we were approaching the airfield by now) meant that it was difficult to get a clear picture of some of the characteristics I had more carefully evaluated in cruise configuration, but there were no surprises. Aside from what would be expected at the lower airspeed and altitude, the SF-260 was essentially the same aircraft at 100kts with gear and flap deployed as it was at 160kts in the cruise.

And so we progressed to the visual circuit on runway 36 at Venegono. Wind was light and variable at less than 5kts from the west.

Maintaining speed and altitude downwind, the throttle felt sensitive for small movements, again unsurprising given the beast of an engine. But this sensitivity was mitigated by excellent cues from the engine noise – not always the case with fixed-rpm turboprop engines. Overall, I had no trouble controlling the engine and setting airspeed downwind.

Flight around finals at 95kts was comfortable, with good view over the nose and predictable, comfortable handling qualities.

The most critical part of approach and landing as regards pitch handling qualities is the flare. Student pilots frequently face challenges learning to flare and land. They can get too tightly ‘in-the-loop’ and set off pilot-induced oscillations (PIO) or simply find themselves unable to control the flight-path accurately. Hard landings and/or students washed out of training are all too often the result – both are extremely expensive.

It was great to find the SF-260 was benign in the flare. Crossing the threshold with 85kts there was little or no apparent loss of lift (sink) as the throttle was closed, and I could detect no tendency for PIO, even when I attempted very tight in-the-loop control, flaring to touch down between 65 and 70kts.

Once on the runway, powering up for the touch-and-go was also straight forward, requiring a large right rudder input as the power bit, typical of turbine-powered singles.

After two such touch-and-goes I reluctantly lined up for my final full stop landing. Use of reverse thrust on the ground was simple and carefree and our landing roll-out was less than 500 metres.

Taxiing in, I reflected that the quantitative measurements I had taken had given no surprises but, more importantly, that I had found the SF-260 a positive joy to fly.

It wasn’t till I got out on the wing after shutdown, however, and noted just over 70 kilos of fuel used in 1:15, that I remembered that this aircraft is both small and comparatively cheap.

It is an excellent training platform, an excellent operational platform for light turbo-prop roles and overall, clearly, it is a lot bigger in its capabilities than in cost and size.

Now, that’s like getting your cake and eating it!



SF-260 infra-red television camera.

For a more detailed review of the aircraft and the flight test go to www.africanaerospace.africa/features



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Canadian simulation goliath CAE instantly became the dominant pilot training services provider for European, Middle East and African airlines, business aircraft and civil helicopter operators last May when it acquired its largest rival, Oxford Aviation Academy.

Rick Adams looks at what it has been doing in the region since then.

WHAT CAE DID NEXT

When CAE paid more than US\$300 million a year ago to swallow UK-based aviation training company Oxford Aviation Academy and its personnel leasing services subsidiary Parc Aviation, some analysts questioned the steep price but few disputed the strategy of precluding the potential ascent of a serious competitor by removing one of the industry's brand-name jewels (and CAE's largest commercial aviation training services challenger) from the auction bloc.

Overnight, CAE plugged a couple of gaps in its portfolio. It became the No 1 commercial aircraft training provider in Europe in terms of simulator deployments, and it inherited Parc's mantle as the global leader in leasing experienced aviation personnel.

Montreal, Quebec-headquartered CAE is now, by far, with about one-quarter of the market capacity, the foremost independent airline pilot training company with strength in Asia, the Middle East, Europe, and the Americas.

It is second to FlightSafety International (FSI) in business aviation, though CAE offers more training centres outside North America.

CAE and FSI are playing leader leapfrog in the rapidly growing civil helicopter training scene being driven by offshore oil and gas exploration. And, important in addressing the perennially predicted worldwide pilot shortage, CAE has established the largest capacity for training new pilots via its rebranded CAE Oxford Aviation Academy.

"The Oxford and Parc acquisition expands CAE's end-to-end offering," said Glenn Frederick, CAE executive vice president and global head of the commercial aviation training services and ab-initio businesses. "We now offer all the segments an airline might need – newly minted cadets, manage recurrency training, help support the ups and downs of initial training for new fleet aircraft or transitions, as well as surges in flying demand through temporary crew resourcing."

CAE has spent tens of millions of dollars to integrate Oxford – rationalising personnel (including the highly visible former managing director, Anthony Petteford), moving some simulators, and rebranding. But it gained more than a quarter-million in annual revenue and is expected to move past the billion-dollar mark in its civil aviation business for the first time when it reports its fiscal year results this month.

The company is sufficiently confident to purchase 35 new glass-cockpit aircraft from Piper for the ab-initio programme, as it begins standardising its fleet. The order includes Piper Archer single-engine propeller trainer aircraft and twin-engine piston Piper Seminoles.

Both aircraft feature Garmin 1000 cockpits and, students and instructors will appreciate, are air-conditioned (especially important in the heat of CAE's Phoenix, Arizona, USA two area

There is talk of the UK Government trialling an apprenticeship approach, by which an airline would employ the student during the training regimen as well as after.

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The Oxford buy added 40 full-flight simulators and eight new locations to the CAE training services operations.

campuses and the chill of Oxford, where most of the flying training is done).

CAE's prior designated aircraft supplier had been Diamond.

The CAE-customized Pipers will be the first ab-initio aircraft to be factory-equipped with flight data analysis and cockpit video recording systems. As part of the training programme's safety management system (SMS), data, audio, and video will be captured and replayed through CAE Flightscape software. Immediately after a flight, instructors can debrief students using synchronised audio/video and animated representations of the flight profile. The cockpit recording equipment will also enable CAE to better monitor cadet solo flights.

CAE Oxford Aviation Academy advertises a capacity to train more than 2,000 cadets per year across 11 flight schools on five continents. In Europe, these include facilities in Oxford, Amsterdam, The Netherlands (previously NLS) and Brussels, Belgium (previously Sabena).

Single campus

The campus in Evora, Portugal was closed last year and the two locations near Phoenix are expected to be rationalised into a single campus.

Other locations are in Australia (Melbourne and Perth), Cameroon (Douala), China (Hong Kong), and India (Gondia and Rae Bareli). With the acquisition of Oxford, CAE shed previous marketing affiliations with schools in Moncton, Canada; San Diego, USA; and Langkawi, Malaysia.

The range of programmes includes commercial pilot licence (CPL), airline transport pilot licence (ATPL), and multi-crew pilot licence (MPL) schemes.

CAE is seeking to standardise as much as possible, blending best practices from the CAE and Oxford programmes and initially seeking the UK Civil Aviation Authority's blessing.

CAE participates in the British Airways future pilot programme (FPP), which is administered through CTC Aviation subsidiary Airline Placement Limited. Frederick said CAE is "the largest provider of pilots to BA year in and year out. There are more from Oxford than any other single programme."

BA funnels cadets through CAE, CTC and Flight Training Europe, requiring a security bond of £84,000, which is repaid across seven years once graduates become first officers.

Tuition, of course, has long been

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a stumbling block to attracting student pilots and there is talk of the UK Government trialling an apprenticeship approach, by which an airline would employ the student during the training regimen as well as after. The programme might also result in an accredited BSc degree.

Frederick said: "More airlines are also looking to MPL, and we're very well positioned to take advantage." CAE's MPL portfolio includes the EasyJet and Flybe first officer programmes.

One key element of the blended CAE-Oxford ATPPL will feature ground school and in-flight upset prevention and recovery training (UPRT) via partner Aviation Performance Solutions (APS). UPRT is designed to teach pilots how to recognise, avoid and effectively recover from stalls, aircraft upsets and a range of other unusual attitude situations, as well as enhance overall manual flying skills.

APS trains commercial and business aircraft pilots at Phoenix-Mesa Gateway Airport in Arizona, using Extra 300L aircraft, and has recently opened a new location at Seppe Airport, Bosschenhoofd, in The Netherlands, featuring Slingsby Firefly T-67 M200 aerobatic aircraft.

The Oxford buy added 40 full-flight simulators and eight new locations to the CAE training services operations, six of those in Europe –

Copenhagen, Denmark; Oslo, Norway; Stockholm, Sweden; London Heathrow (subsequently closed), London Gatwick, Manchester, and Oxford, UK.

Of its nearly 50 civil aviation training locations around the globe, CAE now boasts 17 commercial aircraft training sites in EMEA, predominantly for Airbus, Boeing and Bombardier types. Other facilities are in Amsterdam; Barcelona, Spain (opened last July with Vueling); Brussels; Burgess Hill, UK; Madrid, Spain (Iberia); Palma de Mallorca, Spain (Air Europa); Paris, France (KLM/Air France); Prague, Czech Republic (Czech Airlines); and Rome, Italy (Alitalia).

Second training centre

CAE and Emirates are opening a second training centre this month in Dubai, UAE, in the Silicon Oasis development and focused exclusively on airline pilots.

An A330 simulator has been positioned in Johannesburg to support South African Airways.

CAE had operated an A320 simulator in Moscow, Russia but is now an equipment supplier to Aeroflot.

Among recent training services contracts are a four-year deal with Ryanair, which includes the recruitment, selection, and type-rating training of

an expected 1,000 new pilot cadets for the B737NG.

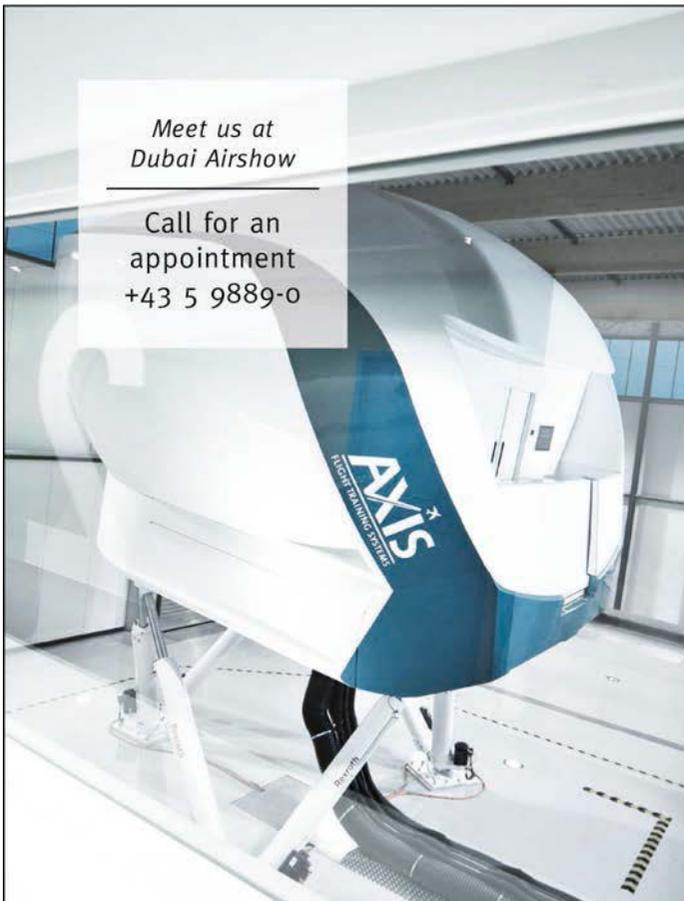
A three-year contract with Turkish Airlines will have CAE train A320 and B737NG first officers, ab-initio at Oxford and type-rating training throughout Europe.

Frederick is focused on addressing the new EASA pilot licencing regulations. "One of the benefits to a training organisation is that EASA member states have to recognise each other's approvals. Instead of different regulatory requirements from each national aviation authority, we can have a more streamlined organisation. It should harmonise the rules, drive best practice and save us some money."

Dublin, Ireland-based Parc is a low-overhead hidden gem for CAE. At last count, it had more than 1,400 personnel on lease with over 70 airlines, charter operators, aircraft manufacturers, and other companies worldwide.

Parc's specialty is provisioning experienced flight crews and maintenance personnel, but it also performs services such as ferry flights – arranging crews, flight planning, and regulatory approvals for moving planes from one place to another (a new aircraft from Toulouse or Seattle, for example).

As the Eurozone economy continues to struggle, Frederick does not see a near-term pilot shortage



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in the region. "Airline growth in Europe is fairly modest. Most of it is re-fleeting, not additive."

For business aviation pilot training, CAE offers Beechcraft King Air, Bombardier, Cessna, Dassault, Embraer, Gulfstream, and Hawker types at Burgess Hill and the Emirates-CAE Flight Training joint venture, which is celebrating its 10th anniversary in Dubai.

Helicopter training is available in Sesto Calende, Italy through CAE's Rotorsim joint venture with AgustaWestland; in Stockholm via the Oxford deal; in Stavanger, Norway and Aberdeen, Scotland from the 2011 acquisition of CHC Helicopters training resources; and at the Emirates-CAE JV in Dubai.

CAE continues to dominate full-flight simulator (FFS) sales to airlines that conduct their own training, enjoying a 70-80% market share annually of openly competed business. It has sold 37 and 35 simulators in the past two fiscal years respectively, though many of those are effectively internal (or half so) since the devices are destined for JV partner facilities.

The Montreal manufacturer has had sparse competition in the civil simulator market in recent years but that may be about to change. Deep-pockets US defence contractor Lockheed Martin has acquired Netherlands-based Sim Industries



CAE Burgess Hill.

and L-3 recently completed its purchase of the Thales Training & Simulation unit (originally Rediffusion) in Crawley, UK.

Together with FlightSafety International, Rockwell Collins, which absorbed the former NLX several years back, and Mechtronix, which has its headquarters less than a kilometre down the Cote-de-Liesse highway from CAE in Montreal, Lockheed and L-3 are expected to help push FFS prices downward.

■ Rick Adams is one of the foremost communications experts on aviation training, simulation, safety and other subjects with three decades' experience for industry-leading companies and publishers. He is chief perspectives officer for AeroPerspectives, an aviation communications consultancy based in the south of France, Geneva, and Dallas.

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Pan Am has embraced the idea of sharing passion in aviation to young people from all backgrounds.

Where have all

New and innovative ways of attracting more young people into aviation – and making it attractive enough for them to stay – are needed if the industry is to avoid a damaging shortage of pilots. Chuck Grieve reports.

Where is the next generation of aviators going to come from? It's a question that airlines, not just in the Middle East but around the world, are confronting as they ramp up their fleets to meet the predicted surge in demand for international travel.

Middle East airlines, says Boeing in its Current Market Outlook, will increase their fleets by an estimated 1,750 aircraft between now and 2032. To support that projected growth, 40,000 new pilots and 53,100 new technicians will be needed.

Statistics from the Federal Aviation Administration (FAA) show that the number of new pilot training candidates is alarmingly low. Commentators and industry professionals agree that the airline industry worldwide will suffer if something is not done now to attract more young people into the industry.

Greg Darrow, senior director of sales and marketing for Pan Am International Flight Academy, suggests the challenge facing the aviation industry is one of perception. Writing in the ICAO 2012 training report he said: "The glamour is gone," and with it "one of our industry's greatest recruiting tools. Our ability to sell our profession is being stripped away."

"All [young people] see are the problems and challenges.

"They read about the turmoil in our industry, the frustrated passengers, bankruptcies and layoffs, as well as the changing compensation and benefits packages, and it has the effect of stalling them on the runway."

Darrow suggested a three-step programme for attracting more young people into aviation. It involves introducing the profession of pilot to young children, following that up with clear career guidance at the appropriate stages, and finally a clear career path from school into the workforce "to help them find their way into an airline cockpit".

Aviation could take a leaf from other industries, where companies have created direct entry career paths for high school and college students. "Creating a clear career path to the airline cockpit

for self-sponsored students is one of the tools I believe will increase the supply of qualified first officers for airlines at a more cost-effective rate than a fully sponsored airline cadet programme," he said.

"We need to do more to attract the very best to a career in aviation.

"When I talk to young people who ask what it is like to be an airline pilot, I enthusiastically share how exciting it is with all the benefits and rewards this career provides. But I also share some advice given to me a long time ago. Being successful means finding something you love to do.

"This love of flying must not be lost on our young people. It is the very message that will inspire the next first officer candidate to start flying."

If any organisation was qualified to carry that message forward, it's Pan Am. The international flight academy is a strong contender for the title of the world's most experienced airline training organisation. It has partnerships with airlines throughout the Middle East. "Many of our graduates fly for some of the largest airlines in the region," said Darrow.

The Pan Am academy has been in operation since 1980 when Pan American's training





Former Pan Am cadets are now in control of some of the world's great airliners like the B777 - and graduates are confident of a career.

the flyers gone?

and flight simulation facilities were centralised in Miami, Florida. After the closure of the airline in 1991, the academy became an independent entity – the only surviving division of Pan Am – and has operated continuously since.

Today Pan Am provides a range of training from bases throughout the US and the world. It may be in line to add more, following the company's acquisition in August by ANA Holdings, the parent company of Japan's All Nippon Airways. The new owner said it plans to expand Pan Am into Asia by providing training to other Asian airlines, partner firms and subsidiaries.

With air travel expected to double within the next 30 years, and with much of the growth in Asia, the company is poised to capture opportunities and create an additional source of steady revenue.

The academy's airline pilot programme is a full-time structured FAR FAA-approved commercial pilot course with concurrent flight and ground training. Cadets take their basic and advanced ground and simulator training in Miami before transitioning to one of three flight centres for fixed-wing training. Such is demand that courses start every two weeks.

Pan Am also operates an innovative preferential interview programme, under which it screens candidates who come through its airline-specific custom type rating programmes. Those who show potential are recommended to the partner airline for an interview. This process gives the airline a pre-screened candidate while for the pilot, it's an interview with an airline he or she wants to work for.

Solving the funding quandary

The fact that most airlines, in the current financial climate, are not in a position to sponsor the initial training of new pilots, is an incentive for training providers to find ways of graduating airline-ready pilots from their training programmes.

UK-based CTC Aviation was determined to find "innovative funding solutions" and develop a training philosophy to challenge standard practices. Chief executive Rob Clarke said: "One of my main goals remains for CTC to continue to do whatever it can to facilitate airline entry for today's young pilots."

Through its CTC Wings programme and with the help of partner airlines, the company has been able to do just that. CTC runs individualised versions of this programme in conjunction with client airlines. One such is Qatar Wings, in partnership with Qatar Airways.

This new international cadet pilot programme offers employment opportunities with the airline for cadets who successfully complete training and qualify for the Qatar Wings MPL. "Uniquely," said CTC, "this programme is open to applicants worldwide – no experience required".

Paying for training has always been a stumbling block. CTC came up with the future pilot programme (FPP) with British Airways (BA); the airline helps successful applicants secure funding for their training by guaranteeing any loan agreement. "This is something we have campaigned for across the industry for many years," said Clarke.

A breakthrough came in April when a BSc Hons in professional aviation pilot practice was launched through the new UK Government-backed

higher apprenticeship framework, in association with Middlesex University. By giving academic student status to qualified individuals, aspiring young airline pilots will be able to fund their studies through the UK student loan system, significantly lessening the financial burden of flight school.

Within the framework, the CTC Wings programme is accredited by Middlesex University. Candidates will meet its requirements by completing the CTC Wings integrated programme, combined with operational flying as a first officer with one of CTC's partner airlines.

CTC UK managing director Martin Hunt welcomed the development, which means aspiring pilots are no longer forced to choose between a degree and professional pilot training. "Everything they need for the qualification can be achieved either in the workplace or in CTC's flight training facilities."

Looking beyond the horizon, the company's international pilot programme (IPP) brings its modular training courses under the CTC Wings brand. Business development director Lee Woodward said the move is designed to help applicants from around the world access CTC's training and airline placement opportunities.

"We will continue to work with our partner airlines to innovate and develop the very best opportunities for aspiring pilots around the world," said Woodward.

Clarke added: "We are seeing growth in all our markets but the emerging ones perhaps offer the most exciting opportunities."

The Saudi Aviation Flight Academy (SAFA) has its sights set on developing general aviation (GA) in Saudi Arabia. Chuck Grieve talks to the man hoping to turn the dream into reality.

The sound of light aircraft engines on a summer's breeze is music to the ears of aviation enthusiasts. They enjoy recognising a type by its sound signature and are apt to scan the horizon in search of the source of an unfamiliar noise.

That, says Captain William Roe, is one of the factors behind the creation of the Saudi Aviation Flight Academy (SAFA) in Riyadh, of which he is managing director.

"Our principals have an ambition: they want to be able to step outside their front doors at any time of the day and hear the sound of aircraft engines in the sky," said Captain Roe. "The only way you can do that is to build training capacity in the kingdom, bring planes here that people can buy and fly.

"You have to open up the airspace. We're really in at the ground floor."

The SAFA dream, which has the backing of the influential Saudi Aviation Club and Saudi Binladin Group, became a reality in mid-2012 when the academy enrolled its first students. It passed a milestone in July 2013 by becoming a GACA Part 141-approved pilot school.

At the time, Captain Roe said it was "a huge leap" for the academy toward fulfilling its mission "to fuel the growth of aviation in the kingdom by providing a world class centre of excellence for pilot training".

Pioneered techniques

Captain Roe's background in aviation training is rooted in the Embry-Riddle Aeronautical University in Florida, where he was involved in developing a methodology that sought to exploit the possibilities of new technology in mainstream flight training. It pioneered many techniques that were later found in the multicrew pilot's licence (MPL).

He joined SAFA in 2009 after spending two years setting up the ill-fated Dubai Aerospace Enterprise University.

The Saudi venture, he said, offered interesting and exciting possibilities.

"Our training philosophy is to provide students with not just the 'stick and rudder' skills of an experienced airman, but the ability to make complex decisions, which will set them apart from those trained under traditional flight training principles.

"We're able to complete this task by using not only the latest in teaching methods utilised by the world's leading airlines, but through our commitment to staying current and validating our curricula on a constant basis."

The academy officially started operations in mid-2012 at Thumamah Airfield, the facility 28km northeast of Riyadh's King Khaled International Airport, which once served the needs of the late King Khaled's winter palace.

Teach for the sky...



Capt. Bill Roe: Vision for GA training in Saudi Arabia.

Currently operating from temporary facilities, it has 10 aircraft delivered with a further 10 on order to make up a mixed fleet of the Austrian-built Diamond piston singles and twins, complemented by Diamond Simulation Level 5 and 6 flight-training devices (FTDs).

SAFA's permanent facilities are under construction beside the 4km runway.

Phase 1 comprises the main academy building, a new maintenance hanger, simulator buildings, apron and covered aircraft shelters and is on schedule for completion and handover in October 2014. The cost of construction is in excess of 100 million riyals (\$27 million).

Phase 2 includes commercial shop space and the first set of on-site student and staff housing – "like a live-in campus".

With the academy's measured approach to development, work on this phase will follow completion of the first phase at an appropriate interval.

The 4,000sqm school building will house what SAFA describes as one of the world's best civilian flight training facilities. Its resources will include a suite of classrooms and briefing cubicles, laboratories, libraries, simulators, offices and social amenities. Significantly, it will also contain an aviation outreach facility for the general public.

"We've been working to understand our market," said Captain Roe, whose duties include giving presentations to Saudi high school students. "I'm learning a lot about the habits of these individuals, what they think is a good career.

"It's one piece in our outreach programme. The idea is to bring in the general population to teach them a bit about aviation and get them excited so they may pursue aviation as a career."

And the public is responding positively, judging by the popularity of the academy's open days.

SAFA has two streams to its training – professional and recreational flying.

While Captain Roe expects some graduates will

“Our training philosophy is to provide students with not just the ‘stick and rudder’ skills of an experienced airman, but the ability to make complex decisions, which will set them apart from those trained under traditional flight training principles.”

go on to fly for Saudi Arabian airlines, business and charter operators, he also anticipates many will remain private pilots.

The profile of the academy’s current register of students is significant. Most of the 70-odd students are Saudi nationals, although a “fair number” are expatriates, including foreign men on contract and young non-Saudis who grew up in the kingdom.

Some students have enrolled to convert their foreign pilots’ licences to Saudi Arabian GACA certificates. Because some of SAFA’s students are working professionals, the academy has built-in flexibility to meet their needs and work around their schedules.

“The kingdom has a lot of people with the means to own, operate and fly an aircraft,” said Captain Roe. “There are businessmen who have a PPL and want to convert it and buy a plane.

“Our development will support, grow and build GA in the kingdom. In that respect, we’re a strategic project.

“Our principals recognise that aviation is an

expensive and low-margin business but it’s important to grow this capacity inside the kingdom and keep it here.”

As part of its support for private pilots, SAFA will soon offer after-market maintenance support to owners of Diamond aircraft.

Earlier this year, the academy signed an agreement with Diamond Aircraft to become its sole dealer in Saudi Arabia – and within two weeks had sold a Diamond DA40 NG. Despite not having started marketing the aircraft, Captain Roe said there have been other expressions of interest.

New products

It is unusual but not unknown for a flying school to hold an aircraft dealership, but there were “synergies” between SAFA and Diamond Aircraft that led to the agreement. At this stage in the relationship, there are no sales forecasts, but Captain Roe said the new products that Diamond has under development, especially the larger and faster DA52 piston twin, would be of great

interest to businessmen with interests across the kingdom.

SAFA is naturally keen to do its part to help meet the future flight crew requirements of the national airlines. The academy is in on-going discussions with airlines in the kingdom about their pilot training needs.

Although its primary aim is to support Saudi students to enter aviation, the academy welcomes all nationalities, subject to security requirements and residency status.

For its part, SAFA follows a policy of employing nationals wherever possible and has Saudis peppered throughout the organisation, at dispatch and senior management level, maintenance and administration. “We’re here to create jobs,” said Captain Roe.

“Saudi Arabia looks ominous unless you’re here. It’s important for people to understand that folks like us and a couple of other schools in the kingdom are trying to develop the aviation industry in a professional and proper manner.”



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‘If Disney did airports, how would they organise it? That’s the sort of question I want to ask my people internally. How can we completely re-invent the whole airport experience?’

PAUL GRIFFITHS

*Dubai World Central will be the world’s largest airport when it is completed in the mid-2020s. But Dubai Airports CEO Paul Griffiths tells **Martin Rivers** that the future aerotropolis is about much more than scale.*

When Concourse A opened at Dubai International Airport (DXB) in January 2013, the benefits of travelling through the purpose-built Airbus A380 facility were immediately apparent to passengers.

As well as allowing business and first class customers to board aircraft direct from their lounges, the 11-floor concourse features two hotels and 11,000sqm of retail space. It has cemented DXB’s status as the world’s foremost A380 hub, with the airport handling 7,259 of the double-decker flights last year.

But, as home carrier Emirates Airline prepares to relocate to Dubai World Central (DWC) in the middle of the next decade, this \$3.3 billion upgrade is little more than a stop-gap solution for operator Dubai Airports.

“We’re pretty much out of space now at the current airport,” conceded Paul Griffiths, chief executive of Dubai Airports. “Our growth has been 15.5% on average since the airport was founded in 1960. So the sorts of growth rates we’re talking about make investment in new infrastructure essential.”

DXB’s annual capacity rose to 75 million following the addition of Concourse A’s 20 gates. That is comfortably ahead of the 67 million passengers that Griffiths predicts for 2013. But with footfall expected to rise by 7.2% each year until 2020, the pressure is on to continue expanding ahead of the DWC transfer.

Concourse D will be the next major enhancement, bringing annual capacity up to

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Dubai World Central
promises a whole
new approach.



CONTINUED FROM PAGE 121

90 million by around 2015. Longer term, the latest projections envisage DXB having space for up to 103.2 million passengers by 2020.

Though impressive, these figures are dwarfed by the plans for Al Maktoum International Airport at DWC in Jebel Ali, which will eventually handle up to 160 million passengers per year across five runways. Its current capabilities are somewhat more modest. The airport's single passenger terminal will have capacity for fewer than nine million passengers during its first year of operations in 2014.

"The main development at DWC hasn't yet started," Griffiths noted. "It's a long way to go before that overtakes the capacity of DXB. Our new master plan for DWC will be ready to launch over the next few months and it will describe in more detail how we plan to get there."

The Dubai Government has been careful not to publish concrete timelines for expanding operations at DWC, mindful of the embarrassment caused by airport delays elsewhere in the region.

Commercial flights

But commercial flights at the future hub have been gradually scaled up since June 2010, when cargo flights began on its single extant runway. DWC handled 219,000 tonnes of airfreight in 2012, more than doubling the previous year's throughput. The figures are a drop in the ocean compared to the 12 million tonne capacity forecast upon completion.

The next milestone will come in May 2014, when Emirates SkyCargo transfers all dedicated freighter services to the gateway. That will, in turn, free up slots at DXB for the expanding mainline unit.

General aviation operations have also gathered steam at DWC since they were inaugurated in 2011 by Al Futtaim Services Company. At the time of going to press, scheduled passenger flights had been due to begin with launch partner Wizz Air plus several other "prestigious carriers" such as Kuwait's Jazeera airline.

"I'm talking about a quantum leap in thinking through the airport process, to make it easier for people to have a journey that is much more slick and efficient."

PAUL GRIFFITHS

"We have more than one airline scheduled to start," Griffiths confirmed. "We've also had significant growth in the number of cargo carriers [operating at DWC], so overall it's looking as though the launch is going to be quite a good outcome."

Although completion of DWC is tentatively scheduled for the mid-2020s, Griffiths stressed that 2025 would "absolutely not" mark the end of development work at Emirates' future home.

As for the flag-carrier itself, the most up-to-date estimate for relocating flights is still 2025. Airline chairman Tim Clark has made clear his preference for a wholesale move rather than a gradual transition. Emirates had originally wanted to transfer operations by the end of this decade, but it opted to expand facilities at DXB as the development schedule slipped back.

While a degree of uncertainty persists over DWC's completion date, the concept underpinning the \$33 billion airport, plus its surrounding aerotropolis, has advanced significantly.

"It's almost a question of, 'If Disney did airports, how would they organise it,'" Griffiths explained. "That's the sort of question I want to ask my people internally. How can we completely re-invent the whole airport experience?"

Though most details have yet to move beyond

the blueprint stage, the overarching vision for the airport is clear. Just as Emirates' sixth-freedom hub model has shaken up the airline industry over the past decade, DWC aims to completely deconstruct and reconceptualise the experience of travelling through an airport.

"Taking a fresh view and starting again, you can design in very positive product features that other airports that are growing incrementally only dream of," Griffiths said. "I'm talking about a quantum leap in thinking through the airport process, to make it easier for people to have a journey that is much more slick and efficient."

Starting with the architectural design, DWC will largely do away with the contemporary focus on check-in facilities – a staple feature of airports around the world for decades.

Griffiths described check-in counters as a "non-essential" structure that airports have been saddled with since the early days of air travel. Instead of preserving the "laborious process" of queuing up and showing your documents, he said DWC will treat checking in as a perfunctory "confirmation of travel" that can be actioned at various stages before entering the airport.

Distributed processing

Online check-in has already advanced this concept, but Griffiths said it has much further to evolve. He outlined his vision for "distributed processing", whereby passengers can check in and drop off their bags at any number of points across the local transport network linked to DWC. As well as being more convenient for travellers, this will reduce bottlenecks at the main terminal.

"We can devolve check-in to that first point of call," he explained. "So if you're taking a limo to the airport, your driver can check you in. If you're on the train, you can check in at the station... and the train can take you as close to the plane as we can possibly get you. Then you don't need to be deposited into a vast hall."

The emphasis will be on speed, efficiency and enjoyment, Griffiths

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The passenger terminal at DWC was all ready to lift the wraps for first passenger flights at the end of October.

CONTINUED FROM PAGE 122

said, rejecting any suggestion that airports will always be considered a stressful environment. To this end, kiosks are unlikely to feature prominently at the future home of Emirates.

“For the last ten years, I’ve regarded kiosks as an interim technology,” he said. “You don’t really need a kiosk if you’ve got a way of encoding the ticket and travel data electronically. Kiosks would never emerge from a proper brainstorm of what the passenger wants to see.”

While spreading out check-in and baggage drop facilities will help to disperse passengers as they pass through the airport, watertight security checks still require a nucleus of activity. Advancements in this field will, therefore, focus on a combination of new screening technologies and proactive queue monitoring.

“I want greater levels of security assurance but I want lower levels of intrusion into either the flow [of passengers] or the customer service element,” Griffiths said. “I don’t want it to be a horrible intrusive experience.”

Controversial technology

He argued that the security industry had scored “a bit of an own goal” with its first generation of full-body scanners, which use X-rays to penetrate clothing and detect threats. Dubai’s airport security chief rejected the controversial technology in 2010, insisting that displaying an outline of the naked human body would “contradict Islam” and violate the privacy of passengers.

Other global hubs were less concerned but in May the Transportation Security Administration (TSA) completed an overhaul of all US-based machines. Its X-rated backscatter devices have now been replaced with next-generation AIT units, which produce cartoon-like images rather than naked outlines.

Such body-masking capabilities will appease many critics of the first-generation technology, and Griffiths said they could lead to a re-think in Dubai. “A representation of a human – just shading an area that needs further investigation –

will cause less potential embarrassment to certain cultures,” he noted.

“Anything that makes it more difficult for people with malicious intent to get through a security screening process is a good development for the industry, and that’s something that we would actively support. We’re keeping abreast with all those developments.”

Elsewhere on the global security front, pre-screening initiatives such as TSA PreCheck have grown in popularity. The programmes allow regular travellers to register for pre-travel risk assessments, before gaining access to faster security lanes and less intrusive inspections. Griffiths is not convinced, however.

“If the process design is right, if the technology is right, if the space is right, the aim is to never have a queue,” he noted. “If you never have a queue for a process, then it ceases to become a problem.”

Dubai Airports sees intelligent flow monitoring as a preferable way of speeding up security channels, and doing so in an egalitarian fashion that benefits all passengers equally. DXB already uses unspecified technologies to identify potential bottlenecks and “address them before they appear”, Griffiths added.

The challenge when planning ahead for DWC – with security as with customer-service functions – is to invest in the right technologies for the future. Interactive wayfinding, for example, will definitely feature prominently at DWC, but it is not yet clear whether it will be based on Wi-Fi, Bluetooth or another common standard.

“Things move on so quickly,” Griffiths said. “You find when you’re designing technological solutions that things which were not possible when you were thinking it through suddenly are. So we have to be careful that we invest at the right rate.”

Much has been made of Dubai’s broader vision for DWC to function as an aerotropolis, or a sprawling mini-city built around the airport and fuelled by the economic activity that it attracts.

Al Maktoum International Airport will be just one of six ‘clustered zones’ on the 140sqkm site. The Dubai Logistics City and Aviation City will

function as free trade zones for their respective industries. There will also be several real estate developments across the Commercial City, Residential City and Golf City.

“There are a huge range of facilities planned,” Griffiths noted. “But the main thing is that the airport will form the core of it. And if we’ve got the airport there, then everything else will then be spawned by the airport being a successful business enterprise.”

Details on the project are, again, few and far between, but the number of companies committing to the wider aerotropolis is growing. In September, for example, Hellman Calipar Healthcare Logistics announced plans to build the region’s largest dedicated healthcare warehouse at the Logistics City.

Griffiths acknowledged that the immense scale of DWC would only bear fruit if Dubai’s aviation sector continues its breakneck expansion. But with the sixth-freedom hub model sucking up traffic from across the planet, he has no concerns.

Strategic location

“We’re not serving a conventional catchment area within 100 miles of the city of Dubai,” he emphasised. “We’re four hours flying time from one-third of the world’s population, and eight hours flying time from two-thirds of the world’s population. The strategic location of the Middle East is driving this growth. We are competing in 220 markets for a very small slice of each individual market.”

Noting the fragmentation of Europe’s aviation centres – where flying restrictions and capacity constraints have pushed low-cost carriers into far-flung secondary bases – Griffiths said that legacy hubs simply cannot match Dubai’s potential for connectivity.

“We don’t have space restrictions. We can build a hub that’s efficient because everyone’s there,” he concluded. “The stars are all aligned in Dubai to create perfect integration between all of the airlines and their different business models. And that will, in turn, drive more demand. It’s a virtuous circle.”

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Hamad International's opening has been postponed yet again to early 2014.

How to shut the door

The opening of long-awaited airport projects can sometimes be tricky affairs and cause significant delays. Managing such problems effectively is crucial in order to avoid a white elephant, as Keith Mwanalushi learns from Lufthansa Consulting.

A number of new airports have made headlines in recent months as their owners announce (or don't announce) possible opening dates for their massively delayed projects.

Berlin Brandenburg in Germany, Murcia's Corvera Airport in Spain, and Hamad International Airport in Qatar quickly spring to mind, all having postponed their opening dates several times.

Alexander Manakos, partner at Lufthansa Consulting, observed that the reasons were usually diverse and very much depended on the specifics of the actual project. "Generally speaking, the definition of launch dates is influenced by very different stakeholders and their particular interests," he said. "Therefore, in certain cases, we might see too much optimism when it comes to applying realistic time lines on the different stages of such large airport projects."

Among the most notable of these high-profile airports is Hamad International, the proposed new home of Qatar Airways in Doha.

Initially, the airport was supposed to open a few years back. Then, after a flamboyant publicity campaign announcing the opening on September 12 2012, the project stalled, having missed another opening target in April 2013. The airport's opening was cancelled just a few hours prior to a soft launch on April 1.

After missing that target, due to the fact that the project had missed newly introduced safety requirements, the airport's launch was pushed back again to the end of 2013. However, Qatar Airways CEO Akbar Al Baker reportedly announced in a press conference in China that Hamad International would now begin operating early in 2014.

Qatar is creating a strategy around hub operations and the new airport is key to fulfilling that strategy.

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The financial cost to retail businesses as a result of delays can be significant.

on delayed openings

The slow completion of the airport has led to a series of fractious words from Al Baker as to the performance of the on-site contractors – but perhaps the problems go back to overambitious time lines communicated by contractors for construction work, simply to make offers more attractive with regard to cost and time. Either way, the jury is still out as details remain sketchy.

Manakos suggested that airport delays may generally be caused by a lack of realistic time lines for equipment and procedural test periods to correct any defects that might – or most certainly will – occur during the construction period and the installation of operational systems. A typical example for such critical equipment is baggage conveyor systems.

“Apart from this, another problem that could lead to delays is the failure to apply efficient project management and controlling,” explained Manakos. “This must include the assurance of the availability of required construction permits and operation licences. As past examples have shown, negligence with regard to permits and licenses can have heavy impacts.”

From planning to construction and the start of operations, airport projects involve a huge number of contractors, sub-contractors, system and equipment suppliers. “It is, therefore, imperative that skilful project planning, steering and controlling is established and allowed to do its job. One can have the best project management in

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Alexander Manakos: Analyse the existing complications first before announcing new opening dates.

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place but if frequent requests for modifications occur, typically in design or equipment, delays are inevitable,” said Manakos.

In respect to the new airport in Doha, the owners were confronted with problems that stem from a change in Qatar health and safety laws. Before April this year, the airport would have met or exceeded the requirements but, under new legislation, it did not.

Once a new airport is confronted with technical or safety-related delays, generally speaking it is expected to go into crisis mode and adopt a management strategy aimed at getting it operational as quickly as possible.

Manakos said: “In the past, we have observed that airport and other large infrastructure projects tend to go public very quickly with new launching dates following the announcement of delays. Such reactions might help to reduce the negative public image initially.”

However, he warned that the damage is often much worse, if the new deadlines cannot be met. “Therefore, it is more appropriate to thoroughly analyse the existing complications first and identify their respective priority, especially when technical and safety-related aspects are involved that do not allow for any compromises. Accordingly, the necessary corrective actions

need to be defined, in particular with regard to their realistic impact on budget and time lines,” he stressed.

For these reasons, Manakos suggested that it was advisable to apply a collaborative decision-making approach on the way forward, instead of placing a strong focus on communicational aspects only.

Considering stakeholder interests, public awareness and the prestige factor of large infrastructure projects, finding the right balance between technical project requirements and perception by the public can be a difficult balancing act, he admitted.

Baggage handling

When delays occur, the reasons are not always apparent, but some reported incidents commonly involve issues with the baggage handling systems, inadequate fire safety procedures, check-in desk glitches, IT failures and, in one instance, banks refusing to continue funding the project.

Consultants are usually able to evaluate the impact of delays to the airport operation. Manakos said that initially the impact would depend on whether the same operator would be operating the new and old airport.

“If it is the same operator, impacts will be more

limited, as operational cost and revenues at the old airport will continue, and airport facilities will show high utilisation rates. This might even be positive for the profitability of existing facilities, while quality at the existing facilities will suffer.”

One problem for the new airport operator is that revenues are not being generated, whereas financing costs need to be covered. Most probably many airport users will claim compensation for suffered losses, which may result in strong financial impacts for the airport operator.

“Other than this, damage to the image of the airport operator must be expected and need to be limited as much as possible by professional communications management. Some recent examples have shown how much the public image can suffer from delays in airport opening or significant operational problems after the opening. However, it is extremely difficult to financially evaluate such damage,” Manakos continued.

Despite all the wrangling behind the scenes and the reported lawsuits between the airport owners and contractors at Hamad International in Doha, airline tenants tend to suffer the most – in this case Qatar Airways.

The airline has publically claimed that some of its contractors “badly defaulted” with the delayed

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Qatar Airways is eager to move into its new home.

airport opening seriously affecting the airline’s expansion plans. It has caused huge revenue losses, increased construction costs and delay penalties, and more importantly, inconvenienced passengers.

The airline’s international terminal at the current Doha International Airport creaks under the weight of under-capacity. Moving to the shiny new Hamad International is critical for Qatar Airways, which is rapidly trying to build an

aviation transit hub in the Middle East to compete with the established success of Dubai and the ambitions of Abu Dhabi.

It’s easy to see why the airline is eager to move. The U\$15 billion new airport project includes a 270,000sqft retail gallery, a 23,000sqft public mosque, two 100-room, five-star transfer hotels, a health spa, a 3,431 car parking garage, and a new state-of-the-art flight catering facility.

“Airlines are, in fact, the most visible

organisations which suffer from delays in airport openings,” agreed Manakos. “Basically, all businesses along the supply chain will face significant financial impacts, since they will not be able to sell their services and products as planned and the loss of revenue will have strongly affected their financial performance.

“This is of particular importance for organisations where equipment and facilities are relevant to their production process and require significant capital expenditure – for instance cargo warehouses, fuelling facilities, maintenance facilities, and so on. All organisations with fixed, installed infrastructure that remains unutilised will suffer most from delays in airport opening.”

Manakos said the relative financial impacts on retail businesses at the airport are significant as well – especially smaller enterprises that may not be in a position to absorb a loss of revenues against financing cost and commitments made to their suppliers, while sales will be impossible during the period of delay.

“Generally speaking, all enterprises in the supply chain that have planned with cash flow will suffer from loss of revenues if the airport opening is delayed. The gravity of the damage will depend on their capital expenditure versus their financing cost,” Manakos concluded.

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GATE SMART

The A380 has a significant effect on gate services.



From gate service systems at airside to flight information displays inside the terminal, Middle East airports are pioneering breakthrough aviation technologies.

Keith Mwanalushi
looks at a few recent developments.

According to industry research, about 80% of airport accidents occur at the gate and apron area. These are busy, confined areas where aircraft, vehicles and people are in constant motion in all types of weather conditions. So a reliable information-driven approach to safe and efficient operations should help to maximise safety and efficiency.

A key player in the gate service systems and technologies market is Avicorp Middle East. Avicorp provides design, engineering, supply, installation and after-sales service for aircraft support systems for airport contact and remote parking stands and aircraft hangars. "The most common services found at airports in the Middle East are visual docking guidance systems, aircraft 400Hz power, and aircraft cooling. These are the most popular," declared the company's Saied Samhat.

Safety on the ground is a top priority of every airport. According to the Flight Safety Foundation, ramp accidents and incidents number more than 27,000 each year – or one per 1,000 flights.

The injury rate is nine per 1,000 flights with 82% of all ramp accidents occurring in the gate area and 48% of those are during arrival.

Recently, JBT AeroTech was awarded

contracts in excess of US\$15 million to supply gate service systems for the King Abdul-Aziz International Airport (KAIA) in Jeddah, Saudi Arabia. The order, placed by Avicorp Middle East and Almbani General Contractors, includes the supply of new Jetway air handling units and pit distribution systems.

Samhat explained: "Avicorp has a SR385 million (\$102 million) contract at KAIA to provide engineering, supply and installation of 400Hz power, pre-conditioned air, aircraft potable water and aircraft lavatory drainage at the new 46-gate terminal being constructed in Jeddah.

"The 400Hz systems are hanging off the boarding bridges and the remainder are supplied through aircraft service pits installed in the apron. Avicorp has purchased the pre-conditioned air units and aircraft service pits from JBT for the project."

Samhat also stressed that the airlines utilising the equipment will benefit from a more efficient service at the gate and the airport will benefit from usage fees and reduced vehicular ramp traffic.

The Jetway equipment is an integral portion of the new construction project's mission to become an intermodal hub that enhances KAIA as an

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international gateway to the Jeddah region. “We are very pleased to support continued regional growth and economic development through the supply of these gate service systems to KAIA,” added John Lee, vice president and division manager at JBT AeroTech. Full delivery of the equipment is expected within the fourth quarter of 2013.

The A380 has had a significant effect on gate services at new airports in the region and the ultra-large aircraft has added a new dimension to advanced gate service designs and product development. Many of the new Middle Eastern airports have Airbus A380 capability as part of their integral design.

Samhat boasts that Avicorp and its supply partners have led the design and supply effort since the aircraft’s inception. “Many hundreds of gate systems have now been installed. As a direct result of the A380, we have adapted existing products and introduced new ones to meet the ground support equipment requirements of this aircraft.

“Our supply partners have been instrumental in working with both Boeing and Airbus and developing standards for services such as PCAir and ground power. As an example, in October this year we delivered the first 4-by-90 output diesel-driven GPU ever supplied to a customer in the Middle East.”

Lower fuel consumption

Samhat believes the industry is now turning its focus, in the long term, on the opportunities that are developing as a result of the drive for lower fuel consumption and the need for airlines to be compliant with future air and water quality regulations and emissions standards and recycling obligations.

“These things will create the need for new products at gates to provide services and support. They will also create new forms of revenue for the airport operators. Ultimately, the selection of which gate services to install at any airport is driven by the desire to save money for the airlines and to make a profit for the airport authority. As long as those two factors remain constant, there will always be new ideas, opportunities and products and we are optimistic,” he said.

Savings in operational costs by airport operators inevitably lead them to periodically review their investment in IT infrastructure inside the terminal, too, such as flight information display system (FIDS) technologies, where new advances are currently being made.

Dubai-based Smartworld, an airport systems integrator in the Middle East, in collaboration with Samsung, has developed what it believes to be the next generation in FIDS technology.

“This programme was created to manage the heavy and ever-increasing passenger traffic of an airport in the Middle-East, which needed terminal-wide FIDS that broadcast information from a constantly updated database to numerous multimedia displays placed strategically



FIDS technology continues to evolve.

throughout passenger facilities,” said Reyadh Ayesh, CEO and managing director at Smartworld.

During the development stage of the FIDS, Ayesh recalled that one aspect that was strongly considered was the airport’s responsibility for handling millions of passengers per year. “With this in mind, a reliable mission-critical solution was needed as any potential onsite technical problems could cause serious consequences that might disrupt the operation of the airport,” he added.

Travel information

FIDS are designed and developed to help improve communications and keep passengers constantly informed of travel information. Interestingly, and in addition to the usual flight information, these indoor displays show gate assignments, waiting hall locations, baggage area assignments, and weather forecasts – as well as entertainment and advertising content.

Considering the rapid expansion of airports across the Middle East, there must surely be considerable emphasis on developing aviation-related systems and infrastructure even further.

“The rapid developments that we are witnessing today have given air travel and transport the most advantages as compared to other forms of transportation,” said Ayesh.

“The challenge in this growth, however, is how to manage it efficiently, securely, safely and in such a way that is compatible with the environment. Another challenge is how to make your airport world class in terms of standards, facilities and the like, and maintaining it. These are complex tasks that demand integrated solutions,” Ayesh added.

With air travel expected to quickly recover to former growth rates, airports are facing the challenges of handling the increasing number of passengers, freight, and baggage in an efficient and cost-effective way, as well as creating environmentally-friendly solutions and products, plus satisfying the rising security standards required worldwide.

The Middle East’s innovative solutions demonstrate the efforts being made to integrate multiple systems and technologies and develop end-to-end solutions that enable airports, airlines and ground handlers to stay fully focused on their core business.

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A clear correlation between the capacity of BIA and home-grown carriers.

Facelift for Bahrain – but will the new face fit?

Bahrain is pressing ahead with a much-needed facelift of its international airport but, as Keith Mwanalushi finds out, positioning it among its neighbouring peers will be the greatest challenge of all.

Talks of a multi-million dinar expansion of Bahrain International Airport (BIA) have been on the table for quite some time. At least five companies are now known to be competing for a chunk of the US\$1 billion project – two years later than anticipated.

The first phase of the project will include a new terminal that could cost between BD10 million (US\$26.5 million) and BD20 million.

The airport currently serves a maximum of nine million passengers annually, which could increase to 13.5 million under the new plans.

The new development will reportedly feature around five additional contact gates, nine remote gates, 40 new check-in counters and a large transfer facility. The Bahrain Airport Company (BAC) indicated that demand for a larger terminal at BIA has increased as the number of passengers landing in Bahrain has grown.

BIA last had a considerable revamp in 1994 and before that way back in the 1970s. All the way through to the late 1990s the airport continued to receive a number of industry accolades for its



Mark Clarkson: "I doubt we could see a fourth sizeable hub in the region."

services and facilities – but it has now lagged behind compared to neighbouring airports that are being redeveloped at a grander scale.

Geography has clearly played a key role as Dubai, Abu Dhabi and Doha are positioning themselves as global aviation hubs. "We've arguably already seen some impact of this in the region given the issues experienced by Bahrain Air, Gulf Air and Royal Jordanian," commented Mark Clarkson, commercial director at aviation intelligence firm OAG.

Is this as a result of the 'other' hubs getting their act together first or is it because they have stronger home markets in terms of size, value, tourism, inward investment, and less complicated visa rules?

Clarkson argues that it is a combination of many factors. "However, to look at it another way, I doubt we could see a fourth sizeable hub in the region. Oman Air has been through plenty of changes and is trying to get a foothold but I think the big three hub airports have it to themselves now."

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The expansion and upgrade of BIA is long overdue.

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At present, the three airports (and by default the three carriers – Emirates, Etihad and Qatar Airways) are well-placed with Etihad and Qatar having slightly different business models and markedly different from Emirates (in terms of fleet).

It is clear that the big three airports are dominating the region in terms of intercontinental capacity and, largely, the connecting long-haul flows to and from Europe and Asia. However, OAG data shows that Jeddah and Riyadh both remain as major operations within the top five airports (by scheduled seat capacity) in the region.

Etihad and Emirates have their own growth plans – and rightly so. The fact that Dubai Airports is now talking about 200 million passengers by 2045 is quite remarkable by any standard.

Slipped down the ranking

So what impact would an upgraded BIA have in the region? “Bahrain International has slipped down the ranking in the Middle East over the last five years and is now the eighth largest in terms of capacity and very likely to be ninth in 2014 as Muscat continues to grow,” said Clarkson. (Muscat has averaged 12% growth per annum since 2008, while BIA has decreased by 4% on average).

“An upgraded Bahrain International, while surely welcome and a significant improvement in terms of facilities for airlines and passengers alike, will continue to have major challenges in its path in the short to medium term.”

Clarkson added that the competitive pressures of the big three, the other airports mentioned above and the market positions they have already established, ensured that it would be “very difficult” for BIA to get back up the ‘league table’ in the region.

Another issue facing Bahrain is its home capacity. The closure of Bahrain Air has reduced capacity at BIA, and Gulf Air has been scaling back operations as part of a restructuring programme for years. “There is a clear correlation between the capacity of Bahrain International and the operations of the home-grown carriers,” Clarkson affirmed.

“As recently as 2012, Gulf Air and Bahrain Air were collectively responsible for 65% of the scheduled seat capacity at the airport. Gulf Air alone has increased to 56% of the capacity at Bahrain International in 2013. However, that is against a trend of the carrier decreasing its own capacity – down 17% in 2013 and down on average by 5% per annum since 2008,” Clarkson analysed.

This clearly reflects on the demand for services to and from Bahrain at present. “The main carrier (Gulf Air) may be increasing market share but that is in an overall market that is declining. Some carriers such as Emirates and Etihad continue to add minor levels of capacity but it is insignificant in the overall market. Of the top ten carriers by seat capacity that increased capacity in 2013, this only equated to 1.5% of the total seat capacity from Bahrain International,” he added.

Cargo is also being recognised as a key driver at BIA and, as such, a planned expansion of cargo facilities is reportedly at a preliminary stage. Cargo business has been fairly static in recent months however; overall cargo volumes last year were approximately 353,000 tonnes, up 1% on the previous year.

One of the key differentiators and success stories at BIA is the fact that Bahrain enjoys a strategic location in the region, acting as a gateway to the northern Gulf. In addition, the kingdom has the shortest travel time between its

seaport, airport, and the logistics processing zone of anywhere in the Gulf.

Looking at data from OAG, there is an interesting pattern with regards to route development potential at BIA. The two carriers that have been growing significantly have been Flydubai and Turkish Airlines.

“While these carriers may continue to add capacity in the short term they both, to some degree, compound the problem for Bahrain International in trying to re-establish itself in the region,” said Clarkson.

“The core focus for Turkish Airlines is to continue to develop Istanbul as a hub and either add new capacity or grab market share from the big three airlines of Emirates, Etihad and Qatar Airways. It, thus, further undermines the network of Gulf Air.”

Market share

He said Flydubai now represented 26% of the seat capacity on Bahrain-Dubai and, along with Emirates, that was a combined market share of 57%, with Gulf Air at 40%, its lowest capacity on the route since 2005.

“The short-term growth opportunities for Bahrain International remain with foreign carriers and that will continue to have an impact on the potential of Gulf Air to grow, particularly as it continues to restructure,” said Clarkson.

Looking ahead, Clarkson warned that with the recent developments in the big three (Emirates partnership with Qantas, Qatar Airways joining Oneworld and Etihad developing equity partnerships alongside a wide range of codeshare agreements), it will be “increasingly challenging for Bahrain to establish a position of growth until it has both a stable home carrier that can carve out a niche strategy and a stable market”.

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*Air traffic management (ATM) is one of those largely invisible services – a bit like plumbing – that nobody thinks about until something goes wrong. Global air traffic solutions company NATS is working to change that, as **Chuck Grieve** discovered.*

NATS: THE WAY TO DO IT

The Middle East has a golden opportunity to demonstrate leadership on a global scale in the way the region harmonises its air traffic management (ATM) in the face of rapid growth in aviation.

John Swift, Middle East director for global air traffic solutions company NATS, is hopeful. “We see pockets of investment to address the rapid growth in aviation where 10 years ago the spurt in new aircraft and terminals was not always matched by the ATM structure put in place to handle it.

“But the real point is you can’t deal with these problems in isolation. It’s the equivalent of building a six-lane highway to your border. If there’s no corresponding infrastructure on the other side, you’ll still be queuing to get across.

“That’s the challenge – how do people engage more effectively in regional cooperation and initiatives?”

NATS, which is headquartered in the UK and provides consultancy and air traffic solutions throughout the world, sees the growth in the Middle East, driven largely by Emirates, Qatar Airways and Etihad Airways as well as the low-cost carriers, as an opportunity to enhance its reputation for expertise in air traffic solutions.

Among projects it has already carried out are the Qatar airspace design and implementation for the new Hamad International Airport in Doha and an airspace optimisation project in Oman.

Swift, a former air traffic controller with extensive experience in the Middle East, took up his appointment in mid-2012. He is based in Abu Dhabi but travels throughout the Middle East and north Africa, as demand dictates.

He is currently looking to augment the NATS presence in the region with a country manager for Saudi Arabia as well as permanent representatives in Oman and Qatar and additional staff in the UAE.



John Swift: There is a need for cooperation, collaboration and consolidation.

One of the things that ATM probably hasn’t done well in past, he said, is to demonstrate the connection between effective air traffic infrastructure management and economics. Although aviation is often referred to as an economic engine, the link with the air traffic management part of the machinery is missing.

“The expansion plans of airlines and airports need matching plans from the regional ATM community. Bottlenecks might occur just outside your border. An overall programme approach for managing the regional requirement is something that has to be looked at.”

It’s an economic argument. “There’s no sense in building fleets and airports if aircraft have to sit on the ground,” he said.

When air traffic management professionals such as Swift have seen how cross-border contingency plans can be drawn up to deal with the hypothetical closure of the Straits of Hormuz, they’ve been left scratching their heads as to why ATM fails to get a similar level of attention at the regional level.

Fortunately the picture appears to be changing.

Greater regional oversight has been on the agenda of the Gulf Cooperation Council (GCC) transport ministers’ conference. World bodies including IATA, representing the airlines, and the Civil Air Navigation Services Organisation (CANSO), representing the air traffic managers, have backed initiatives for better coordination.

“I think it needs more explicit government support,” said Swift.

The Middle East, Swift believes, could learn from the mistakes of others in creating a regional solution to ATM that covered combined planning and harmonisation of projects to avoid duplication of investment. Such a framework could include a common approach to the issue of cooperation between civil and military aviation.

“That’s an issue here,” he acknowledged. “So much airspace is segregated for military use.

“I hear airlines saying the military have to give their space to civil aviation. That’s the wrong approach. The military are legitimate airspace users, as is everyone else. The conversation needs to change.”

Both military and civil aviators need to understand and appreciate each other’s missions, said Swift. A constructive approach would be to explore how everyone could be accommodated to the fullest degree without jeopardising national security.

The work that NATS completed for Al Maktoum airport was a great opportunity to demonstrate the joint civil-military approach that NATS uses in the UK. In Dubai, with the operations of two civil and one military airport to consider, NATS “worked across the divide, acting as an honest broker to demonstrate the best approach to make that work”.

Increasing capacity is another key area where the experience of NATS is invaluable. The airspace redesign project that NATS carried out in Oman in 2010-11 was a “good example of

Heathrow's two-runway operations provides lots of experience for NATS controllers.



connectedness”, said Swift. Oman’s issue with capacity resulted from the traffic generated by the growth of Emirates, Qatar and Etihad airways. “All that traffic in and out of the east has to go through Oman, so the regional connection, addressing issues in tandem with your neighbours, is very important.”

NATS was also able to help Dubai International Airport refine its operational performance, thanks to the company’s experience at Gatwick – the world’s busiest single-runway airport – and Heathrow, which handles a total of 90 movements an hour on dual runways.

Maintaining that consistency and level of performance requires the refinement of procedures, training, aircrew briefings – even the optimum positioning for a turnoff from the runway. Said Swift: “There’s no point in the aircraft braking to taxi speed halfway to the turnoff.”

Kuwait International Airport took advantage of NATS’ expertise during a recent upgrade. NATS had a team of six engineers in the country to provide specialist advice on the selection, installation and implementation of new navigational aids and landing systems.

The company is also involved in transition planning in Qatar, which involves training for the controllers at the existing ATM operation at the

old airport and advice on the move to Hamad International, the opening of which has been rescheduled to early 2014.

Mindful of Qatar’s hosting of the FIFA World Cup in 2022 and the possible success of Dubai’s bid for the World Expo 2020, Swift sees opportunities for NATS based on its experience with major events, including London 2012 and the 2010 World Cup in South Africa.

Planning ATM in the context of multiple airports, as in the London 2012 work, adds complexity but is not insurmountable. Dealing with a proliferation of airports in the UAE simply calls for close cooperation. If each emirate wanted to manage its own traffic independently, that would be “more concerning”, said Swift.

“There’s an argument that two runways in Dubai, two in Sharjah and two in Ajman is no different to six at Al Maktoum. As long as they’re managed together, it will work okay, but it’s really a case for more consolidation, not fragmentation.

Swift sees more evidence of cooperation in the region than when he first worked here from 2001-6. To him, consolidation is inevitable once people understand the economic benefits and potential obligations of trying to do everything themselves.

One area where he would like to see more fragmentation is in the full separation of ATM service providers from the regulators, in line with

global best practice. “I would argue that if we had full separation with good strong regulation in each state – maybe across state lines as well – it would naturally encourage cross-border conversations and perhaps put different perspective on ATM.

“That could set a different agenda. If we had that environment, I think it would create opportunities for people to have more expansive conversations, instead of thinking along national lines.”

Swift has recently spent time in Libya to help with the country’s post-conflict nation-building efforts. Emerging from 40 years of virtual isolation, the country has a real interest in identifying where it needs to build up institutional capability to play its part on the world stage.

The Libyans responded to a recommendation by the ICAO to establish an ATM audit department. Just before Ramadan, NATS designed and delivered bespoke training to the fledgling department in the UK and remains on standby to provide further training and advice.

On October 1, at ICAO’s meeting in Montreal, Libya was voted on to the ICAO council for the first time.

“The Libyans are very positive,” said Swift, adding: “We’re in a turbulent neighbourhood. NATS sees spikes of activity after things resolve themselves.”

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*Turkish Technic aspires to be one of the world's top five MRO operations by 2020. **Chuck Grieve** meets the man who sees it as a personal challenge to guide his organisation to that rank.*

TECH TO HEART



Turkish Technic is on the move in more ways than one. It is about to open its new MRO base, its third-party workload is on the rise, its workforce is expanding and its ancillary operations are starting to bear fruit. For Dr Ismail Demir, the man who has guided Turkey's main MRO operator since 2006, it's all part of the long-term plan to cement Turkish Technic's position as one of the world's top MROs.

That aspiration is likely to surprise someone outside aviation circles: Turkish Technic maintains a low profile. Those in the industry, however, will know that it has grown organically alongside its base customer, Turkish Airlines (THY), which has been racking up various 'best' awards with its fleet of more than 200 aircraft serving 219 international and 44 domestic airports.

Dr Demir, a 53-year-old aeronautical engineer, has spent six years making the company run more efficiently. Now, however, the time has come to expand.

Turkish Technic separated from THY in 2006, recognising the potential of an independent MRO was greater than that of a similar operation tied to an airline. Although THY remains Turkish Technic's largest customer, that picture is changing. Other customers accounted for about 8% of income in 2006; in 2012, that had grown to about 30%.

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on Page 142



2020 vision:
Dr Ismail Demir.



HABOM: When fully open will have the capacity to handle 11 narrow-body and three wide-body aircraft simultaneously.

CONTINUED FROM PAGE 141

Turkey is not the Gulf, and neither is it Europe. It makes the news for reasons that are not always beneficial to its image or its business interests. But what it does have is stability, boundless energy and drive, and those qualities are what Dr Demir is counting on harnessing to take Turkish Technic forward.

This autumn the company opens its new MRO centre at Sabiha Gokcen International Airport. HABOM, as the facility is called, is one of the world's largest, and when fully open will have the capacity to handle 11 narrow-body and three wide-body aircraft simultaneously.

The development has not been without its setbacks. Dr Demir acknowledges "some unlucky events with our contractors" which delayed finishing the facility with the knock-on effect of forestalling a sales and marketing campaign. That, however, is about to change.

The new centre is opening stage-by-stage, bay-by-bay, over three to four months. "We want to make sure each bay is running and stable," said Dr Demir.

The narrow-body hanger passed its first inspection in August and the first C-check was expected to be carried out as *Arabian Aerospace* was going to press.

The grand plan is to concentrate on third-party business at HABOM, while continuing to carry out THY fleet work at the existing Ataturk International Airport facility. The two airports are about 70km apart and both serve Istanbul – Ataturk from the European side of the Bosphorus Strait and Sabiha Gokcen from the Asian.

The company added to its capabilities at Ataturk with the purchase of a smaller MRO operation, MNG Technic. The opportunity was a fortuitous combination of mutual need: Turkish Technic needed additional capacity when the completion of HABOM was delayed, and MNG

Strength in partnership

Turkish Technic has five key affiliate companies established through joint ventures in the last five years:

Turkish Engine Centre (TEC), established in partnership with Pratt&Whitney to specialise in overhaul and repair of CFM56 and V2500 engines, started operations in 2010.

Goodrich Turkish Technic Service Centre (GTTSC), a joint venture with Goodrich set up for nacelle and thrust reverser maintenance, repair and revisions, began operating in 2011.

Turkbine Turkish Technic Inc, established in 2011 with Zorlu Holding, carries out work on industrial gas turbines and CF6-80 aircraft engines.

Turkish Cabin Interior (TCI) is a joint venture with TAI for the design, production, sales and marketing of cabin interior products. It began operations in 2010 in TAI Ankara facilities and will move to HABOM.

The Aircraft Seat Production Company (TSI), a joint venture with Assan Haniil Automotive, started operations in 2011. It designs, produces and markets economy class and convertible seats for narrow-body aircraft.

needed help after it had overextended itself.

"We hadn't intended to buy a facility like MNG, but when ours was late, it made sense," said Dr Demir.

The former MNG hangar is being reconfigured for lower level, mainly airframe maintenance. "It will create a lower cost maintenance opportunity for customers who want a different level of service," said Dr Demir.

"One customer might need everything checked; another will just want you to stick with the maintenance package. You can serve both customers' needs. The cost base can be different but of course the quality of work will be the same."

Dr Demir does not see the new MRO bases in the Gulf as direct competition to HABOM, which has been in the planning since 2003-4. "I think there is a clear difference in our parameters," he said. "The investment in facilities is just one part of the equation."

There may be surplus hangar space in the region in the short term, but hangar work is just one part of what Turkish Technic offers. Its revenue comes from other sources, including component services and component shops, line maintenance and engineering.

"We're not aiming to create a maintenance base, even at HABOM," he said. "We have 183,000sqm of closed area. Just 60,000sqm of that is hangar. The rest is workshops, offices and related facilities."

"We are investing heavily in the component side of the business. OEMs dominate the aftermarket, so we are looking for joint operations. We prefer to work with OEMs as much as we can."

"We aim to excel in areas including heavy modifications, VIP conversions, part manufacturing, design and development. It's a very wide spectrum."

Dr Demir believes part of Turkish Technic's competitive advantage is its home-grown workforce, which he describes as skilled, young and very well educated. "I can build a strong and experienced workforce. I can start design and turn that design to manufacturing. I can be a partner to OEMs, a vendor to OEMs, and I can create some OEMs myself. So this is my future."

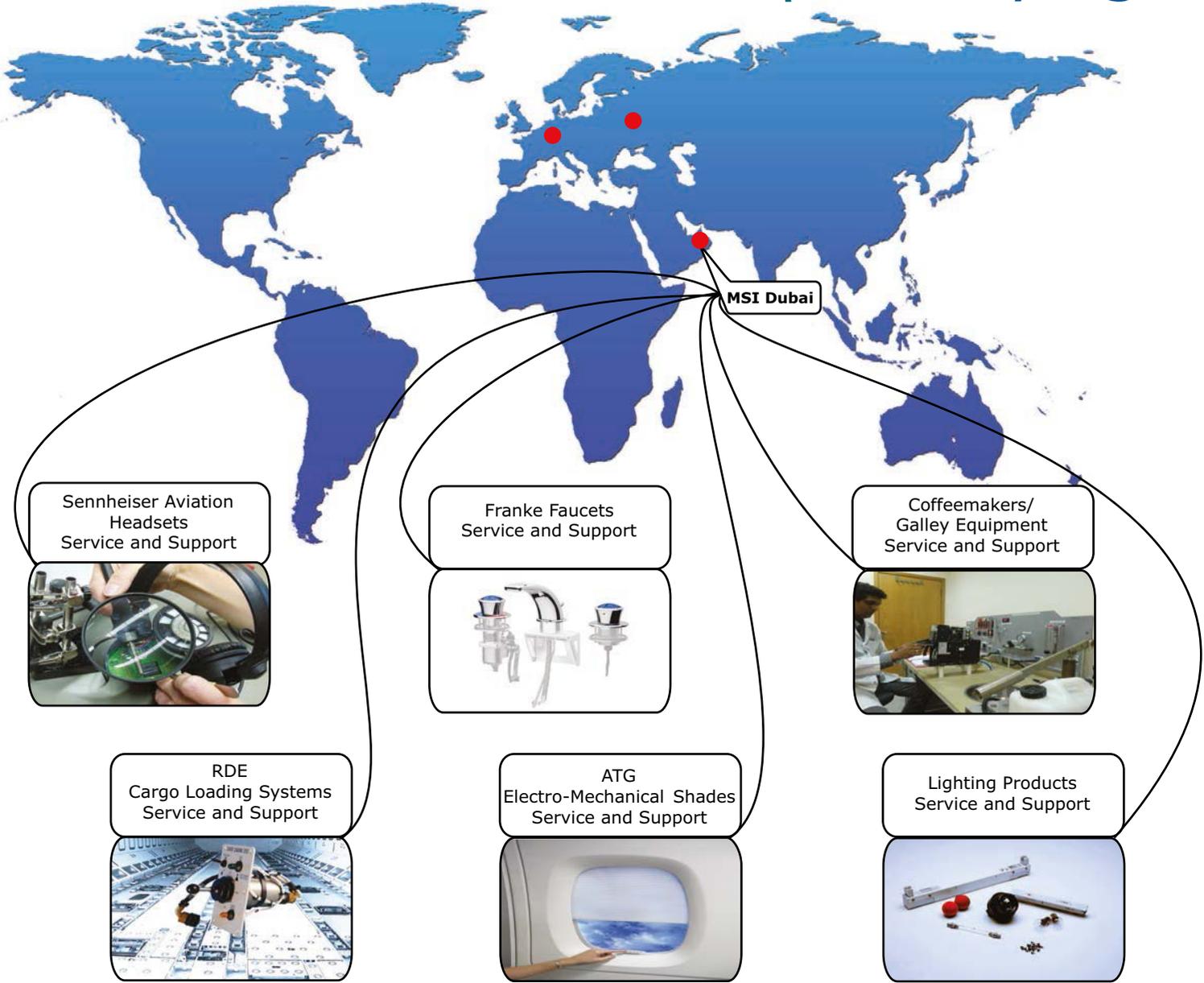
Turkish Technic has already taken steps in that direction with its current five joint ventures with foreign and domestic companies. Interestingly, two of the company's joint venture partners are domestic companies with manufacturing expertise, ideal for the OEM and parts

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manufacturer approval (PMA) aspirations of the company.

Over the last three years, the company has taken on 300 new engineers and 1,400 mechanics. "We're in the middle of a transition in terms of our workforce and facilities," said Dr Demir. "Luckily we have enough base work from our main airline – they're growing fast – which gives us some time to increase our marketing activities."

The low media profile of Turkish aviation has meant that few outside the industry know of the transformation it is undergoing. Dr Demir plans to change that. "When we hit the news more, and with the quality of work that we create, we're going to change the perception and

understanding of Turkish aviation. That will also change our relationship with customers."

Expansion abroad is on the cards, too. In this Turkish Technic is flexible, open to offers and options ranging from acquisition of companies to joint ventures.

The company has described its market as anywhere within three-and-a-half to four hours' flying time from Istanbul. This is mainly for narrow-body aircraft maintenance. However, for component maintenance, the whole world is its market.

Line stations are the natural vehicle for expansion abroad; Turkish Technic approaches it with a collaborative spirit. It rationalises that having a facility that will help THY will help

others too. "It can be very hard to find qualified support," noted Dr Demir, "and if you can put that support in place, it's very valuable."

Unfortunately Turkey does not feel a similar generosity of spirit coming from Europe. "We've had some bitter experiences with EASA," said Dr Demir. "In our opinion, there are some unfair approaches by EASA against our line stations."

He cited the case of being forced to close a line maintenance base in Europe after an EASA finding against Turkish Technic for not having a B2 Licensed engineer stationed there.

"However, we know that our close friends in Europe don't have a B2 mechanic in many of their line stations either. If they need a B2, they can send one there. So can I, but this is not enough for EASA.

"We raised this issue with EASA. They said dealing with non-EU countries is the local [country] authority's business. It could be a problem of coordination or standardisation, but not their business.

"These kinds of conditions are there. We know we face this kind of attitude. But we're still going to push for our line stations' presence in the world with the right and correct amount of workforce, skills and tools.

"Having line stations is the start. After that, if there are requests for different technical support or joint activity, we will study them. As I said, we are flexible. We look for a synergy."

Star status

Dr Demir is not unduly worried that Turkey's aviation industry lacks the 'star status' of some of the Gulf-based operations. He is confident that Turkey's time will come. The country has capabilities of which people outside the aviation industry are not aware; aviation clusters whose companies are producing parts for manufacturers including Airbus, Boeing, Sikorsky and Goodrich. Turkey is developing its own projects as well, and may one day assemble complete aircraft, but this is beyond the remit of Turkish Technic.

"Turkish Technic limits its activities to creating and growing capabilities and skills," said Dr Demir. "Our role is not to become an aircraft manufacturer, nor to be an OEM ourselves. We prefer to work in a joint venture format."

The company's strategy is to focus on the MRO industry, but that does not preclude going off on a tangent via a joint venture where there is a synergy. Dr Demir cites Turkish Technic's partnership with Assan Hanel Automotive, a company with extensive experience in automobile interiors and seats. "They have the manufacturing capability but lack experience of aviation. We add our skills and relations with OEMs. With that we create a company."

He is adamant that Turkish Technic is not "running after manufacturing and design"; to do so would cause a loss of concentration and ultimately hurt the mainstream business. However,

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Campaigning for cultural change

Turkish Technic has launched an occupational health and safety project to counter the public attitudes to risk that tend to be less rigorous than what is required on an industrial site.

The company's ground-breaking internal communications campaign – *One for all and all for one* – turns employees into informal labour safety inspectors by enhancing their awareness of risks and the consequences of unsafe practices.

The three-phase campaign is backed by posters, featuring employees, that drum home the message of personal responsibility for staying safe at work. The posters were rolled out at Ataturk airport, with displays at the company's hangars in HABOM and Ankara Esenbo a airports to follow.

The aim is to keep the message of safety front and centre in the hope that it will become part of employees' personal lives as well.

"This is a culture change issue and one of our priorities," said Dr Demir, "especially with our new facility. We want that new facility to be seen as a different place by employees, employers, customers, everybody – to have a different atmosphere."

The company has created internal reporting mechanisms that encourage even the smallest incident to be recorded. "We're glad that the number

of reports is increasing," said Dr Demir, "because that means people really understand what we're after. People can see there's something in it for them, that safety is their problem; that it's their friend's life they could be saving."

"Recently I saw an accident report. An office worker playing with a piece of paper injured his eye. That's reported to everybody.

"In our former culture, nobody would have bothered to report it; now it is an incident. That's how I want to create a change of culture."

Safety is one part of the Turkish Technic's all-embracing approach to the environment. The company hopes it will set an example there and in environmental planning. Its new Turkish Engine Centre (TEC) facility was the first building in Turkey to receive gold certification in the leadership in energy and environmental design (LEED). The company has gold in its sights for its new HABOM facility as well.

These may be small steps but they are noted by perhaps the most important audience, employees' children. "When they say their parents work at Turkish Technic, it means something other than aviation. They're proud for other reasons – for safety and environmental consciousness."

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he is not blind to the limitations of the MRO business model – “turning wrenches, disassembling and assembling things and repairing airframes” – and the need to find innovative value added services. New materials being used in next generation aircraft have different characteristics that will demand advanced monitoring capabilities.

The opening of Turkish Technic’s own R&D centre in last November gave the company the chance to start working on its own innovative airframe and engine health monitoring solutions. The objective, said Dr Demir, is to develop active monitoring systems that can anticipate problems. The company is investing in R&D to capture enough data to ‘crunch’ to create a good decision-making mechanism.

Other projects, some being run in conjunction with Turkish universities, cover development of IT, engine part and component repairs, engine wash techniques and equipment. Many of them involve searching for a better method, version or tool.

Turkish Technic has its eye on the conversion, modification and VIP finishing business. The freighter conversion market, said Dr Demir, is “a little troublesome” right now, but other cabin interiors, VIP modifications and completions are a growth area.

“We’ll definitely be going into that business,” said Dr Demir. With the recent experience of refurbishing a Gulfstream GIV for the Turkish



Turkish Technic employees were captured on film by award-winning photographer Niko Guido for a project and exhibition with the theme ‘In the expectation that you fly securely...’ Guido, who has made his name in social responsibility projects, set out to reflect the knowledge, love, self-confidence and reliability in the faces of Turkish Technic employees.

Government, in conjunction with 328 of Germany, he believes the company can develop its own supplemental type certificates (STC) capability.

Dr Demir said the company aims to have a wide-body VIP conversion centre soon. “We believe there’s a business in that,” he added.

A consequence of developing extensive capability for its THY base customer is an extensive parts and components inventory. Dr Demir considers it too much for a MRO alone and is proposing to share it. “We can open up that inventory to other airlines and ask them to open up their inventory to us,” he said. “That way it can be visible to everybody.

“We’re going to offer a programme for

airlines, many in the Middle East, that think the same as us. Nobody wants to get into an aircraft on the ground (AOG) situation for lack of parts, but it can be too big an investment.”

He believes there will be interest among some Middle East and African operations for such a programme, and is putting out feelers through his inventory and logistics managers before opening discussions at the CEO level.

“It’s the logical way to go,” he said. “What’s wrong with having my inventory list seen by other airline partners?”

“If I have a component they need, why shouldn’t I send it? If they want to replace it later, that’s okay.”

Related to the inventory programme is aircraft part out work. Turkish Technic has some experience of dealing in older aircraft, having bought in examples for repair and sale as well as for disassembly. Dr Demir observes that the trend to retiring aircraft younger means components that are “not in bad shape” can be stripped out and used or sold.

Fully EU compliant

Despite remaining outside the EU, Turkey behaves in many ways like a member, by following EU regulations and requirements, for example. Its civil aviation authority adopts EU rules line by line, which gives Dr Demir the confidence to say Turkish Technic “is fully EU compliant”.

“That means we’re up to a certain standard. It’s better for us. We’re organising our own house.”

Turkey’s ambition is to be among top 10 world economies by 2023, a challenging target when economic analysts predict it will rank 13th.

Equally challenging, Turkish Technic wants to be among the world’s top five MROs by 2020.

Dr Demir defines the top five like this: “If somebody in the aviation sector was asked to name the MROs he knows, Turkish Technic would be one of them. I want us to be one of the five MROs that he knows, trusts or has business with and recommends to others.

“This is our target. We want it to happen. We hope we’re on the right road.”

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Airbus lands the solution to runway excursions

Runway excursion has been an issue many manufacturing companies have tried to tackle with their new technological innovations. Now Airbus thinks it has cracked the problem.

After years of research, the company this summer received EASA certification on A320ceo family aircraft for its solution – the runway overrun prevention system (ROPS).

The system is designed to monitor total energy and aircraft landing performance versus runway end, from short final up to aircraft stop.

Yannick Malinge, Airbus's senior vice president and chief product safety officer, said: "The on-board cockpit technology increases pilots' situational awareness during landing, reduces exposure to runway excursion risk in wet and dry conditions, and if necessary, provides active protection."

If the system predicts a runway overrun occurrence, a visual warning is given to the pilot, along with a repeated aural alert stating: "Runway too short."

American Airlines selected ROPS in March this year to equip its A320 family fleet.

The EASA certification of ROPS on the A320ceo is the next step in making it available for line-fit and retrofit to other Airbus models, including the A320ceo with sharklets, the A330 family, and also the A320neo.

It was first approved by EASA on the A380 in October 2009 and to date is currently in service or ordered on most of the A380 fleet. ROPS is also part of the A350 XWB's basic configuration.

"ROPS is the result of years of continuing research by Airbus. This initial EASA certification for ROPS on the A320 family is an important new step to offering the enhanced safety benefits across all our aircraft and for the industry," said Malinge.

Airbus said that runway excursion has become the primary cause of civil airliner hull losses in recent years, particularly as other formerly prevalent categories of aircraft accidents have now largely been eliminated.

Various industry bodies including EASA, NTSB, Eurocontrol and FAA, recognise this and are fully behind the introduction of effective measures by commercial aviation stakeholders to not only mitigate, but also eliminate the risk of runway excursions.

Airbus is now working to make ROPS commercially available for aircraft from other manufacturers.

The system will be coupled to the mandatory terrain

Runway excursion – either an aircraft veering off the side of the runway or overrunning at the very end – is one of the biggest causes of aviation accidents.

Marcelle Nethersole
reports on new technology that could make landing safer.

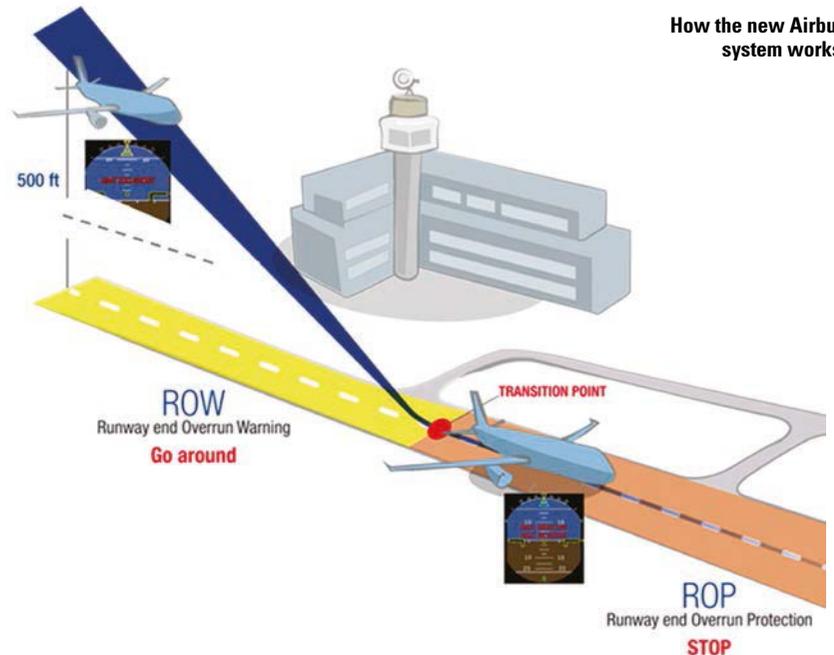
avoidance warning system already fitted and will utilise an enhanced and specially developed version of its worldwide runway database.

The Airbus-patented ROPS computes minimum realistic in-flight landing and on-ground stopping distances, while comparing them to available landing distances in real time. The analyses take into account factors such as runway topography, runway condition, aircraft weight and configuration, wind and temperature.

The resulting outcome produces audio callouts and alerts for pilots, making ROPS an awareness tool to assist the crew in the go-around decision-making process and also the timely application of retardation/stopping means on touchdown.

To regularly enhance the A320 family's capabilities and performance, Airbus invests approximately 300 million Euros (\$408 million) annually in keeping the aircraft highly competitive and efficient.

More than 9,600 A320 family aircraft have been ordered and over 5,600 delivered to operators worldwide.



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The hunger to save lives

Every few seconds a child dies of hunger – the world’s most solvable problem. Liz Moscrop reports on how the United Nations’ World Food Programme aviation division is attempting to stem the flow.

The last part of the year is a joyful time for different cultures all over the world. Families gather together at Eid or at Christmas to celebrate, laugh and eat together. Indeed, for most of us it is a time when there is far too much food in the house, and we end up throwing leftovers away.

Contrast this with the harsh reality that is life for one in eight people, who go to bed hungry every night. Starved of the right nutrition, people will die from common infections like measles or diarrhoea. Today an estimated 146 million children in developing countries are wasting away.

And the terrible truth is that there is enough food in the world today for all of us to have the nourishment necessary for a healthy and productive life.

Given that key causes of hunger are natural disasters, conflict, poverty, and poor infrastructure,

it is incredibly difficult to distribute food where it is most needed. This is where the United Nations’ World Food Programme’s (WFP) aviation division steps up.

WFP manages the biggest logistics operation in the world. According to Captain Samir of the UN Humanitarian Air Services (UNHAS), which supports the WFP, the organisation ships 500 million metric tons of aid every month to 27 million people in remote and inhospitable locations.

It looks after 30 ships, 100 aircraft and 3,000 trucks, not to mention countless elephants and human beings and it relies solely on voluntary donations.

Speaking at the Global Humanitarian Aviation Conference (GHAC) in Marrakech this October he said: “We travel thousands of miles by every means



Hungry children in front of a World Food Programme truck. Centre and above: Delivery by road and by air.

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possible to reach our destinations. We build airstrips and rebuild bridges that have been destroyed. We de-mine booby-trapped roads and reconstruct railway supports. Nothing stops us delivering food. We airlift tractors and will push aircraft manually on to strips.”

Wherever there is a natural disaster, WFP comes to the rescue. Samir added: “We fly to rough and hostile terrain into some of the world’s most inaccessible and dangerous spots. This brings relief to those who need it most. Every second that goes by means the difference between life and death. Our success is not measured by cost reduction, or tonnes moved, but by lives saved.”

Although flying food and aid to those that need it sounds like a simple solution, it is not easy. UNHAS has no aircraft of its own and has to be accountable to all those who donate.

Samir explained that finding companies willing to charter their aircraft and fly to dangerous places, often with poor infrastructure, is a challenge.

Right crew

It is also a challenge to find the right crew. Pilots have to be highly skilled and experienced, and have the right kind of temperament to work in such environments. He said: “We monitor the pilots very carefully. If we feel they are not happy doing the work, we ask for a different person. We have found that many stay because they find it so rewarding. They are helping to save lives. They could find the same kind of pay, but working in much easier conditions, but they stay.”

Given the need for such challenging flying, a key focus of the GHAC gathering was safety. The event drew a large crowd of pilots, operators and potential operators to share their thoughts on safety.

Peter N Stein, of the Flight Safety Foundation, spoke of the need for professionalism, fatigue management and pilot recruitment. He said: “In remote locations there is not much support readily available, which puts a burden on everyone involved – flight crews, dispatchers and engineers.”

Natural disasters don’t tend to happen in ideal flying conditions and ICAO’s Mitch Fox pointed out: “In the situation where you have loss of control in flight (LOC-I) almost everyone dies. They are the least common kind of accident but the most high risk.”

To that end ICAO has created the global aviation safety plan (GASP). In addition to assessing how to combat LOC-I, the plan also aims to tackle controlled flight into terrain (CFIT) and runway safety-related events – excursions or incursions. He noted that the last could be of particular interest to pilots flying into fields where wild animals might wander on to the runway.

Finding companies willing to charter their aircraft and fly to dangerous places, often with poor infrastructure, is a challenge.

Five unpalatable facts

- **42 million people in the world do not have enough to eat. This number has fallen by 156 million since 1990.**
- **The vast majority of hungry people (827 million) live in developing countries, where 14.3% of the population is undernourished.**
- **Poor nutrition causes nearly half (45%) of deaths in children under five – 3.1 million children each year.**
- **66 million primary school-age children attend classes hungry across the developing world, with 23 million in Africa alone.**
- **WFP calculates that US\$3.2 billion is needed per year to reach all 66 million hungry school-age children.**

To implement GASP, Fox says his organisation is taking a multidisciplinary approach and conducting seminars in all ICAO regions. It has also established runway safety teams, and plans future workshops.

He added that 95% of unestablished approaches result in a safe landing, whereas more go-arounds lead to LOC-I events. He asked: “What should be our approach to that situation? Accidents occur when a flight crewmember initiates a normal go-around. Are we then increasing risk by encouraging go-arounds?”

ICAO is looking at providing new training requirements and guidance material for commercial pilot’s licence and multi-crew pilot licence courses. Fox would also like to see more upset prevention and recovery training. He pointed to the difficult decisions UNHAS pilots have to take, and said: “The UN has to balance the risk of meeting needs with a flight against the risk of losing life on a large scale.”

A critical area in flight safety is human factors and the conference tackled the subject on day one. Stein said that the requisite core process, when assessing an accident and making recommendations to stop it happening again, is to: “Investigate, analyse and advise.” He pointed out that eyewitness accounts can be the most unreliable source of data and that many investigations are hampered by people’s own unconscious personal bias.

Thomas Anthony and retired navy F-18 pilot Captain Chris Nutter, of the Flight Safety Foundation of the University of Southern California, have developed the IHTAR (I have the aircraft and radios you’ve got everything else) decision-making process. Anthony said: “This is highly applicable to WFP as it deals with the ‘Startle Effect’ – anything that can absorb the pilots’ attention and reduce situational awareness.”

He cited the Air France 447 accident of June 1

2009, saying “a temporary inconsistency between instruments led to a lack of focus on other factors in the cockpit. This led to unusual and unexpected developments during the flight.”

He said that the crew could better deal with such anomalous circumstances by using the IHTAR process, which ensures that operating the aircraft safely is the first priority. The system clearly assigns roles and maintains the authority of the captain. The pilot flying maintains focus on the aircraft state, while communicating with air traffic controllers. Anthony said: “This avoids two hazards down the downward spiral. You make ATC part of the solution.”

This then leads to HITS (Here’s the way I see it what do you think?). This directly builds on crew resource management and continues the crew communications process. Anthony continued: “This establishes a common basis of understanding and seeks a second view, creating the environment for the next step.”

The next step is WAYFi (What are you finding?). Anthony said: “This maintains overall situational awareness and each pilot performs a monitoring function for the other. It avoids task over-concentration, which causes us to miss other important information.”

Human reaction

The process aims to tackle the natural human reaction to concentrate excessively in emergency situations, which causes the famous “fight or flight” response. Physiologically this is increased heart rate, tunnel vision and auditory exclusion, which may explain why pilots seem to have ignored aircraft verbal warnings in critical situations when listening to the black box afterwards. Anthony urged: “It’s time we teach pilots about stress, stress response behaviour and performance under stress.”

Dr Nicklas Dahlstrom, human factors and crew resource management (CRM) researcher and instructor for Emirates agreed. He said: “Improved safety procedures and better technology have led to safer aviation but there is a limit to how much we can use procedures. There is a limit to predictability. We need to train resilience decision-making back into pilots.”

GHAC took place the day after the Middle East Business Aviation Conference (MEBAC) and was deliberately scheduled that way. Chairman Ali Al Naqbi said that his association has created the ‘fly and feed’ programme, full details of which will be released at the Dubai Airshow – essentially charter flights will donate a small amount to WFP.

The mood in the conference was positive, fuelled by Samir, who constantly reminded the audience why it was there. He concluded: “In developing countries a third of all child deaths are linked to hunger. It costs less than a dollar a day to give a child all the nutrients needed to grow up healthily.”

- **To donate to WFP go to <https://www.wfp.org/donate/UNHAS>**

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DUBAI'S BIG MOVE

*As the aviation world gathers in Dubai this month for the 13th edition of its biennial airshow, **Chuck Grieve** looks forward to an event that promises to be the biggest and best yet.*

Dubai 2013 opens on November 17 in a new home boasting more features, space and exhibitors than ever before in its 26-year history.

It continues to support a regional aviation industry that consistently outperforms the world average.

Show organiser Fairs & Exhibitions (F&E) was predicting up to 60,000 visitors and more than 1,000 exhibitors at the new purpose-built Jebel Ali site.

As *Arabian Aerospace* went to press, 46 countries were represented among exhibitors. A huge UAE presence included local companies, joint ventures, agencies and representative offices.

The USA accounted for the largest international bloc of exhibitors, followed

by the UK, Germany and France. Others with notable representation included Russia, Canada and China.

Saudi Arabia, Pakistan and Jordan were dominant among those from the region.

Sharief Fahmy, recently appointed chief executive of F&E, said the 13th edition of the show was coming at "an exciting time" for aviation in the Gulf and Middle East. On the civil side, fleet expansion is the focus globally, while the declining military market is driving intense competition.

The Middle East continues to perform strongly. Airbus, in its latest Global Market Forecast, predicts an annual growth rate of 6.4% in air traffic for the Middle East region during the next 20 years. This increase is well above the forecast for the

global traffic at 4.7% per annum.

Boeing, meanwhile, notes in its current market outlook that growth of Middle Eastern aviation continues to outpace the global average, mainly on the back of fleet expansion. Boeing predicts a total market of 2,610 new aircraft in the Middle East between now and 2032. Less than half of these will be replacements as the fleet grows from 1,140 aircraft in 2012 to 2,850 in 2032.

The region's potential is not lost on any of the top airframers, who will be in Dubai seeking to impress, while on the military side, the dogfight between the Eurofighter Typhoon and Dassault Rafale for a plum UAE order looks set to dominate.

Continued
on Page 156

The new Dubai Airshow venue has more than doubled the show's exhibition space to 645,000sqm, and will accommodate more than 1,000 exhibitors and up to 60,000 visitors.



A grandstand view for enthusiasts

A dedicated event for non-trade aviation enthusiasts and families will run alongside the Dubai Airshow.

Called Skyview, it has been designed to take advantage of the show's entertainment potential by giving the public a grandstand view of the flying display and a special programme near but separate from the trade show.

"The move to our new venue has given us the opportunity to build a special area for the public," said Sharief Fahmy, chief executive of organiser F&E Aerospace. "We're putting

together a special programme that will give spectators something to remember both on the ground and in the sky."

Skyview is Dubai's solution to the problem of public demand for access to the exhibition halls and static aircraft park that is common to all aerospace trade shows.

It features a 6,000-seat grandstand for the main attraction – the flying display – and an entertainment programme combining educational value with interactive fun. The daily appearance at Skyview of display pilots is expected to be a popular feature.

CONTINUED FROM PAGE 155

This year, the aircraft will be competing for attention with the sparkling new Dubai airshow facilities.

The new show site is part of a Dh120 billion (\$33 billion) investment in the Dubai World Central (DWC) aviation cluster that includes Al Maktoum International Airport.

Spread across 140sqkm of land in Jebel Ali, DWC opened with cargo operations in June 2010; business aviation operations started in early 2013 and commercial passenger operations, with European low-cost carrier Wizz Air and Saudi Arabia's Nas Air, expected to follow as *Arabian Aerospace* was going to press.

Explaining the show's move from its former home at Dubai International Airport, Fahmy cited commercial and logistical considerations.

Dubai International Airport, the world's fourth busiest, could not relinquish enough time slots for the flying display or enough parking bays for the static displays. The new site has neither of those constraints, plus the space to expand.

Regular Dubai airshow visitors may experience a sense of déjà vu about the new venue. That's because permanent structures at the old site, Airport Expo, were deconstructed, moved and rebuilt at DWC.

Toni Sleiman, head of construction at



Dubai Aviation Engineering Projects (DAEP), told *Construction Week* that the plans for the 76,800sqm built-up area of the airshow fit the original tightly, although the 20 metre-high exhibition hall has undergone a slight alteration: instead of three separate halls, it is now one big open hall measuring 272m x 235m. "We increased the volume but used the steel from the old buildings," he said.

The new Dubai Airshow venue is notable for a number of other reasons. It has more than doubled the show's

exhibition space to 645,000sqm, and will accommodate more than 1,000 exhibitors and up to 60,000 visitors.

It has more static park space and fewer flying restrictions. And show-goers will appreciate three times more parking space than at the old site, plus improved catering facilities.

New events in 2013 include a conference on environmental issues relevant to aviation, such as the use of biofuels, reduction of emissions and carbon trading.

Organisers expect airlines, airports, authorities and the industry – even the Dubai Airshow itself – will use the conference as an opportunity to highlight their 'green' credentials.

The conference will be supported by a dedicated 'green' exhibition space.

The last day of the show has been designated 'futures day' and is dedicated to the next generation of aviation professionals.

It builds on the success of the first futures day at the 2011 show by providing an opportunity for academics and students to learn directly from industry about opportunities in the sector, and to see advanced technology demonstrated.

A careers fair will be held alongside futures day.

"Our objective is to inspire young Emiratis to

The last day of the show has been designated 'futures day' and is dedicated to the next generation of aviation professionals.

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| 6. VHF, UHF | |



Engr. Abdullah Y. Beshawri has a vast experience in the field of Flight Inspection Services. He served GACA for almost 32 Years, And supervised several projects in Air Navigation Services. He headed the GACA Flight Inspection Operation and lately supervising SAMANA SPECIAL MISSION Flight Inspection Services as Project Manager.

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consider a future in the aerospace industry," said a spokesman.

Also taking place before the show is the airline chiefs' conference, organised by F&E in cooperation with the Arab Air Carriers Organisations (AACO). The event gives invited participants from a wide cross-section of the industry the chance to debate current and future challenges.

Civil aircraft manufacturers see huge potential in the Middle East. Airbus, Boeing, Bombardier, Embraer and ATR, among others, will be at the show hoping to convert interest in their aircraft into firm orders.

Airbus likes to stage a crowd-pleasing performance and tight manoeuvres performed by airliners, especially its superjumbo A380, never fail to impress. At Paris 2013, Airbus had the first A380 in British Airways livery in the daily flying display.

Will Dubai 2013 see the first A380 in Qatar Airways colours in a similar role? It would be a fitting gesture: the airline placed its original A380 order at the Dubai Airshow of 2004.

Maiden flight

The Qatari carrier is also one of the first customers for the new Airbus A350 XWB, which made its maiden flight last June.

It would be a major coup for the show if the A350 were to put in an appearance. Reports suggest the twinjet is scheduled to fly out of Europe for the first time in November.

Boeing's Jeff Johnson, president, Middle East, is optimistic for a successful airshow.

Boeing has traditionally had a strong presence at the show, he said, and is "committed" to supporting the development of regional aerospace infrastructure and capabilities. Boeing has taken orders for 277 aircraft from the UAE alone since 1977.

In the run-up to the show, Boeing was keeping industry watchers in suspense over the identity of the launch customer for its re-engined and re-engineered 777X.

**Focus on relief operations**

The role of aviation in humanitarian relief will be highlighted and encouraged in a dedicated pavilion at this year's show.

The pavilion will provide a showcase for Care by Air, the UN World Food Programme (WFP) and other charitable organisations, air operators and supporters. The Dubai Airshow has supported WFP since 2005.

Care by Air is a non-profit initiative founded in 2009 to provide at-cost transportation and logistics support for humanitarian causes. It is led by Emirates Airline, Etihad Airways, Maximus Air, Aramex and Abu Dhabi Airports Company.

By exhibiting at the show, Care by Air hopes to demonstrate how the industry can give back to society, said corporate social responsibility manager Lama Awwad. "The goal of Care by Air is simple: to reduce the cost of logistics for humanitarian organisations. It is based on the principle of making better use of empty air cargo space to carry qualifying humanitarian aid either for free or at cost."

More than 100 aircraft are operated on behalf of WFP by registered carriers, transporting in excess of 300,000 passengers and 200,000 tonnes of cargo every year.

Then, on September 19, Lufthansa confirmed an order for 34 of the 777-9X version. Speculation had rested on whether Emirates might be looking to duplicate its roaring start to the 2011 Dubai Airshow when it announced a record \$18 billion order for 50 Boeing 777s.

Emirates chief commercial officer, Thierry Antinori, intimated to Reuters that his airline would be announcing a big order of the 777X at the show to help it achieve ambitions to expand services to the US from the present seven direct flights to 15.

"I expect us to order planes at the airshow," he said. Referring to an absence of announcements from Emirates at the Paris show, he added: "At Emirates we are not used to having two airshows in a row without ordering anything."

Making the news

Also making the news in the months before the show was Bombardier's innovative super-efficient CSeries narrow-body airliner, which recorded its first flight on September 17.

The Canadian manufacturer will be looking to add to orders for the 100-149-seat airliner in Dubai. Gulf Air has already placed 10 firm orders and six options for the CS100 version.

South American competitor Embraer is at the airshow to explore opportunities for both its E-Jet and ERJ series.

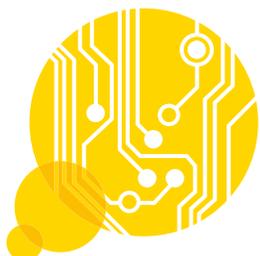
Embraer aircraft are already embedded in the commercial fleets in Saudi Arabia, Jordan, Oman, Egypt and the UAE.

The company sees a strategic function for its 70-120-seat E-jets in helping airlines "maintain their competitive edge".

Turboprop manufacturer ATR has a new model of its well-known family of narrow-body aircraft to introduce to Dubai show-goers.

The company says its new generation ATR 72-600 is being introduced in response to market demand. It will feature increased payload, giving the aircraft

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CONTINUED FROM PAGE 158

improved economics in terms of operational range.

Mitsubishi of Japan and United Aircraft Corporation (UAC) of Russia are also exhibiting. UAC's Sukhoi Superjet 100 (formerly the Russian Regional Jet) is already in service; the MRJ is scheduled for first flight in 2015.

In the military arena, all eyes will be on the two contenders for the important UAE order to replace up to 60 of its aging Mirage fleet.

Eurofighter Typhoon hopes are high for a win. With the Saudi Arabia and Oman air forces already on board with the advanced fighter, the Typhoon consortium, led by BAE Systems, has everything to play for in the UAE.

Second thoughts

Dassault had looked certain to win that order with its Rafale, beating Eurofighter as it did in India last year, until the UAE had second thoughts about the financing arrangements and re-opened the contest. A decision is expected next year.

Peter Anstiss of BAE Systems was quoted at the time of the Paris Airshow as saying the company has particularly high hopes for sales in the Gulf. Apart from the Saudi and Omani deals, he said there was "potential for 150 aircraft in the Typhoon class", specifically in Kuwait, Qatar and the UAE.

Another exhibitor with a compelling story to tell is Turkish Aerospace Industries (TAI).

Its Hurkus 350 basic trainer – designed and manufactured by TAI – made its first flight on September 1.

The aircraft is targeted primarily at

The Rafale will take on the Typhoon for a massive UAE order.



Sukhoi Superjet 100 (formerly the Russian Regional Jet) is already in service.

Turkey's armed forces, but TAI will be promoting it to the military throughout the region for the light attack/armed reconnaissance role.

Show-goers can expect the business aviation sector to be strongly represented. Manufacturers Bombardier, Gulfstream, Dassault and Beechcraft are notable among exhibitors in a region with a growing appetite for executive jet travel.

The Middle East is an important market for rotary-wing makers in passenger, utility and military applications.

Helicopter manufacturers exhibiting include AgustaWestland, Bell Textron, Sikorsky and Eurocopter, which has just delivered two custom-configured examples of its AS332L Super Puma to Starlite Aviation for operations in the Middle East.

Rebuild capabilities

Promoting expertise of a different kind is the Pakistan Aeronautical Complex. As well as representing Pakistan's JF-17 fighter jet and a range of UAVs, it is promoting 'rebuild' capabilities with its F-6, Mirage and Aircraft Rebuild factories in Kamra Aviation City, Punjab.

Aviation Industries of China (AVIC), meanwhile, will be out in force with its asset management, engine, R&D, avionics, defence, flight test, general aviation, helicopter, trade and logistics, and transport aircraft divisions represented.

The company's presence at the head of a strong Chinese contingent, which includes the China National Aero Technology Import and Export Corporation (CATIC), may have added significance in light of last summer's conclusion of a new aviation agreement between the UAE and China, which allows more passenger and combination services to a number of important Chinese destinations.

Among global leaders in MRO exhibiting at Dubai 2013, Lufthansa Technik is presenting a number of innovative products, including the high definition-enabled next generation of the 'nice' IFE and cabin management system and the 'niceview' moving map system.

Other cabin and IFE products showcased in Dubai include the 'aerosight' cabin surveillance camera system and the HelioJet LED lighting system, which illuminates cabins in a homogenous and energy-efficient manner.

Lufthansa Technik's non-electric floor path marking system Guideline ColourFit is once more in the spotlight, now also an option for factory-new Boeing 777s.

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Boeing will seek to use this month's Dubai Airshow as an opportunity to increase further its growing trade in defence exports. Alan Dron reports.

Twin targets aid Boeing's growth

Five years ago, just 7% of Boeing Defense, Space & Security's (BDS) income came from exports. That figure is today above 25% and is expected to climb beyond 30% shortly.

This increased revenue will come mainly from two regions, Asia-Pacific and the Middle East.

In pre-show briefings, Boeing officials reeled off a list of equipment in which Middle Eastern nations are showing interest – everything from mini-unmanned aerial systems to using the P-8 Poseidon maritime patrol aircraft in an airborne command and control role. (Two Gulf Cooperation Council nations are said to be looking at this military derivative of the Boeing 737.)

This interest in a new round of military purchases is partly due to the perpetually tense political situation in the region and partly to the states of the Arabian Gulf becoming increasingly outward-looking.

Remain nervous

Arab states remain nervous, both of the intentions of Iran on the eastern side of the Gulf and of risks closer to home, such as unrest in Yemen, where Al Qaeda in the Arabian Peninsula continues to pose a threat to the government in Sana'a and wider afield.

This has led Saudi Arabia, for example, to devote more defence resources to the border with its unsettled southern neighbour.

Meanwhile, countries such as Qatar and the UAE have increasingly been expanding their presence internationally, through means such as the use of their Boeing C-17 Globemaster III military cargo aircraft to deliver humanitarian supplies to the scenes of natural disasters and to support international police

actions, such as the toppling of Libyan dictator Muammar Gaddafi.

At the time of writing, the range of Boeing military aircraft due to be present at the show had not been decided, but three helicopters, the CH-47 Chinook, AH-6i 'Little Bird' and AH-64 Apache were definitely due to appear.

An MV-22 Osprey may also be present, but this will depend on the presence nearby of a suitably-equipped US Navy warship carrying the tilt-rotor machine.

Boeing has had significant numbers of helicopters in service in the Gulf for some years and in June announced a 50-50 joint venture with Sikorsky to compete for sustainment services in support of Saudi Arabia's rotorcraft fleet.

"Our two companies have a demonstrated track record of successfully teaming with each other," said Peri Widener, vice president of Boeing Rotorcraft Support and chairman of Boeing Sikorsky International Services (BSIS).

BSIS will offer in-country logistics, fleet and supply-chain management,

maintenance support and aircraft modifications, as well as training for aircrews and maintainers.

Contracts won will be administered through the US Government's foreign military sales process and are aimed at helping Riyadh diversify the nation's economy, transfer skills to its aerospace and commercial sectors, and create jobs.

In the immediate future, meanwhile, BDS's target of 30% of its revenue coming from exports is being helped by Saudi Arabia's order for 84 F-15SA (Saudi Advanced) variants of the Strike Eagle. This will keep the company's St Louis production line humming until 2018.

Intriguing customers

Beyond the Gulf, Boeing is in the frame to provide military aircraft to two intriguing customers. Libya has indicated it is interested in buying CH-47 Chinooks (the North African nation has previously operated a small fleet of early-model Italian licence-built variants), while Algeria has shifted its attention from its usual arms supplier, Russia, and expressed interest in both the C-17 and air-to-air refuelling aircraft.

Continuing civil unrest in Libya may hinder approvals for military aircraft in the near future. However, Boeing is treating the Algerian request seriously and officials have travelled to Algiers at least three times in recent months for discussions. The US company's announcement two months ago that it will be ceasing C-17 production in 2015 gives Algeria a tight deadline if it decides it definitely wants the heavy airlifter.

Boeing intends to produce around 20 more copies of the C-17, of which 13 were unsold and available at the time of writing.

This interest in a new round of military purchases is partly due to the perpetually tense political situation in the region and partly to the states of the Arabian Gulf becoming increasingly outward-looking.



Watch this space, as they say.

Meanwhile, the civil side of the US aerospace giant is already in a strong position in the region's marketplace. The Boeing 777 has become the long-haul airliner of choice with several of the Gulf's major carriers – particularly Emirates Airline, which has ordered close to 200 examples of different variants over the years and is the world's largest operator of the type.

Boeing's vice-president sales for the Middle East, Russia and Central Asia, Marty Bentrott, stressed the importance of the Middle East market – and particularly Emirates – to the forthcoming 777X.

"We have been actively engaged with Emirates in the next-generation 777 and as the largest 777 customer they deserve our focus and attention.

"From our standpoint, this family of aircraft needs to be effective for Emirates and their business plan because they have a 777 replacement cycle starting towards the end of this decade and they expect us to be able to provide them with an airframe that's more energy-efficient than today's 777. For the last two-and-a-half years we've been actively engaged and actively encouraged to move forward with this programme."

He added that some news on customers and commitments for the forthcoming Boeing 777X would likely be forthcoming prior to the show. The very next day, Lufthansa announced it was ordering 34 examples of the 777-9X, even before Boeing had formally launched the sales drive for the aircraft.

The German flag-carrier, arguably the most powerful full-service airline in Europe through its control of Austrian, Swiss, Germanwings and Brussels Airline, wants the new 777-9X primarily to replace its fleet of 22 ageing Boeing 747-400s. Lufthansa says it is seeking deliveries of the new aircraft "as soon as possible", hopefully in 2020.

Number of customers

However, Bentrott pointed out that Boeing "likes to have a number of customers when we launch a programme". While the US airframer makes a point of saying it does not schedule orders to coincide with major airshows, it would be unusual if there were not further news of the programme's progress in Dubai.

One reason Boeing remains so confident of the Middle East region as a source of sales is the continuing boom in its economies. This is being reflected in

Two Gulf nations are said to be interested in buying the Boeing Poseidon P-8 maritime patrol aircraft for use in the command and control role.

the vast sums of money being poured into national infrastructures.

To take just one example: The Kuwaiti Government is investing \$136 billion in this sector over the next few years – an astonishing sum considering the small physical size of the emirate.

And with the Kuwaiti Government having given a 7% pay rise last year to all state employees – which make up the vast majority of Kuwaiti citizens in employment – airlines serving the Kuwaiti market are benefiting from a resulting 'feel-good factor' that encourages people to travel for both business and leisure.

With oil prices still remaining high, national treasuries throughout the Gulf are in a healthy state. Airlines in the Gulf are reflecting this optimism by expanding. As well as 'the usual suspects' of Emirates, Etihad and Qatar Airways, whose growth seems unstoppable, other carriers such as Oman Air and Flydubai, are steadily increasing their fleets.

One man likely to be in the limelight at the show will be Qatar Airways' CEO Akbar Al Baker, who at the Paris Airshow in June hinted of an order at Dubai – perhaps for the 777-9X or the Bombardier CSeries. Qatar Airways already has 44 777s in service or on order, but plans to start replacing its early models early next decade.

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Routes marches into new territory

After last year's record-breaking World Routes forum in Abu Dhabi, the annual speed-dating networking event for airlines, airports and tourism boards moved to what is arguably the convention capital of the world, Las Vegas. It was the forum's first time in the USA but it will also be back there next year to celebrate its 20th birthday in Chicago.

In 2015, Africa will host the event for the first time, with that honour going to Durban in the fast-developing KwaZulu-Natal region.

Airlines from across the Middle East and North Africa attended the Las Vegas event while airports from across the region made a great play of attracting new customers and promoting their facilities.

Marcelle Nethersole and Alan Peaford were there to meet the delegates.

ADDITIONAL PICTURES: WWW ANNA DOT AERO



Morocco's tourist board was keen to extol the country's many opportunities for business.

STILL PLENTY OF CAPACITY ON THE ROAD TO MOROCCO

Morocco's Office of National Des Aeroports (ONDA), the organisation that manages its 25 airports, said it expects to see its traffic double at all its airports by 2020. Already in the last three months its airports have seen a growth of between 15 and 20% and by 2020 it expects to see traffic figures double to 30 million passengers.

Speaking at Routes ONDA director general, Dalil Guendouz, said this growth showed the country was very attractive for airlines.

"Morocco's airports today have a very important growth market in terms of traffic. We have 18 international airports

and, as a whole, they handled 15 million passengers in 2012," he said.

In the first eight months of 2013 passenger numbers were up 7% to 10.8 million, with August seeing year-on-year growth of 20%. Traffic has been up most in Rabat (+23.8%), Fez (+12.%) and Marrakech (+11.5%).

While Marrakech is the big tourist city, Casablanca is the economic capital of the country and sees the most growth.

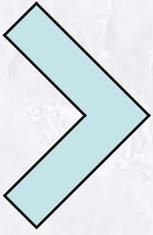
"Casablanca airport represents 50% of the global traffic in Morocco," said Guendouz. "It is an international hub as it has a special geographical

Continued
on Page 167

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CONTINUED FROM PAGE 165

position; it's a bridge between north and south and also east and west, which is why the ONDA put Casablanca as the international hub of the country."

The country's national carrier, Royal Air Maroc, is also based in Casablanca. It recently expanded its operation from Casablanca by adding new routes to Gatwick, Copenhagen and Stockholm.

"Having our national carrier in Casablanca enables it to connect with 24 countries in Africa, as well as with the Gulf. So it's a very important strategic position," said Guendouz.

Casablanca is also home to global manufactures and training schools.

"The strategy of the Government is not to just build airports but to increase the industry in general," explained Guendouz.

"We have an industrial zone in Casablanca dedicated to the aviation industry with the best and biggest manufacturers in the world working out of this base including EADS, Bombardier and Safran. We have also invested a lot in training programmes. We have several training schools for engineers and technicians."

ONDA is currently overseeing large airport expansion programmes.

Casablanca is currently under construction and once complete ONDA expects its passenger figures to triple.

Guendouz said: "Today it has seven million and by the end of 2014 it will have a capacity of 21 million passengers.

Marrakech has three-and-a-half million passengers and by the end of September 2014 it will become nine million – so we

Casablanca is an international hub as it has a special geographical position; it's a bridge between north and south and also east and west

have a very high programme of extensions. We have about 24 million as global capacity overall – by the end of 2014 we expect to see 46 million. So it's a very aggressive strategy of development."

Marrakech and Fez are the next biggest airports in the country. Both became designated Ryanair bases in early 2013.

"Low-cost carriers bring in a lot of visitors. Other low-cost carriers are also starting to add Morocco to their lists, such as EasyJet, which has flights to Marrakech from London Stansted. It also helps that we have an 'open skies' agreement with the EU," said Guendouz.

Business aviation is also on the up in the country. The main airports catering for business jets are Casablanca, Rabat, Marrakech and Tangier.

Muscat battling to stay on top of the peak

Oman's flagship Muscat Airport – currently under development – is now facing capacity constraints, according to Khalfan Said Alshueil, readiness general manager at Oman Airports Management Company.

Speaking at World Routes, Alshueil said: "Traffic levels to Muscat have been growing at an average rate of 13% during the last two years and the aircraft movement traffic has been growing at an average rate of 9% over the same period. But we are currently facing constraints during the peak hours in Muscat."

Alshueil said the airport development is "continuing on full swing", with airport improvement programmes going on across the country.

"These new facilities, particularly in the case of Muscat and Salalah, will represent a quantum leap in terms of existing facilities," he said.

"This is both in terms of size – the new Muscat Terminal will handle up to 12 million passengers a year in the first phase and, with more than 350,000sqm, it is over seven times larger than our existing terminal building – and technology, as we adopt many of the latest technological advancements being seen within the industry for the benefit of both our customer airlines and the travelling public.

"The challenge for the airport operator of putting all this in place and making these facilities operational is immense in a country with a relatively young aviation industry. Recruitment and training of new staff to operate these facilities to world class standards is a major challenge and has already commenced," Alshueil said.



RAK was at Vegas in force led by CEO Andrew Gower (top right); Roop Johai (top left) the head of commercial and business development; Commercial officer Glenda Rodrigues (lower left) and Em Marquez, PA to the CEO.

RAK on track as a Dubai alternative

Ras Al Khaimah (RAK) Airport was in Las Vegas to demonstrate that it offers a viable alternative to carriers looking to land in the UAE. Just 45 minutes from Dubai, RAK Airport claims you can be off the aircraft, through immigration, in a car and the centre of Dubai while passengers at the UAE's main airport are still queuing for customs and immigration checks.

Egypt "all a matter of perception"

The continuing unrest in Egypt has dealt a blow to the country as tourism numbers have collapsed – but representatives of Egypt's airports at World Routes were optimistic about recovery.

"It is all about perception," said Joachim von Winning, chief commercial officer of Cairo International Airport. "Germany has lifted its advice against travel to Egypt but there are still warnings from the UK and the United States."

Traffic to Egypt dropped after the revolution during the Arab Spring in 2011 but during the period of stability that followed, numbers began to grow. "We had our best figures ever in June this year and were optimistic we would better our 15 million target, but then came the violent gatherings and the coup d'état. Our numbers plummeted. Then there were the harsh crowd control measures and the numbers plummeted even more," said von Winning.

Etihad announces new LAX service

One new route announced at the forum was from Etihad, which confirmed it is to launch flights from Abu Dhabi to Los Angeles International Airport next June, marking its fourth US destination and one that met huge approval from LAX.

The West Coast gateway has just opened its new state-of-the-art international terminal and the UAE carrier will operate daily services using 237-seat Boeing 777-200LR aircraft on the route.

The initiative is still pending regulatory approvals.

By September the Egyptian Airport Company, which manages 12 of the country's secondary and main tourist airports, and Cairo Airport Company were fearing the worst. "The sad thing is that the areas where there are problems are well known. The main tourist areas are not affected. There is no real threat to travellers," von Winning said.

Despite the problems, Cairo is continuing to invest in the rebuilding of Terminal 2. "It will be open in 2015," von Winning said.

Meetings with airlines at the World Routes congress also showed up the divisions in perception. "We have seen the Gulf carriers want more slots as they can see that it will pick up; the European carriers want discounts and the new airlines are very hesitant because of the current situation," von Winning added.

While cargo numbers are stagnant, Cairo has continued with the construction of a new cargo village.

WIZZ BANG ON TARGET FOR BUDAPEST IN THE GULF

Things are certainly looking up for Budapest Airport, which has its sights set firmly on the Middle East.

It received a comfortable 8.5 million passengers this year after a difficult 18 months – and it saw one of its resident airlines create history by being the first passenger carrier to operate into Dubai World Central.

When Malev, Hungary's national carrier, collapsed at the start of 2012, it could have triggered a drop in airport traffic figures. But, thanks to its domestic airline, Wizz Air, and other low-cost carriers such as Ryanair, the airport was able to fill a void and still see 8.4 million visitors in 2012.

Speaking at the Routes World congress, Budapest Airport CCO Kam Jandu said it is now excited about the potential Budapest Airport offers airlines and that it is particularly interested in Middle East carriers.

"Over the last four or five years we have ranged in the eight million passenger mark," said Jandu. "Hungary joined the European Union in 2006 and it was growing at a rate of 20-30% until the global crisis in 2008.

"Then, when Malev collapsed in 2012, it was our biggest customer with 35% of our business. We were staring at a huge cavity in our business plan but that was bridged with a lot of low-cost airlines coming in," said Jandu.

Hungarian LCC Wizz now flies to Dubai World Central, making it the first Middle East point for the airline and the country. It was also the first low-cost airline going into Dubai World Central.

"Off the back of Wizz and its route to



Kam Jandu sees great potential for Budapest links with the Gulf states in particular.

Dubai, we are now hoping some of the other Middle Eastern airlines will want to add Budapest to their networks," said Jandu. "We have already been in talks with Emirates and it's now not a question of if, but when, it will add Budapest to its route. That would really complement the Wizz operation. "Qatar Airways has been operating out of Budapest for the past two years very successfully and Emirates now recognises that the demand is sufficient to look into us."

Budapest Airport, which is fully privatised, has had a significant change since the collapse of Malev.

Jandu explained: "When Malev dissolved we closed one of the two terminals. So, today, we are only operating T2, which has a natural capacity of 13 million. We currently receive 8.5 million passengers, so we have ample space and there really is no need at the moment for both terminals until there is a demand.

TAV Airports thinking well beyond Istanbul

Turkish company TAV Airports was at Routes promoting, in particular, two of its 12 airports.

"While Istanbul Atatürk Airport is our biggest airport with a phenomenal growth of 52 million passengers, we're not here promoting this airport as we're already running into capacity issues," explained Serkan Karahatay, senior marketing specialist.

"We are promoting specifically two of our new airports; Antalya Gazipaşa Airport, which last year was the first year of operations, and Medina Airport in Saudi Arabia. Medina is one of the two holy cities of Islam, so we see a lot of pilgrimage travels to this airport. It is currently under expansion construction as there is limited capacity, but in a year it will have a lot of new capacity."

The company is also preparing to bid for New York's La Guardia International Airport and, if it wins its bid, it will become TAV's first US airport.

"We have recently pre-qualified to bid for the renovation of its central terminal building, so we're currently working on that bid, which is due in Spring 2014," said Karahatay.

"Besides it being our first US airport if we win the bid, it will also be the first US airport to be privatised. If we win the bid, we hope it will become a model for other US airport privatisations in the future."

Cambridge graduates towards Abu Dhabi



Steve Jones (right) with head of business development David Surley.

The former general manager of Al Bateen Airport in Abu Dhabi is seeing growing links with his former adopted home.

In his new job as managing director of Cambridge Airport, Steve Jones has seen a new connection develop between Abu Dhabi and the UK's fastest growing city, which is home to one of the oldest universities in the world.

The airport was at Routes promoting its newest links to the world via Abu Dhabi.

In September, Cambridge Airport welcomed Swiss-owned Darwin Airline, which has an interline agreement with UAE national carrier Etihad.

"That gives us links to more than 100 destinations," said Jones. "Darwin is now offering onward connections from its flights to Amsterdam, Paris, Geneva and Milan via the deal with Etihad."

"It cuts significant time from travelling via Heathrow," he added. "The first month of Darwin operating from Cambridge has shown very promising numbers."



Joni Sundelin - Qatar key to the Finnish market.

Aiming to Finnish ahead...

Helsinki airport was at Routes with a clear goal of landing a Gulf carrier, while also talking to the region's airports about connections through their hubs to the Indian subcontinent and Australia.

While the Gulf carriers have been building their presence in the Nordic region, none of the big three currently serve the Finnish capital. Finnair, however, serves Dubai with frequencies varying on a seasonal basis.

"A Helsinki link would give Gulf carriers access to feed to the Middle East region, India, Africa

and Australia," said Joni Sundelin, senior vice president at the Helsinki airport operator Finnair.

"Flight times from Helsinki to the Gulf hubs are exactly the same as from mainland European points like Frankfurt – for example six hours to Dubai – so we are really well positioned."

Sundelin also said that Qatar Airways' accession to Oneworld, which happened at the end of October, could create an opportunity as Helsinki is home to existing alliance member Finnair.



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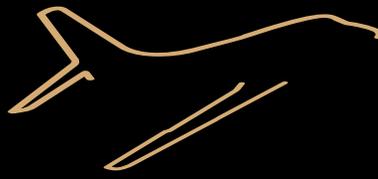
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SHOWS OF STRENGTH

The region's prime exhibition and conference season has started with an increase in major events taking place across the Middle East and North Africa. We look at what is on offer.

BAHRAIN

BIAS plays a key role in island's future



Bahrain is mulling over the idea of an aerocity as it develops the existing international airport at Muharraq and could also be soon announcing a brand new airport.

Mohamed Yousif Al Binfalah, chief executive of the Bahrain Airport Company, said that plans were well advanced and that the government-owned Bahrain organisation would be meeting prospective partners and other interested parties at the Bahrain International Air Show (BIAS) in January.

Al Binfalah said the show is now a vital part of the island state's tourism and business strategy.

Mohamed Yousif Al Binfalah: Plans are well advanced.

Held at the five-star, purpose-built venue of Sakhir Airbase, BIAS is a biennial event and this year for the first time will include a general exhibition pavilion focusing on airport, security and surveillance.

The new pavilion will cover 1,000sqm comprising a shell-scheme and self-build exhibition areas, a networking lounge and a live indoor flying arena for the demonstration of micro-UAS and surveillance equipment.

"We are very close to Saudi Arabia and the link by causeway means we can expect many of our Saudi neighbours to attend the event," Al Binfalah said.

ABU DHABI

Aerospace summit expands in 2014

Abu Dhabi's Global Aerospace Summit – the strategic invitation-only forum for senior industry leaders in aviation, aerospace, defence and space – will be expanding its scope 2014.

Hosted by Mubadala Development Company and organised by Streamline Marketing Group, the summit will run on April 7-8 at the St Regis Hotel, Saadiyat Island, Abu Dhabi. It will focus on the challenges of driving industrialisation and growth while adapting to global socio-economic change.

The wide-ranging themes covered will include new events for CEOs, dedicated sector-specific strategy seminars, defence industry closed-door briefings, and a military, satellite and communications session.

It will bring industry experts together to answer the challenges faced by the sector and shape future growth strategies.

Leaders from companies in both established and emerging markets will share their experiences of supporting industrialisation, improving supply chain standards and creating value-added jobs for highly skilled individuals.

The summit will also see an initiative designed to inspire the next generation of industry leadership with the launch of the 'Global Aerospace Ambassadors'. This programme is designed to support education professionals in the delivery of a successful curriculum in science, technology, engineering and mathematics. It aims both to inspire students and provide parents with sufficient information to guide informed educational choices.

The inaugural summit in 2012 attracted more than 900 top executives from 52 countries. The 2014 event will also include delegates from emerging markets such as Russia, China, India, eastern Europe and South America.

The summit team will be at the Dubai Airshow on the Mubadala stand.

DUBAI

Hot topics on the agenda for fire fighters

Aviation fire and rescue specialists from around the world will be converging on Dubai on December 10-11 as the city hosts the global Aircraft Rescue and Fire Fighting event.

The event, which takes place at the Oberoi Hotel, was launched by the International Aviation Fire Protection Association (IAFPA) to help aviation fire specialists and airport managers from around the world build resilience for some of the major incidents they could face at their airports.

Case studies at the two-day conference include the recent Asiana 214 incident at San Francisco Airport and QF32 – the Qantas Airways flight that made an emergency landing at Changi Airport in Singapore.

Delegates will be able to hear how the ARFF teams handled the emergency

situations and pick up on valuable lessons learnt.

IAFPA chairman Cletus Packiam, who is also chief of Changi Airport's emergency services, said: "This new global ARFF event is an important gathering for those in the aviation fire industry. For two days we can network, share information and hear about the latest training, systems and technologies that can help us build resilience and preparedness at our airports."

Delegates for the conference will be attending from the UAE's eight airports as well as those from the GCC.

ARFF 2013 is an official IAFPA event, supported by Dubai Airports and organised by Tangent Link, a UK company specialising in international aerospace and defence events.



KUWAIT

Airport upgrade boosts show

Kuwait's plans to upgrade its international airport, along with investment in the fleet of Kuwait Airways, is giving a boost to the Kuwait International Airport Development Forum (KIADF), which takes place in December.

The Kuwait Directorate General of Civil Aviation (DGCA) is planning to spend billions of dollars on upgrading the infrastructure and facilities at the existing airport and construct a new terminal, with the private sector and foreign investors expected to play an important role in its development.

The plan envisages expanding the Kuwait airport's capacity from present six million passengers per year to 13 million passengers annually by 2016, and to turn the airport into a major passenger and cargo hub.

The expansion will include a new terminal equipped with the latest technology, widening the runways, enhancing the existing control tower and building a new control tower, as well as setting up a new cargo facility.

Kuwait Airways has also announced it plans to buy up to 21 new aircraft over the next two years to replace its current old fleet.

KIADF is organized by Arabian Reach and takes place at the International Fairground in Mishref on December 8-9. Ground handling specialist National Aviation Services (NAS) has been named as the diamond sponsor of the event.

"NAS believes that the KIADF is 'the one' promising platform to explore the growth opportunities in the State of Kuwait. NAS is a world class aviation solution provider, approved by the European Aviation Safety Agency, and by participating in the event expects to reveal the company's specialised services and explore growth opportunities to partner in the projected expansion of Kuwait Airport," the company said in a statement.



From galleys to connectivity AIME offers great insights to this growing sector.

Safety second

Following the success of the inaugural Aviation Safety Culture Summit held in Dubai earlier this year, the Dubai Civil Aviation Authority (DCAA) is planning a second edition with proposed dates of February 3-4.

The event will be held under the patronage of Sheikh Ahmed bin Saeed al Maktoum, president, DCAA; chairman, Dubai Airports and chairman and chief executive, Emirates Airline.

This invite-only strategic, industry gathering aims to establish the highest standards of safety across the global aviation workplace and to discuss the best practice, challenges and issues relating to safety within the industry.

With more than 450 senior aviation executives representing airports, airlines, regulators and industry stakeholders attending the inaugural summit, the 2014 event will focus on developing safety strategies and initiating outcomes for the industry.

DUBAI

Perfect fit for AIME and MRO Middle East

The Middle East's aircraft interiors and MRO shows are coming together again on February 5-6 next year at Dubai World Trade Centre (DWTC).

Aircraft Interiors Middle East (AIME) and MRO Middle East have successfully demonstrated that the two shows fit together well.

The 2013 edition witnessed growth of 34% with 3,245 attendees from 70 countries.

Organised jointly by F&E Aerospace and *Aviation Week*, the two shows are selling well. The Middle East has been driving a lot of change in the aircraft interiors market, not least in the IFE and connectivity sectors (IFEC).

The 2014 show will include a dedicated pavilion for IFEC which Sharief Fahmy, CEO at F&E Aerospace, said emphasises the importance of the sector to the region. "As show organisers, we are constantly striving to develop and grow all our shows," he added.

Returning exhibitors include OnAir, Gogo, and Thales, along with bookings from new exhibitors like Row 44 and Zodiac Aerospace IFE.

"The IFEC pavilion provides an exceptional opportunity for IFEC suppliers to engage with airlines from this vibrant region," said Fahmy.

Meanwhile, on the MRO side, the organisers are expecting to see a numbers increase. New this year will be interactive workshops; power roundtables on the impact of leasing on MRO practices and manpower challenges in the MENA region; and insights from leading industry experts into growth opportunities, cost-reduction strategies, and management practices to increase ROI and maximise efficiency. There will also be an expanded exhibition hall with more exhibitors and buyers.



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Clive Richardson, the former CEO of Dubai Airshow organisers Fairs & Exhibitions (F&E), and Alison Weller, former managing director of F&E Aerospace, have founded the Access Group – a sales, management, marketing, PR, protocol management and business development facilitator.

The company is working with global media and event organisers to launch new projects in the Middle East and provide consultancy for established events and publications. “Together we bring more than 20 years’ experience in the Middle East to bear and, with our combined experience of more than 50 years in the aerospace, aviation and defence industries, we will naturally specialise in these sectors,” said Richardson. Both he and Weller have previously worked for leading publisher, Flightglobal.

They created and launched some of the world’s largest aerospace events and have also developed successful shows such as the Routes forum and the Middle East’s leading aerospace event – The Dubai Airshow.

Weller said: “We intend to bring our wealth of experience, contacts and ideas to new areas and help develop the events industry in the Middle East.”



Mikheev CEO at Russian Helicopters

Russian Helicopters has appointed Alexander Mikheev as CEO.

Mikheev previously served as deputy CEO of Rosoboronexport.

Russian Helicopters’ outgoing CEO, Dmitry Petrov, will continue to work within parent company Rostec.



Born in 1961, Mikheev graduated in aeronautical engineering from Moscow Institute of Civil Aviation Engineering in 1985. In 2005 he obtained a masters’ degree from the Military Academy of the General Staff of the Russian Armed Forces, and a year later he graduated from the Russian Government Financial Academy. He holds a candidate degree in economics.

Ford takes on CEO role at StandardAero

Dubai Aerospace (DAE) subsidiary StandardAero has named Russell Ford as its new CEO.

“Russell brings nearly 30 years of professional experience as a multi-national business leader with demonstrated results in both public and private sector companies,” said DAE chief executive Firoz Tarapore, who has also acted as interim CEO of StandardAero.

Ford joins StandardAero from Precision Castparts, where he served as president of Carlton Forge Works and Dickson Test Group of the forged

products division. Ford started his new role on October 15.

Former trainees join Emirates’ top table

Emirates has announced two senior management appointments to strengthen its market position in Africa, Latin America and the Indian Ocean.

Orhan Abbas becomes senior vice president, commercial operations, Latin America, Central and Southern Africa, while Adil Al Ghaith is now vice president, commercial operations for Northern and Western Africa.

The two UAE nationals joined Emirates as

management trainees in 1998 and 1999 respectively, and have since held various management and leadership positions both within and outside of the UAE.

Giannoni named CEO of Thales IFEC

Thales has appointed Dominique Giannoni as CEO of its in-flight entertainment and connectivity (IFEC) business.

Giannoni will take the business through its next growth phase, rounding out the operation’s advanced products and services with added-value propositions to global airlines.

Northrop Grumman appoint Raaberg

Northrop Grumman Corporation appointed Douglas Raaberg as its chief executive for the UAE business. He will be responsible for coordinating the corporation’s relationship with the UAE, supporting current programmes and developing strategies for growth.

Raaberg was previously director, Battle Management Command and Control (BMC2) campaign lead, within Northrop Grumman’s Aerospace Systems sector and led a portfolio of business pursuits to develop, sustain and modernize BMC2 products. He was also responsible for leading business development efforts for the sector’s military aircraft systems including B-2, E-2D, F/A-18, F-35 and Joint STARS aircraft.

Raaberg joined Northrop Grumman in March 2010 following a distinguished career in the US Air Force spanning more than 30 years during which he held numerous operational, command and staff positions. He attained the rank of major general.

GULF AIR APPOINTS UK COUNTRY MANAGER



Gulf Air has appointed Rashid Al Gaoud as its new country manager for the United Kingdom.

Al Gaoud will be based in London and responsible for driving the commercial performance of Gulf Air in the UK.

Gulf Air’s acting chief commercial officer, Ahmed Janahi said: “Mr Al Gaoud brings extensive knowledge in sales, marketing and operations. The UK is an important market for Gulf Air and we are looking to continue to strengthen our presence and growth in the market.”

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MIDDLE EAST BUSINESS AVIATION ASSOCIATION

Juergen Strommer



1

■ Can you tell us a little of the history of Cavotec?

Cavotec is an engineering group that enables industries worldwide to improve productivity, safety and sustainability. For more than three decades, Cavotec has developed power transmission, distribution and control technologies that form the link between fixed and mobile equipment in the ports and maritime; airports, mining and tunnelling; and general industry sectors. The UAE-based subsidiary of Cavotec, Cavotec Middle East, has a large number of customer references at ports and airports in the UAE (Abu Dhabi and Dubai), Bahrain, Egypt, Jordan, Kuwait, Qatar, Oman, Iraq, and Saudi Arabia.

2

■ How long has Cavotec Middle East operated?

It was established in 1992 and has since grown to become a leading supplier of the region's ground support equipment (GSE) needs.

A provider of end-to-end airport equipment solutions, from supply and installation to service and after-market support, Cavotec Middle East boasts a 4,525sqm facility in Dubai's Jebel Ali free zone that is equipped with workshops and a fully operational training academy, with experienced engineers and technical staff who accommodate all types of customer requirements and offer comprehensive on-site support.

Marcelle Nethersole *speaks to the managing director of Cavotec Middle East*

3

■ Why is this region important for Cavotec?

It is one of the fastest growing markets in the world. As the rapid development of airports across the region continues, operators continue to build new hubs and expand existing infrastructure to accommodate increased air traffic.

With this brisk expansion comes the responsibility to mitigate the mounting environmental impact of a highly developed aviation infrastructure.

It is also one of the most demanding markets when it comes to GSE due to various factors, such as severe ambient conditions, which represent a major challenge for cooling wide-body aircraft. Cavotec has overcome this issue. Our pre-conditioned air (PCA) systems enable aircraft across the region to switch off their APUs when parked at the gate – resulting in lower emissions and reduced fuel costs.

4

■ What GSE do you provide customers and where?

Our GSE includes innovative in-ground pop-up utility pit systems, pre-conditioned air (PCA) units, as well as power conversion systems that deliver a variety of services to aircraft from one convenient outlet. These systems rise from the ground when in use and stay flush with the ground during downtime.

Our pop-up systems serve Dubai International Airport's Concourse C, Concourse B, and the newly opened Concourse A, as well as Oman's Muscat International Airport, Hamad International Airport in Qatar, and several other airports in the region.

Bahrain International Airport also uses pop-up pits and PCA units, with the addition of transformer substations, 400Hz power supply systems, a vacuum evacuation system, a blue water supply system and a potable water supply system.

Cavotec's fuel hydrant pits and isolation valve pits, manufactured by Cavotec Dabico, are deployed in Sohar International Airport in Oman, and at New Doha International Airport.

5

■ Your latest project is at the Emirates Engineering Centre at Dubai International Airport. What will you be providing there?

We will supply, install and commission in-ground pop-up utility pits and PCA units for four new A380 line maintenance hangars. Delivery and installation has already started, with commissioning slated for the end of 2013. Cavotec's equipment is designed for the generation and supply of PCA to Emirates Airbus A380 aircraft during servicing.

We are currently the only supplier that offers these innovative PCA systems, capable of cooling all types of aircraft, including code-F A380 super jumbos. These systems minimise energy consumption and operational costs while cutting carbon emissions by up to 66%.

6

■ Cavotec will promote its clean apron technology at this year's Dubai Airport Show. What is this?

The concept eliminates non-essential mobile GSE vehicles, such as costly APUs, from the apron and delivers utilities to the aircraft via in-ground pop-up pit systems. With the system in place, airports are able to significantly reduce operating costs.

The result is faster turnaround times, reduced pollution, happier travellers, and an overall better airport experience.

These technologies have been launched with Cavotec's unique gate concept – E3 Gate – where up to five aircraft services can be delivered via three pop-up pits. E3 Gate answers IATA recommendations on limiting the risk of damage caused by mobile GSE and aircraft colliding, and noise and air pollution.

C SERIES

change takes flight



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Five years in the making and change has taken flight. Thanks to the collaboration of *Bombardier's* dedicated partners, suppliers, and employees, the *CSeries* aircraft is poised to bring meaningful change to the industry. Here's how: **with 15% cash operating cost advantage, best-in-class cabin comfort, exceptional operational flexibility and an unmatched environmental scorecard**, the *CSeries* aircraft is the profitable and responsible solution to take passenger experience to a new level. ***CSeries* - a new choice for a changed world.**

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