



ARABIAN AEROSPACE

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

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five main goals for
business aviation

MEBAA'S SHOW OF STRENGTH



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Three men with a passion for the industry and the Arab world

One of the great pleasures of this job is getting to meet different people.

And, in this past few months as we have put together this issue of Arabian Aerospace, I have had the chance to sit and chat to three men from very different backgrounds but who share a great passion for our industry.

Hamdi Chaouk, head of civil aviation for Lebanon, is the first. Hamdi literally puts his life on the line for his job.

In the turmoil of Beirut politics that is always just beneath the surface, he has flown a straight and level course to remain above suspicion and influence in order to do what is best for the aviation industry.

He has faced significant criticism from national airline MEA which, sadly, declined to even talk to us for our special feature on Lebanon. But he has also ensured that true open skies policies have continued to operate in Lebanon and the country – including MEA – has continued to benefit from it.

Hamdi is a 16-hour-a-day worker and when he is not at

his office he can be found at the university lecturing aeronautical engineering students.

It is this same commitment to the future that drives Homaid Al Shemari, the man who leads Mubadala's rapidly expanding aerospace empire. Homaid has a vision that sees Emiratis embracing careers in aerospace rather than being disdainful about jobs in the industry.

And, ensuring the indigenous industry plays a key role in its business sector is what gets Ali Al Naqbi agitated. Ali is the founding chairman of MEBAA, the Middle East Business Aviation Association which, in December, will be welcoming the world's business aircraft manufacturers and regulators to Dubai.

All three men have something in common – the passion for the industry but also a great belief that the Arab world should be playing a greater part in aviation. They are all doing something about it.

**ALAN PEAFORD
EDITOR-IN-CHIEF**

COVER: Ali Al Naqbi, founding chairman of MEBAA and host for the MEBA show.

PICTURE: IAN BILLINGHURST

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Recently, **Egyptair Maintenance & Engineering** has won a contract with Libyan Petroair under which EGYPTAIR M & E will provide line, base maintenance and overhaul services to Petroair's aircraft, Embraer 170. The contract also includes providing the planning, engineering and technical records services to Petroair as well as providing spare parts and components to the aircraft according to the international quality standards.

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Etihad links up with Virgin Blue

Etihad Airways has created a strategic alliance with the Virgin Blue Group.

From October 1, Etihad Airways and Virgin Blue have been able to offer customers a new combined global flight network, connecting passengers between Europe, the Middle East, Asia, Australia and North America.

The approval allows Etihad and Virgin Blue to sell, market and distribute the "joint product" to customers as well as publish aligned flight schedules.

Specifically for Etihad customers, the Virgin Blue network will open up 45 new destinations in Australia, New Zealand, the Pacific Islands and the west coast of America.

Passengers will be able to fly from Etihad's home base in Abu Dhabi to Australia and connect seamlessly to Virgin Blue destinations in the region.

Another element of the partnership is that, from February 2011, Virgin Blue's international arm, V Australia, will launch direct services to Abu Dhabi. This will mean Etihad and V Australia will operate a total of 27 weekly services between Abu Dhabi and Australia.

Two new routes for RAK Airways

RAK Airways, the national carrier of Ras Al Khaimah in the UAE, resumed services in October with four weekly flights to Calicut (Kozhikode) and Jeddah.

RAK Airways' chairman, Sheikh Omar Bin Saqr Al Qassimi, said the re-birth of the airline would play a pivotal role in the promotion of the emirate as a destination in its own right.

"The time is now right to play our part in the



Eurocopter's hybrid has the X factor

Eurocopter's X3 demonstrator began test flights in September (above).

This innovative high-speed, long-range hybrid helicopter (H3) concept combines excellent vertical take-off and landing capabilities with fast cruise speeds of more than 220kts.

The X3 demonstrator is equipped with two turboshaft engines that power a five-blade main rotor system and two propellers installed on short-span fixed wings. This creates an advanced transportation system offering the speed of a turboprop-powered aircraft and the full hover flight capabilities of a helicopter. The concept is tailored to applications where operational costs, flight duration and

mission success depend directly on the maximum cruising speed.

A wide range of missions is envisaged for the H3 configuration, including long-distance search and rescue (SAR), coast guard duties, border patrol, passenger transport and inter-city shuttle services.

Middle East governments may also be interested in the helicopter for military missions such as special forces operations, troop transport, combat SAR and medical evacuation – benefiting from the hybrid aircraft's combination of higher cruise speeds with excellent vertical take-off/landing performance.

ambitious vision of Sheikh Saud Bin Saqr Al Qassimi, Crown Prince and Deputy Ruler of Ras Al Khaimah, for boosting tourism in the emirate," he said.

"Ras Al Khaimah presents a very compelling business opportunity with its healthy economy and stable political environment. The cost of living and doing business in Ras Al Khaimah is extremely competitive and we are perfectly positioned at the

crossroads of Europe and Asia."

The airline was formed in 2006 but was suspended in 2008, citing the global downturn as the reason.

Jazeera financial crisis worsens

Kuwaiti low-cost carrier Jazeera Airways is in crisis. The airline had announced massive losses in its half-year results presentation but two weeks later it was

revealed that the airline's current liabilities exceed its assets, as it works to shore up its financial position.

The Kuwaiti operator says its management is expecting shareholders and lenders to "provide liquidity necessary" for it to meet outstanding obligations.

However, there was concern from financial specialists that the airline had to reveal in a statement to the Kuwaiti Stock Exchange that its latest interim financial

statement had omitted "by mistake" a crucial part of its auditor's report.

The missing section included the disclosure that current liabilities were exceeding the airline's assets. According to Air Transport Intelligence, the airline says it still plans to raise KD20 million (\$69 million) in capital through issuing 200 million shares but will revise the terms by dropping a planned KDO.050 premium.

NAS looks long-term with German support

NAS Tech, the maintenance division of Saudi-based National Air Services, has signed a co-operation deal with Germany's Lufthansa Technik.

Under the agreement, Lufthansa will maintain engines for NAS and extend for 10 years a deal to take responsibility for maintaining NAS Air's aircraft.

Lufthansa Technik will also oversee work conducted by NAS Tech, ensuring it meets the same level of technical standards. This phase of the agreement will run for about three years, while a second stage will involve the two sides co-operating to carry out third-party work in Saudi Arabia.



Air Algerie adds to 737 fleet

Air Algerie has taken delivery of its 11th Boeing 737-800.

The state-owned flag carrier of Algeria, operates a fleet composed primarily of Boeing 737s and some 767s. Boeing is scheduled to deliver two additional 737-800s in 2010 as well as four more in 2011. Air Algerie will be operating 17 737-800s in 2011 for a total of 22 Next-Generation 737 airplanes to complement its fleet.

"The Boeing 737-800 has played an instrumental part in contributing to the success of Air Algerie's growth in the region," said Abdelwahid Bouabdallah, director general of Air Algerie.

Abu Dhabi sets passenger record

A new record was set by Abu Dhabi International Airport as 1,008,228 passengers travelled through the airport in one month.

The Abu Dhabi Airports Company (ADAC) monthly traffic report showed an increase of 9.2 per cent in passenger traffic for July 2010 over the same month in the previous year.

For the first time in the airport's history, more than one million passengers travelled through the airport in any one single month. Aircraft movements increased by 10.1 per cent, while cargo traffic increased by 12.3 per cent, with a total of 36,755 tons transported through the airport.

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Gulf Air is potential target for BA alliance

Gulf Air is believed to be one of the targets for a new massive airline group being headed by British Airways.

The Bahrain national carrier's CEO, Samer Majali, denied BA had been in contact saying "Gulf Air has not been approached regarding this initiative; however it is something the company would consider positively at the appropriate time."

British Airways is seeking to create the world's biggest airline group, the International Airlines Group (IAG), following its \$7.6bn merger deal with Spain's Iberia. At the same time, Bahrain's national carrier is looking for an alliance that would give it access to a massive global network.

The 12 carriers targeted for the new super-alliance is also said to include Qantas, Cathay Pacific and Air Berlin. BA and Iberia have reportedly initially considered 40 airlines. The creation of IAG is expected to be completed by the end of the year.

EgyptAir receives first new A330-300

EgyptAir's first Airbus 330-300, now operating the morning route between Cairo and London, has launched the full on-board connectivity service from the airline.

The new A330 embraces a number of the latest technologies, like using the wireless internet and personal mobile on board.

"Besides using the GSM, SMS and GPRS services, passengers will be able to make phone calls through their personal mobiles with the same international call rates of their service providers," an airline spokesman said.

The A330-300 has 301



Dubai-based SKA to start operations with a Fokker 70

SKA Logistics, based in Dubai, is starting operations with a Fokker 70 aircraft delivered by Fokker Services.

The aircraft, registered as ZS-SKA, has had a full heavy-maintenance inspection and has been configured with 75 seats.

The deal with SKA is part of the FLYFokker programme and will be supported with the FLYFokker Take Off solution, including comprehensive training, logistics, MRO and engineering services.

"The new Fokker 70 is a very welcome addition to the SKA fleet and will provide us with a unique capability to expand our role in supporting our niche market of operating in harsh and difficult environments through the Middle East and Africa," said Erik Goedhart, VP marketing & sales for FLYFokker.

"This is a new and significant step in the development of the FLYFokker programme. We expect more new operators to start flying Fokker aircraft in the Middle East and Africa. In the past 90 years we supported the Fokker operators in this region where currently more than 100 Fokker aircraft are operational," he added.

The Fokker 70 is the latest turboprop aircraft model built by the Fokker Aircraft Company. The type is currently in service with nine operators around the world. Maximum range with 75 passengers is 1,900nm (3,500km).

The Fokker 70 has also been certified for operations from London City Airport, which requires a steep approach capability. Flight crews operating the Fokker 70 have the same type rating as for the larger Fokker 100.

seats, of which 36 are in business class and 265 in economy class.

All EgyptAir business class customers will be able to recharge their personal devices and will be able to sleep on 160-degree lie-flat beds.

PlayStation leads to emergency landing

A Turkish Airlines Airbus A330-200, flying from Istanbul to Beijing in September, made an emergency landing in Astana, Kazakhstan, after crew feared there was a bomb on board.

The alert came when cabin crew found a

portable PlayStation, the owner of which could not be immediately identified.

The aircraft registration TC-JNC, operating as flight TK-20, had 241 passengers on board.

When cabin crew found the PlayStation they made a number of tannoy calls to identify the owner of the device. When nobody came forward they became suspicious and feared it was possibly a bomb.

The captain decided to divert to Astana for a precautionary landing. A subsequent search revealed no traces of explosives on board the aircraft. The flight then continued to Beijing, arriving 6.5 hours late.

Oman Air touches down in Kathmandu

Oman Air received a warm welcome as its first flight to the Himalayan state of Nepal touched down at Kathmandu. Officials from the Nepal Tourism Bureau and the Civil Aviation Authority of Nepal greeted passengers, who included Philippe Georgiou, Oman Air's chief officer corporate affairs.

Georgiou said: "We want to promote Kathmandu as a major tourism destination and Oman Air's new operation will undoubtedly give a boost to the forthcoming Nepal Tourism Year 2011 campaign."

Crystal flies Abu Dhabi to Libya

Ethihad Crystal Cargo has begun scheduled services with its first Airbus A330-200 freighter aircraft operating from Abu Dhabi to Tripoli in Libya (see story, Page 26).

The new Airbus will allow Etihad to increase frequencies and the company says it will help build its presence in key markets world-wide, as well as enhance its world-wide charter services.

The aircraft will operate to various Etihad Crystal Cargo destinations including Hahn; Beijing; Tripoli; Milan and N'Djamena.

Roy Kinnear, executive vice president of Etihad Crystal Cargo, said the new A330-200 freighter aircraft is a key part of the airline's freighter fleet. "It will reinforce and build Etihad's presence in the high-growth European and Asian freight markets, in particular China," he said. "Etihad Crystal Cargo is performing very well for Etihad and the entry into service of the A330-200 freighter is an example of our commitment to the growth and expansion of our business."

Etihad is set to take delivery of a second A330-200 freighter in December.

Emirates expands its A380 network

Emirates, the world's largest operator of the Airbus A380, selected Hong Kong as the newest destination for its 'superjumbo' in August.

Emirates has a total of 12 A380s in service with 78 on order and Hong Kong became the Dubai-based global airline's 11th A380 destination when it began operations to the Chinese island on October 1 with a daily operation via Bangkok.

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Qatar Airways uses its newest Boeing to send relief to Pakistan



Boeing delivered its 12th Boeing 777-300ER (Extended Range) to Qatar Airways and the new airplane was immediately used to ferry cargo as part of humanitarian efforts to deliver relief supplies to flood victims in Pakistan.

Boeing, Qatar Airways and two non-profit agencies, AmeriCares and International Medical Corps, collaborated to bring relief goods to residents in the regions of Pakistan devastated by massive flooding caused by torrential rainfall.

With the help of the two agencies, Boeing and Qatar Airways loaded nearly 35,000 pounds (15.8 metric tonnes) of medicine and medical supplies into the cargo hold of the airline's new 777-300ER.

UPS pilots had radio failure before crash

The UPS freighter that crashed in Dubai on September 3 had been under the control of Bahraini air traffic control (ATC) as it had been unable to communicate with Dubai because of radio failure.

Saif al Suwaidi, director-general of the UAE's General Civil Aviation Authority (GCAA), said UPS Flight 6 had been unable to change radio frequency after entering Bahraini airspace.

"Because of the radio problem, the pilot was obliged to stay with Bahrain ATC. We were relaying messages through Bahrain," he said.

According to the GCAA's preliminary report, the two crew on board reported smoke in the cockpit and trouble maintaining the plane's altitude.

Cavotec wins Muscat contract

Cavotec Middle East, the UAE-based subsidiary of global engineering group Cavotec MSL, has won a contract from Bahwan Engineering Company for

the design, supply and installation of 95 pop-up pit systems at the new Muscat International Airport development.

Cavotec's pop-up pit systems have been chosen over conventional products due, in large part, to their advanced technology, reliability and proven track record in aviation.

EADS maiden flight breakthrough

The world's first four-engined all-electric aircraft has made its maiden flight.

The Cri-Cri, jointly developed by EADS Innovation Works, Aero Composites Saintonge and the Green Cri-Cri Association, made its

official maiden flight at Le Bourget Airport near Paris. The concept was first shown at the Green Aviation Show at Le Bourget in June.

"The Cri-Cri is a low-cost test bed for system integration of electrical technologies in support of projects like our hybrid propulsion concept for helicopters," said EADS

chief technical officer Jean Botti. "We hope to get a lot of useful information out of this project."

The combined utilisation of environment-friendly technical innovations enables the Cri-Cri to deliver novel performance values: 30 minutes of autonomous cruise flight at 110km/h, 15 minutes of autonomous aerobatics at speeds reaching up to 250km/h, and a climb rate of approximately 5.3m/sec.



Toulouse trek is worth it for Turkish

Turkish Airlines enjoyed a double-whammy delivery in September when it went to Toulouse to collect its first Airbus A330-300 and first A330-200 Freighter. The aircraft, both powered by Rolls Royce engines, will support Turkish Airlines' ambitious growth plans in both the passenger and cargo markets.

Joining the airlines existing passenger aircraft fleet of A320, A330-200 and A340 family aircraft, the A330-300, seating 28 passengers in business class and 261 in economy, will be used on medium and long range routes from the airline's hub in Istanbul. It is the first of ten of the type

ordered by Turkish Airlines in 2009.

The A330-200F will be used by Turkish Cargo on long haul routes to Shanghai and Hong Kong, and to expand the Turkish Cargo network. It is the first of two A330-200 Freighter aircraft that will join the airlines existing all Airbus freighter fleet of four Airbus A310s.

"I am delighted to be adding two more A330 Family variants to our fleet" said Dr Temel Kotil, CEO of Turkish Airlines. "The benefits we will gain from the flexibility of the aircraft and commonality with our existing fleet will provide a strong basis for our continued growth."

Smart moves for Bombardier

Bombardier has sold two Q400 turboprops to Smart Aviation of Egypt. The Cairo-based business jet operator also has options on an additional three Q400 NextGen aircraft.

The value of the firm order is around \$62 million at list prices, which could increase to \$158 million if all three options are converted to firm orders, Bombardier said.

Smart Aviation is launching scheduled and charter services to complement its corporate aircraft activities in the Middle East.



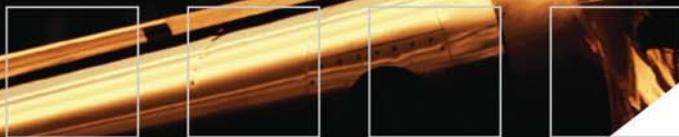
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Etihad expands RAM codeshare

Etihad Airways is extending its existing codeshare agreement with Royal Air Maroc, providing customers with access to more destinations in Morocco and West Africa.

The new deal allows Etihad passengers to travel from Casablanca to the Moroccan destinations of Agadir, Laayoune, Fez and Marrakech, adding Nouakchott in Mauritania and Dakar in Senegal in the near future.

In return, Royal Air Maroc offers travellers access to Etihad Airways' services beyond Abu Dhabi to Bahrain, Kuwait, Oman and Singapore, further complementing the partnership on the Casablanca Abu Dhabi route.

Driss Benhima, chairman and chief executive officer of Royal Air Maroc said: "We are very pleased with the co-operation that has existed for several years with Etihad."

Libyan takes first new A320

Libyan Airlines has taken delivery of its first new Airbus A320 aircraft from the Airbus facility in Toulouse, France.

The new aircraft, the first of seven on order, is equipped with On Air in-flight connectivity services, allowing passengers to stay in touch with colleagues, family and friends while they travel.

Powered by CFM engines, the aircraft will be operated on domestic and regional routes from the airline's hub in Tripoli, Libya.

The aircraft is fitted with several rows of convertible seats that enable the carrier to choose a variety of cabin configurations, depending

ExecuJet Middle East takes new hangar at Dubai

ExecuJet Middle East is expanding the maintenance capability at its Dubai International Airport base with the addition of a second 4,830sq m hangar.

The facility is suitable to accommodate eight to ten aircraft, or more of various sizes, and also features 417sq m of additional office space.

The new facility, which ExecuJet has committed to under an initial three-year lease, complements its existing 5,600sq m maintenance, FBO and office facility at the airport, where the company also offers aircraft management and charter services.

ExecuJet has also announced the addition of a mid-size cabin Hawker 800XP to its managed fleet. The UAE-registered aircraft is the third to join over recent months. Two new Challenger 605s were added to the ExecuJet-managed fleet in June.

The aircraft will be based in Dubai and will also be available for charter world-wide, including Afghanistan and

Iraq, subject to regular internal security review by the ExecuJet Safety Committee.

"The addition of this second hangar, coming so soon after our newly-won maintenance accreditation for the Embraer Legacy family, means we are in a strong position to take on more maintenance contracts and accommodate more base aircraft," said ExecuJet Middle East MD Mike Berry.

"The Middle East business aviation market is showing positive signs of recovery and business is now steady. On the FBO side, we are handling increased charter activity with flights within the Middle East and to regions such as Africa and Europe being especially popular. The new Hawker 800XP is a very welcome addition to the fleet."

ExecuJet Middle East is approved to support the entire range of Bombardier business aircraft as well as the Gulfstream G150 and G200 business aircraft models plus, most recently, the Embraer Legacy series. It manages a Bombardier spare parts depot.



on requirements. These range from the standard two-class configuration, with 32 business class and 108 economy class seats, to an all-economy cabin seating 156 passengers.

"Libyan Airlines strives to continuously improve the flying experience for our customers," said Captain Sabri, Chairman of Libyan Aviation Holding Company.

"This is a major milestone in the history of Libyan Airlines."

Dreamliner begins fatigue testing

Boeing has begun fatigue testing on the structural airframe of the 787

Dreamliner. Fatigue testing involves placing the 787 test airframe into a rig that simulates multiple lifecycles to test how the airplane responds over time.

"Unlike static tests, where loads are applied to the airplane structure to simulate both normal operation and extreme flight conditions, fatigue testing is a much longer process that simulates up to three times the number of flight cycles an airplane is likely to experience during a lifetime of service," explained Jim Ogonowski, structures vice president, Boeing Commercial Airplanes.

Boeing to open an office in Doha

Boeing is planning to open a second office in the Gulf following an increase in sales to Qatar Airways.

The official Qatar News Agency (QNA) has reported that the American manufacturer will be opening a "a fully-fledged Boeing facility" in the capital Doha. The agency quoted Paul Kinscherff, Boeing's president for the Middle East as saying: "Currently, Boeing is operating from Dubai, but given the circumstances, opening a full-fledged office in Qatar has become a necessity. And it is going to become a reality soon."

Qatar Airways has received eight Boeing 777 aircraft already this year.

Turkish Technic's eight-part deal

Turkish Technic has signed a contract to provide eight different key services for Saga Airlines including component pool services for B737-800 aircraft in the fleet till the end of 2015; landing gear overhaul services for B737-800s till the end of 2017; performance of redelivery checks and painting for two B737-400s; performance of the C check of an A330 aircraft, and performance of the overhaul of a GTCP 131-9B APU including spare support.



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BAE pushes Hawk jet trainers for Iraq

Iraq is believed to be moving forward with plans to buy 24 Hawk jet training aircraft from BAE Systems in a deal worth up to \$1.6bn, as it gradually rebuilds its air force amid the US military withdrawal.

An Iraqi Air Force team is understood to have test-flown and evaluated the single-engine jet, which is used to train pilots for supersonic combat, in Britain in May and June.

But it isn't clear when a deal for the Advanced Jet Trainer might be concluded.

"BAE Systems will support Iraq's requirements, including Hawk, as and when they arise in line with the export licensing requirements of the country," a BAE spokeswoman said.

If the deal goes ahead it would become the UK's biggest arms deal with Iraq since the 1980s, when Saddam Hussein was considered the key Arab bulwark against Iranian expansion.

Britain's *Financial Times* newspaper has reported that Baghdad was also looking at buying military aircraft from Italy and South Korea but the status of those possible purchases isn't known.

In 1989, while Saddam was still in power, Iraq negotiated to buy 50 Hawk trainers from BAE's predecessor, British Aerospace. But the UK government blocked the deal citing concern that the aircraft could be converted to fly combat missions.

The Baghdad government has for some time been moving toward large-scale investment in air power. US and Iraqi commanders envisage a self-sufficient air force with 350 aircraft and some 20,000 personnel by 2020.

Boeing sees opportunities in Middle East aircraft investment

Boeing told bankers and financiers in Dubai that, since the company's first regional financiers' event five years ago, the Middle East continues to emerge as a source of opportunities for aircraft financing capital.

However, chances for additional aircraft investment remain untapped, particularly as global economic conditions further improve.

"The Middle East remains a robust area for the aircraft investor as the region continues to diversify its funding sources, but the door remains wide open to profitable opportunities. Air travel here is stronger than most other regions, which creates great opportunity for willing investors in aircraft financing," said John Matthews, managing director for the Middle East and Africa at Boeing Capital, the aircraft manufacturer's customer financing unit.

Matthews served as host to more than 80 financiers at the sixth edition of Boeing's annual Financiers and Investors Conference for the Middle East and Africa region, held in Dubai in September.

Boeing presented its view of current aircraft financing market conditions and reported that, compared to conditions a year ago, the environment continues to improve for the various sources for aircraft financing – commercial banks, export credit agencies and private equity.

"The markets are much stronger than they were and they continue to gradually improve. There is no talk of a gap in terms of required funding and new planes continue to deliver on time with less difficulty than last year," Matthews said, adding that all-in pricing for aircraft funding remains at historic lows.

According to Boeing's latest market outlook, the Middle East continues to outperform the world in air travel growth. It was the only region that saw an international traffic increase during 2009, with a robust growth rate of 11.2 per cent.

The company's outlook over the next two decades expects the region to need 2,340 new



John Matthews: Great opportunity.

airplanes to keep up with industry demand, at a market value of US\$390bn. Boeing also credits the Middle East in helping develop new industry financing sources. Last year, Emirates Airline secured more than \$400 million in financing for three new Boeing 777 aircraft through a public bond offering backed by the Export-Import Bank of the US. It was the first such bond offering backed by Ex-Im Bank.

Meanwhile, the region continues to expand the use of Islamic financing. Last year saw the first Sukuk deal for aircraft, in which about US\$500 million worth of Islamic bonds, secured by 16 airplanes, were issued. "It demonstrates our belief that airplanes are ideal for Islamic financing, since a fundamental criterion is that such investments be asset based," Matthews said.

Emirates stands for SITA platform

Air transport IT specialist SITA has announced that Emirates has successfully migrated to the new SITA Airfare Insight platform in a strong endorsement of the industry's leading market-based pricing software tool.

SITA developed the software tool to allow airlines to make informed fare changes in response to competitors in real-time.

Emirates now has the

integrated capability to manage and control the complexity of end-to-end fares management and distribution processes, and has implemented it across its sales offices.

US orders more upgraded S-61s

The US State Department has ordered 11 additional upgraded S-61 utility helicopters for use in Iraq and Afghanistan, Sikorsky Aerospace Services says.

Earlier this year, the State Department entered into a five-year indefinite delivery, indefinite quantity (IDIQ) contract for up to 110 upgraded S-61 aircraft for passenger and cargo transport missions in support of its world-wide operations.

Under the IDIQ agreement, the first four aircraft purchased in February are currently in completion and are scheduled for deployment in Afghanistan later this year.

New deal to raise the bar on training

The Gulf Centre for Aviation Studies (GCAS) has signed up the Middle East Business Aviation Association (MEBAA) to work on a plan to raise the competencies of people involved in the region's executive aviation industry.

The move gives MEBAA access to internationally-accredited programmes certified by world leaders in aviation training, such as the Joint Aviation Authorities Training Organisation (JAATO) and ACI Global, and gives GCAS another step towards its ambition to lead the aviation industry in the region towards world-class standards in operation and management.

The two sides are forming a training committee to identify the needs of MEBAA's partners and members, and the training currently offered.

Mohammed Al Bulooki, general manager of GCAS, said: "This partnership with MEBAA is another milestone for GCAS, as it will serve our goal in furthering the collective expertise and knowledge base in our industry and in our aim of providing training solutions for all key aviation organisations in the region. With this membership we will have access to a new base of governmental and aviation companies to further develop and expand our training programmes. We can extend our services beyond the region."

GCAS is a GCAA-accredited centre and is the exclusive training provider for JAATO in the Gulf and Middle East region. It is the tenth certified training centre for ACI courses.

Earlier this year GCAS signed training agreements with both Kuwait Airways and the Bahrain Civil Aviation Affairs department.

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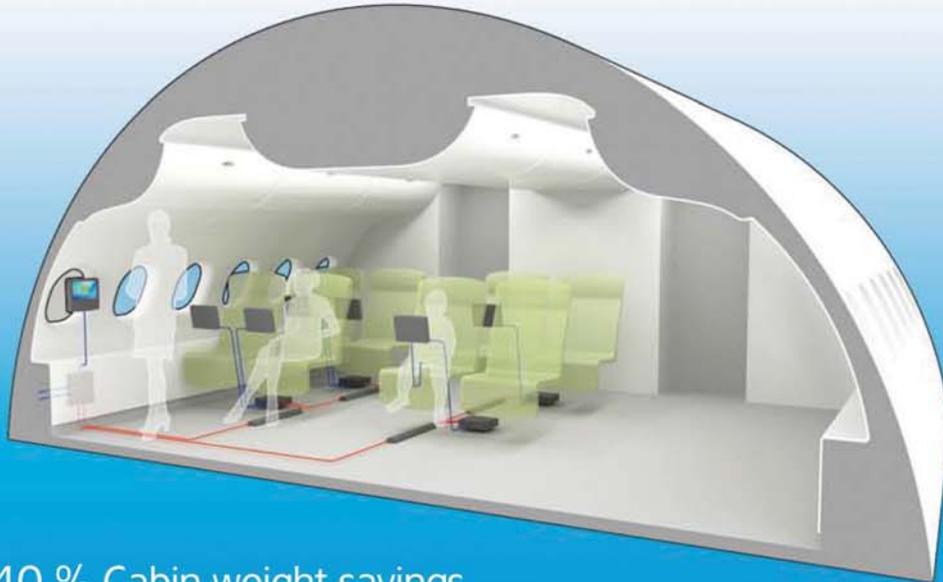
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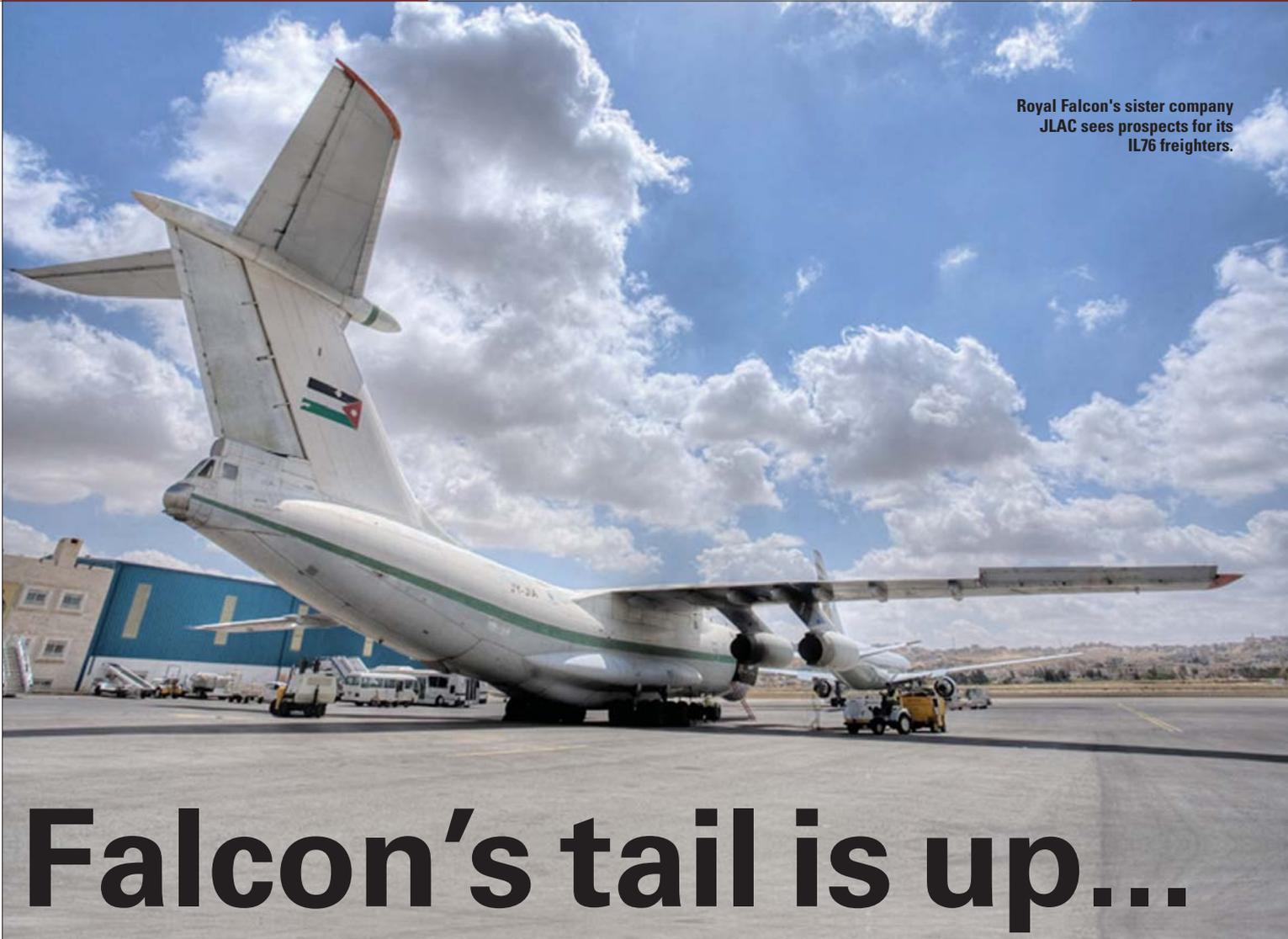


SDU – Smart Display Unit



SPB– Seat Power Box

Royal Falcon's sister company
JLAC sees prospects for its
IL76 freighters.



Falcon's tail is up...

The coming year will see major changes at Jordan's Royal Falcon airline. New equipment, routes and a change of home base will mark the next step in the development of the young airline.

It's not easy being a small company in a region dominated by major national carriers. Royal Falcon's experience since it began operations in August 2007 demonstrates both that reality and also the gritty character of Jordanians, citizens of a nation with few natural resources to cushion them from economic hardships.

President and CEO of Royal Falcon is Captain Ziad Hanandeh – although his current rank is something of a demotion considering the fact that, on leaving the Royal Jordanian Air Force in 2000, he was a major-general. (see sidebar, page 18.)

Hanandeh's fleet until recently consisted of single examples of the Boeing 737-400, 767-200 and 767-300ER. The former generally handled scheduled flights; the larger 767s, charters.

However, in June, an initial Airbus A319-100 was added and an A320 followed later in the summer. The airline will now concentrate on the European type for its scheduled services. Both Airbuses are leased, as are the 767s.

*From a
background in
freighters
Jordan's newest
airline is
carrying its
own weight.
Alan Dron
reports.*

"It's very difficult to give plans for the fleet," admitted Hanandeh. "We are still a small airline with a limited budget. As you know, the market for aviation is not very stable, so we're very careful."

Royal Falcon began life as a charter airline, but within a year had obtained a scheduled carrier's licence and now operates a small network of scheduled services to Sharjah and Abu Dhabi (UAE), Mosul and Najaf (Iraq) and Stockholm (Sweden).

Royal Falcon chose to open its UAE services to Sharjah rather than Dubai in March this year because Royal Jordanian already operated Amman-Dubai and an exclusivity ruling at the time forbade other Jordanian carriers from competing on the same routes as the national carrier.

"It was difficult for us," he admitted, "but we had to start somewhere. We didn't become millionaires on the Sharjah route but we covered our expenses."

The non-compete restriction no longer applies but, ironically, Hanandeh would still not serve Dubai. "From Dubai to Amman there are 80 flights a week and I don't want to get involved with that."

In June Royal Falcon started a second UAE service, this time to Abu Dhabi. The route has

Continued
on Page 20

CONTINUED FROM PAGE 19

“some way to go before making a profit but is doing much better than expected”, he said.

Sitting among the collection of Middle East destinations, Stockholm may seem oddly out of place. But, Hanandeh explained, Jordan is a popular summer destination for Swedish tourists, while there are substantial Iraqi and North African communities in the Scandinavian nation. Amman is a convenient connection point for Iraqis and nobody else operates on the sector.

The newest destination for Royal Falcon is Khartoum. To Europeans, the Sudanese capital may seem unappealing but, according to Hanandeh, “It’s a very nice market.”

Not only does the route have significant business traffic, but Sudan’s ancient culture and relatively undiscovered status give it potential. A major component of business on the sector, he said, will come from Sudanese nationals heading to Jordan for medical treatment. He believes that up to 70 per cent of Sudan-originating traffic may fly to Jordan for this reason.

At the time of writing, the airline hoped to start services this autumn to Saudi Arabia – possibly both Jeddah and Medina. Additionally, the airline has rights to fly four scheduled services a week from Amman to Sharm-el-Sheikh on the Egyptian Red Sea coast (already a popular Royal Falcon charter destination) and is looking at establishing a link to Cairo.

Next on the agenda is a move into Eastern Europe, with Sofia or Warsaw the two contenders. Initially one of the two cities had been considered as an intermediate stop for the Stockholm flights, as Sweden “especially in winter won’t make a fortune for us”, but the Bulgarian and Polish capitals are now being looked at as destinations in their own right.

Wish list

Looking further ahead, Royal Falcon hopes to start operating to London Gatwick and Düsseldorf, perhaps as soon as 2011, with Madrid, Moscow and Rome on the wish-list for coming years.

Turning east, the airline also has ambitions to start services to Sri Lanka, Thailand and Pakistan. Amman-Karachi is regarded as particularly promising for business traffic.

Basing itself at Amman’s Marka Airport, rather than the capital’s better-known Queen Alia International, has been beneficial to Royal Falcon in its early years, said Hanandeh. “It’s much easier for us because we’re the only scheduled carrier working from there so we avoid delays. It’s in a good location and this is a very strong point for us. It’s less than 10km and 15 minutes by taxi from the city centre, whereas Queen Alia is about 45km away and can take up to 60 minutes in the rush-hour.

“The Marka airport authorities appreciate what we’re doing right now and passengers and customers would like to see us stay there. We also do our own handling; if I move to Queen Alia I have to have extra money for that.”



Hanandeh, from RJAF to Royal Falcon

Before founding Royal Falcon, Captain Ziad Hanandeh had a successful career with transport units within the Royal Jordanian Air Force (RJAF), long recognised as one of the most professional air arms in the region.

Having joined the RJAF in 1970 and being sent to the US for flight training, he graduated in July 1971 and was posted to the RJAF’s 3 Squadron, then flying the Douglas C-47 and De Havilland Dove.

During 1974-75 he was seconded to the fledgling UAE Air Force, piloting DHC-4 Caribous and DHC-5 Buffalos, then returned to Jordan to fly CASA C-212s and the Lockheed C-130 Hercules.

In 1978 he was posted to Jordan’s Royal Flight, where he stayed for 18 years until appointed a base commander. In 1998 he became assistant to the RJAF’s Chief of Staff for administration. He ended his military career in 2000 as a major-general.

However, Royal Falcon’s presence at Marka is about to shrink. An agreement between the Jordanian government and the national airport authority stipulates that all scheduled airlines should operate from Queen Alia and so a move to the newer airport is imminent. “I believe that by the end of the year they should be able to accommodate us there,” said Hanandeh. However, he will continue to operate charter and cargo flights from Marka.

Hanandeh has ambitions, too, for Royal Falcon’s sister company Jordan International Air Cargo (JIAC). The freight specialist set up operations in 2005 and was the result of plans by Jordan’s monarch, King Abdullah II, and his younger brother, Prince Faisal, to make the nation a regional cargo hub.

JIAC currently operates two leased Ilyushin Il-76 freighters. However, these are effectively barred from much of Europe due to noise restrictions and thus operate mainly on Middle East and African routes.

It had been apparent for some time that the aircraft’s usefulness would become increasingly limited by these restrictions and so, in 2008, JIAC ordered two of the much-improved Il-76TD-90s with their high-bypass Aviadvigatel PS-90A engines, which comply with Stage 4 noise regulations.

The arrival of the new aircraft – one is due late this year, the second in April 2011 – opens up considerable potential, said Hanandeh.

“We can’t wait to get them because they offer a saving of around 17 per cent on fuel, have increased range and their cargo capacity rises 15 tonnes to 60 tonnes compared to the earlier aircraft. That would give us the ability to cross the Atlantic after stopping at Shannon in Ireland.”

Hanandeh believes that the aircraft would fit well into the transatlantic cargo market: “It’s a very popular aircraft right now and it’s a lot cheaper than a 747.”





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How to survive a

Launching just months before the global recession hit the freight business caused major problems for the UAE's first dedicated cargo airline. A major change in direction was necessary for survival.

Alan Dron reports.

Just months after Midex Airlines started flying in spring 2008, the slowdown started to make itself felt. By late that year the world air freight business was experiencing sharp declines in volumes and, like most cargo specialists, Midex was starting to suffer.

The problem was exacerbated by passenger airlines selling under-floor cargo space at rock-bottom prices, said Midex's director-general, Jassim Albastaki.

Major airlines operating from Dubai to western European destinations were compensating for empty seats in their cabins by filling their holds with freight at prices that were undercutting Midex by as much as 50 per cent, he said.

It was a baptism of fire for the airline, which had grown out of Midex International, Europe's fifth-largest freight integrator, specialising in door-to-door document and package delivery. Based at Paris's Orly Airport, the group has some 25,000 employees in 32 countries, but the Midex

International's 'house' airline is not a widely-recognised name in Europe.

This, said Albastaki, is because it operates as a 'wholesaler', not a 'retailer'. Much of its business comes from large organisations – notably the postal services of France, Switzerland, the UK and UAE – rather than individuals, so it does not have a high public profile.

Parent group Midex International, founded by Lebanese-US entrepreneur Dr Issam Khairallah, was set up at Orly in 1990 and, like freight forwarders such as FedEx and UPS, eventually decided it should create its own airline. (Its current fleet consists of seven Airbus A300B4-203F freighters, plus three Boeing 747-228Fs; the latest two 747s were acquired from Air France last spring).

Midex Airlines was thus set up at Al Ain Airport in Abu Dhabi in 2007, starting flights the following spring. Midex chose Al Ain as a base, rather than Dubai or Sharjah, after it came to an agreement with the Abu Dhabi Airports Company (ADAC),

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- Standard Hardware:** Shows various bolts, nuts, and washers.
- Wire and Cable:** Shows spools of wire and cable.
- Composites:** Shows composite materials and equipment.
- Hot Bonding Equipment:** Shows a hot bonding machine.
- Consumable Materials (Chemicals):** Shows various chemical containers and bottles.
- Bulbs & Lamps:** Shows various light bulbs and lamps.
- Semi-finished Materials:** Shows various metal components and parts.
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Midex life crisis



said Albastaki. "From a strategic business point of view they wanted us to put Al Ain on the map of cargo airports. They would build the facility for us and give us a grace period from landing and parking charges and at the same time we would try to keep Al Ain on the cargo map."

There were also operational advantages to being based at the desert oasis city's airport, said Albastaki. With its relatively light traffic, Midex could have slots whenever it required them. Also, the dry climate meant that it did not suffer from the winter fogs that can cause delays at Dubai, Abu Dhabi and sometimes even Sharjah. A final plus was that accommodation costs for personnel were lower than in Dubai or Abu Dhabi.

But all those advantages looked as though they might not be enough to prevent Midex hitting the rocks when the recession bit. Major changes were required.

Previously, its business plan had called for the Airbuses to fly scheduled services from several cities on the Indian sub-continent to Al Ain, where around 30 per cent was offloaded for UAE recipients while the remaining 70 per cent was consolidated on to a 747 for onward flights to Orly.

"We decided to reduce the number of our scheduled flights to the minimum and focus on charters," said Albastaki. Whereas Midex had initially flown 80 per cent scheduled flights and just 20 per cent charter, those percentages almost reversed, to 30:70. The airline also began operations to new destinations, such as Afghanistan, Iraq and Libya and focused on large-volume payloads – hence the recent growth of its fleet of Boeing 747-200Fs, with its ability to swallow large items through its nose cargo door.

The new strategy worked, said Albastaki, and the airline is now seeking additional 747-200Fs. The Afghan and Iraqi markets were sucking in construction materials to rebuild themselves, while Afghanistan also developed as an importer of perishables.

Additionally, China's booming economy has meant regular flights from Beijing carrying textiles and electronic goods for the European market.

The airline has a 'war chest' of around \$500 million – partly from its own resources and partly from investors the director-general declines to



Albastaki moves from hotels to airlines

The airline industry is a relatively new field for Jassim Albastaki. An Emirati, he graduated from Miami University in international hotel management, to which he later added an MBA in finance and business management.

Having worked for several Dubai-based semi-governmental organisations, he had known Midex International president Issam Khairallah for more than 15 years when Khairallah came to Dubai in 2005 to begin the process of setting up his airline.

Having helped him in this, he had been preparing to start the search for a chief executive for Midex Airlines when Khairallah said: "Why look for someone when you are here?"

name – with which to fund expansion. With this hard cash, the airline can drive a bargain with potential sellers and it is currently negotiating for three more Boeing 747s with an unnamed airline. It hopes that its fleet of the type will thus have doubled to six by the end of 2011, making it the biggest operator of the cargo variant in the Middle East.

Its fleet of seven Airbuses, meanwhile, is increasingly being used for long Aircraft, Crew, Maintenance and Insurance (ACMI) leases.

Midex's financial resources will also be used to buy equity stakes in other airlines or air freight infrastructure organisations. This funding could be used by smaller airlines seeking entry to local market sectors to buy or lease aircraft, or airports seeking investment, suggested Albastaki. There have been several interested parties to date, he added, but none has yet met Midex's criteria for investment.

Already the largest pure freight airline based in the Gulf, Albastaki hopes that in two to three years it will be the largest in the entire MENA region.

It will be important, he said, to ensure that this growth does not lead to a dilution in service standards. To keep itself up to the mark, the airline is considering formally adopting a slogan used elsewhere in the Midex group, 'It's on time, or it's on us', waiving charges if an item fails to get to its destination on schedule. The airline will, he accepts, have to look closely at several factors, such as slot availability at its various network points, before it binds itself to such a stringent standard.

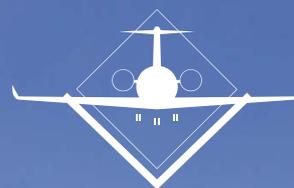
The biggest threat to Midex's ambitions is the same one that gave the company problems during the recession – national carriers, in particular, are continuing to offer under-floor space at low rates.

Just a year after it launched its services, Midex was named 'Best air cargo operator 2009' by Middle East Logistics magazine. The airline hopes to build on this success.

Midex's licence allows it to enter the passenger market and another organisation – again, Albastaki is discreet as to identity – has sought to use its Air Operator's Licence for this purpose, with Midex monitoring the operation. However, negotiations are on hold and the director-general thinks it unlikely that the airline will diversify into this field in the next two to three years.

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The Superjet 100: taking on Western markets.



Russians join the jet set

With a strong tradition in building aircraft, Russian manufacturers are looking at taking on new markets.

Jon Lake reports.

After a period in the doldrums, Russia's airliner industry is making real efforts to recapture market share, not least in the Middle East. For many years, the massive Soviet national airline, together with the airlines of the USSR's many client states and Warsaw Pact and Cold War allies, provided a guaranteed market for the Soviet commercial aerospace sector. Its products did not necessarily have to compete with rival Western airliners on a commercial basis and could, instead, be tailored to meet local requirements – whether that was an ability to operate from more primitive runways, or the facility to load passengers who would carry and stow on board their own luggage and even livestock.

Following the collapse of the USSR and the end of the Cold War, everything changed. Economic reforms meant that new airlines in the former Eastern Bloc had to operate commercially, and there was a rush towards the acquisition of modern Airbus and Boeing jets.

The new airliner programmes underway at Ilyushin, Tupolev and Yakovlev withered. The new jetliners developed as the Cold War drew to a close (including Tupolev's Tu-204 and Ilyushin's Il-96) were commercial failures. They were built in tiny numbers, they failed to win significant export orders, and Aeroflot (and the 300 smaller regional 'babyflot' airlines which emerged out of the old Aeroflot) ditched them with alacrity in favour of Airbus A320s, 319s, 321s and 330s and Boeing 767s.

But the Russian aerospace industry is fighting back, and is working hard to re-establish itself. Companies like Sukhoi and Irkut urgently need to diversify, and new civilian programmes promise to allow this. It is no longer enough to rely on Russian military programmes (and associated exports), as Russian military aircraft procurement continues to stagnate.

Under the so-called Federal Civil Aviation Programme (FCAP), the potential new airliner market has been divided up

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according to passenger capacity, and different companies or groupings are addressing these market opportunities.

The initial priority is to produce indigenous alternatives to the various versions of the Airbus A320 and Boeing 737, since these now dominate the jetliner market, but also have full order books and long backlogs. Russia hopes that its new offerings might meet the need of airlines that need an aircraft now and can't wait for a new 737 or A320 – or in some cases can't afford one.

At the smaller end of the spectrum, Sukhoi is forging ahead with its Superjet 100 family, seating 68-83 passengers in SSJ 100-75 form, and 86-103 passengers in SSJ 100-95 form. These are just a little smaller than the smallest offerings from Boeing and Airbus, and take on the new Regional Jets from Bombardier and Embraer.

Sukhoi and its partners aimed to provide 10-15 per cent lower operating costs than were achieved by the Embraer or Bombardier competitors by embracing advanced leading-edge technologies to reduce operating costs, including a sophisticated third generation supercritical wing, a low weight airframe and aircraft control laws that were optimized to minimize drag.

Sukhoi also selected a slightly wider fuselage cross-section to ensure greater comfort and passenger appeal, with the same cross-section as a 'mainline' aircraft, with a wide aisle, full-sized seats and full-sized luggage bins.

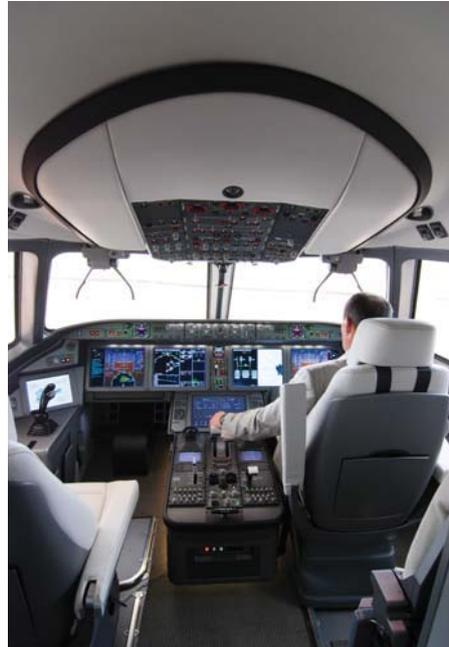
The Sukhoi programme is the most advanced of the new Russian jetliner projects. The first of four flying prototypes made its maiden flight on May 19 2008 and a fourth aircraft flew on February 4 this year.

Gain export orders

The Sukhoi Civil Aircraft Company (AVPK Sukhoi) announced its new Russian Regional Jet (RRJ) programme in June 2001 and aimed primarily to gain export orders, rather than relying on any commitment from Aeroflot. The company, therefore, ensured that its aircraft was competitive on the global market and designed it from the outset to meet Western certification standards and to feature main systems supplied by what Sukhoi called "the most important and reliable Western Suppliers". The company even formed an early teaming with Boeing for joint development and marketing of the aircraft.

The aircraft was renamed as the Sukhoi Superjet 100 in July 2006. In 2007, Sukhoi formed a strategic partnership and joint venture with Finmeccanica subsidiary Alenia Aeronautica. Finmeccanica acquired 25 per cent of Sukhoi's civil division and undertook to provide no less than 25 per cent of programme financing in return. The resulting SuperJet International consortium was co-owned; 51 per cent by Alenia Aeronautica and 49 per cent by Sukhoi.

More than 30 foreign partnership companies are involved in the Superjet project. Thales, for example, provides the open architecture



The MC21 cockpit.

integrated modular avionics, including the cockpit displays, communication, navigation and surveillance systems; Ipeco supplies the crew seats; CMC Electronics is responsible for the CMA-9000 flight management system and Leibherr Aerospace (with the Voscod Design Centre) supplies the digital fly-by-wire (FBW) flight control system, the environmental control and the air conditioning system.

The Sukhoi Superjet 100 is the first regional aircraft employing an advanced digital FBW flight control system (without mechanical back-up).

B/E Aerospace designed the cabin interior layouts and fittings, as well as the crew and passenger oxygen systems, while the twin-wheeled tricycle landing gear is the product of Messier-Dowty, with Goodrich wheels and brakes. Other companies involved include Autronics/Curtiss Wright, Hamilton Sundstrand, Honeywell, Intertechnique, Parker, and Vibro-Meter.

The SaM146 turbofan engines are also the product of an international collaboration, with NPO Saturn and France's Snecma forming the PowerJet Consortium. The engines are fitted with state-of-the-art full authority digital electronic controls (FADEC), and feature a 20 per cent reduction in engine parts count, for maximum reliability and maintainability with reduced maintenance costs. The engines exceed existing ICAO noise and emissions requirements.

Meanwhile, a team led by the Irkut group, is working on the three aircraft that form the MS-21 family, whose prototype will be completed in 2013, leading to a maiden flight in 2014, with certification and first deliveries following in 2016.

The 162-seat MS-21-200 will be pitched against aircraft like the Airbus A319 and the

Boeing 737-700, while the planned 181-198 seat MS-21-300 will compete against the Airbus A320 and the Boeing 737-800.

The stretched 212-230 seat MS-21-400 is intended to compete with aircraft like the Airbus A321 and Boeing 737-900ER.

Oleg F Demchenko, president of the Irkut Corporation, has outlined fairly modest targets for the new aircraft, stating: "Half of the Russian market and 10 per cent of the world market will be enough."

The MS-21 team includes the Irkutsk Aviation Plant, the new Irkut AviaSTEP Design Bureau, the Russian Avionics Design Bureau, and Beta Air, with Sukhoi responsible for the whole wing, Yakovlev designing the aluminium fuselage and Beriev taking responsibility for the empennage.

The MS-21 will make extensive use of advanced technologies and materials to achieve a 15 per cent reduction in weight compared to equivalent aircraft, and will use more modern efficient engines to leverage a 15 per cent improvement in fuel consumption.

Domestic market

MS-21 aircraft for the Russian domestic market will be powered by the Russian Aviadvigatel PD-14 engine, but for export the aircraft will also be offered with Pratt & Whitney's PW1000G – the first in that company's new line of PurePower engines, also been selected to power the Bombardier C Series, and the Mitsubishi Regional Jet (MRJ). These promise double digit reductions in operating costs, fuel consumption, and in CO₂ and NO_x emissions, and noise.

The Russian designers are confident that their new aircraft will be more advanced and more cost-effective than the older Airbus and Boeing competitors.

Like the Sukhoi Superjet, the MS-21 will incorporate a large number of Western systems, provided by a broad base of US and European partner companies.

Hamilton Sundstrand will supply the auxiliary power unit, an advanced electric power-generating system, the secondary electrical power distribution system and wing anti-icing and bleed air conditioning for the nitrogen-generation system. Rockwell Collins (partnering with Avionika) is contributing avionics systems and controls, including electronic flight bags, communications and navigation equipment, as well as sidestick controls, speed brake control lever modules, the rudder control system, and the trim control panel. Goodrich, teamed with Russia's Aviapribor, is providing actuation systems for the advanced fly-by-wire flight-control system.

For operators in the Middle East, the new Russian airliners promise to offer cutting-edge technology at very competitive prices, and to allow much more rapid deliveries than can be offered by Boeing and Airbus. And they promise to be every bit as commercially competitive as their Western rivals, using similar avionics systems and with similar performance.

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First Airbus A330-200F delivered to Etihad

Having placed the launch order for the new Airbus A330-200F freighter at Farnborough in 2008, Etihad formally received its first aircraft at this year's Society of British Aerospace Companies (SBAC) show.

The first of the three aircraft ordered was handed over to the airline's chief executive officer, James Hogan, by Airbus president and CEO Tom Enders.

Much of the legacy fleet of converted and purpose-built cargo Airbus A300s and A310s, Boeing 757s and 767s, and McDonnell Douglas DC-10Fs and MD-11Fs, is now nearing retirement. With much of Boeing's attention focused on bigger, 747 and 777-based freighters, Airbus formally launched the A330-200F freighter at the 2006 Farnborough Airshow.

The aircraft is being offered with Rolls-Royce Trent 772B-60 or Pratt & Whitney PW4170 engines, and features a large (141 x 101-inch) electrically-controlled and hydraulically-operated main-deck cargo door. This is intended to replace the A300-600F and A310F, and to compete with the Boeing 767-300F.

The A330-200F fits 'below' the 747-8 and 777F in capacity terms, but offers a true state-of-the-art solution, with very low cost per freight tonne mile. It produces the lowest noise levels and CO2 emissions for a freighter aircraft.

Interestingly, Airbus has postponed its own higher capacity cargo offering, the A380F, clearly believing that the biggest market opportunity today is for smaller freighters, which allow operators to increase frequencies and build up their operations as the recovery of freight traffic gains momentum. The manufacturer claims that its A330-200F is the "right aircraft, right now".

The A330-200F is designed to carry up to 70 tonnes on 3,200nm (5,930km) sectors, or 64 tonnes on 4,000nm (7,400km) sectors. The main deck can accommodate up to 23 (88in x 125in) side-by-side (SBS) pallets or, if optional secondary structure is installed, a single row (SR) load of 16 (96in x 125in) pallets can be carried. By contrast, the Boeing 777F carries up to 103 tonnes, or 37 (96in x 125) pallets and has a full payload range of 4,895nm (9,065km). The new 747-8 carries 140 tonnes, over a range of 4,390nm (8,130km).

The new A330-200F has a versatile new main-deck cargo

loading system that is designed to accommodate both pallets and containers in a wide variety of configurations. The freighter also had a revised nose landing gear, which is designed to give a level deck for cargo loading, as the standard 'airliner' A330-200F has something of a nose down 'sit' on the ground. The new nose gear uses a standard A330-200 nose oleo and wheels, but is attached lower in the fuselage, necessitating a distinctive bulged fairing under the nose to accommodate the nose-gear when retracted.

The first A330-200F made its maiden flight on November 5 2009 and the type was certificated on April 9 this year. Etihad's cargo division, Etihad Crystal Cargo, was scheduled to receive its second aircraft as Arabian Aerospace was going to press, joining pairs of A300-600s and MD11s.

Etihad chief executive officer James Hogan expressed his satisfaction with the performance of the company's cargo division which, he said, had seen an 18 per cent increase in cargo tonnage carried, and which he expected to achieve 'break even' by the end of 2011, and then move into profitability.

Acquisition of the A330-200F reflected Etihad's determination to achieve further expansion and growth.

"The new aircraft will become a key part of our freighter fleet and make a major contribution to building the strength and network of our cargo business. The additional capacity will help us significantly expand our footprint in Asia and Europe, including China, as well as enhancing our worldwide charter services," he said.

Airbus has 62 further firm orders for the A330-200F from nine customers: Intrepid Aviation Group (20), Flyington Freighters (12), OH Avion LLC (8), MatlinPatterson (6), BOC Aviation (5), MNG Airlines (4), Aircastle (3), Malaysia Airlines (2) and Turkish Airlines (2).

ACT Airlines has also signed an MOU for two aircraft. As well as offering new-build A330-200F freighters, Airbus has proposed conversions of existing A330-200 airliners.

Significantly, the A330-200F lies at the heart of the Airbus/EADS North America KC-45 tanker bid to the US Air Force. If successful, EADS will assemble the KC-45 in Mobile, Alabama, where the civilian A330-200F freighter aircraft will also be built.

'The additional capacity will help us significantly expand our footprint in Asia and Europe, including China.'

James Hogan



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The Middle East region is currently enjoying a frenzy of airport development. Often overshadowed by flamboyant terminal designs, hidden networks of technologies are the crucial backbone of commercial flight. Ground-based operations are taking advantage of the benefits ushered in by recent innovations in airport and aerospace engineering. These technologies are aimed at elevating efficiency in airport ground services.

Report by Keith Mwanalushi.

FEATS ON THE GROUND

1. POWER ON DEMAND

Even though it will take some time to reach the projected volumes from the new airports developing in the Middle East, the environmental impact from these mega facilities is driving demand for better electronic technology for ground support equipment (GSE).

Dubai-based Dnata Airport Operations is one of the largest providers of ground handling services in the Middle East. Dnata has made significant investment in GSE technology in recent months as it expands its business in the region.

The company has taken many of the environmental concerns into consideration as Caroline McComb, public relations controller, explained: "At the Dubai operation we are actively exploring 'greener' GSE alternatives and are

currently trialling both electric and hybrid baggage tow tractors, in addition to other potential diesel fuel alternatives."

A key benefit of electric and hybrid tow tractor units, (hybrid when operating in 'electric mode'), are zero emissions at the point of use. "This means that in an enclosed environment, for example, a baggage make-up area, they have the ability to offer significant improvements in air quality," said McComb.

Of course, the overall carbon footprint should be considered when looking at environmental trends; how the electricity, (required to charge batteries), is generated. In Dubai, power generation fuel is primarily gas, which is generally accepted as one of the cleaner fuel sources. Combined with this and improvements in battery technology in recent years, introducing more electric vehicles is becoming a more attractive option.

Dnata is the sole ground-handling provider at DWC Al Maktoum. McComb said: "The new airport provides the opportunity for Dnata to re-ignite business growth in an unconstrained capacity environment. As things stand today, 20 cargo airlines have committed to starting operations within the next few months and project work continues for the opening of the passenger terminal before March 2011."

The ever-changing demands of airport operations and the quest to handle increasing passenger numbers more efficiently and cost-effectively is ever-more evident. Leading-edge systems from biometric technology to common use check-in kiosks in Cairo and other locations are being rolled out with several major "firsts" for the airport industry in the Middle East and North Africa.

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2. RAMP AND AIRSIDE TECHNOLOGY



The movement of aircraft, equipment and people can be a hectic and often crowded activity. Ramp operations must be highly orchestrated if airports and airlines are to operate safely, profitably and on time. Hundreds of small details have to be checked and cleared by ground personnel before push-back. If the ramp control process is inefficient, the knock-on effect caused by delays adds to the operators' costs.

With this in mind, the new terminal 3 at Cairo International Airport (CAI) is using the world's first context-aware operational platform to control all employee access to critical ramp control and management applications.

ARINC developed the breakthrough technology. Employees at terminal 3 are linked only to those IT applications they actually require, according to the profile, work assignment, type of electronic access and location. The aim is to ensure appropriate and

secure exchange of passenger information, flight data, security prescriptions and maintenance tools amongst other duties.

Airports have to comply with international safety regulations that demand minimum safety distances at airside but, at the same time, there is an increasing pressure to provide more flexibility, faster operational procedures and higher gate efficiency.

"The result is that aircraft movement and parking areas are getting busier all the time and solutions such as multi-aircraft ramping systems (MARS) are being applied more and more," said Ben van Leest, managing director at Simtra AeroTech AB.

The Swedish-based firm is behind the Obstacle Surface Planner and the comprehensive Pathfinder A5 software for airside planning, design and operations. The software offers simulation of aircraft and vehicle movements with display of jet blast, safety

clearances, realistic push-back and assists in the design of airside infrastructure.

Pathfinder A5 is being used at King Khaled International Airport in Saudi Arabia and has also been adopted by the Department of Civil Aviation of Abu Dhabi (UAE).

"The latest major improvement in the software is related to the gate design. The new set-up makes it possible to design a gate with multiple lead-in lines, passenger boarding bridges and fuel pits accommodating a large variety of aircraft. It is truly unique how quickly and accurately this process can be performed," added van Leest.

Allauddin Jaffr, head of planning at the Abu Dhabi Airports Company (ADAC) said the results ADAC has achieved by using this software have been remarkable. "It has added robustness and quality to our operational planning practice," he noted.

3. GROUND SURVEILLANCE

While construction continued at Dubai World Central (DWC), the Department Of Civil Aviation recognised a more immediate need to add surface surveillance to Dubai International Airport (DBX). Sensis Corporation was selected to deploy its multilateration to DBX and, according to the company, the system is currently being installed.

At the new Al Maktoum International Airport, Sensis is contracted to supply the surface multilateration portion to the advanced surface movement guidance and control systems (A-SMGCS). The same technology was recently installed at London Stansted and provides high accuracy surveillance to monitor the movement of aircraft and vehicles on the ground in order to increase the safety and efficiency of the airport's surface.

With regard to the installation of an efficient ground surveillance system, the projected volume from an airport with five operational runways seems not to be of

major concern. That is according to John Jarrell, vice president and general manager, Sensis Air Traffic Systems. "A multilateration system is highly dependent on that specific airport's geography. The size of an airport does not pose any specific challenges for Sensis multilateration. It is scalable from large, complex airports such as Al Maktoum to single runway airports."

Jarrell indicated that, as an airport adds runways, taxiways, new terminals or other structures, multilateration could be adapted or extended to meet the new challenges. The easily-deployable nature of the multilateration sensors makes this possible. However, the schedule to deploy this particular technology at DWC Al Maktoum is "difficult to determine at this time" as construction of the greenfield area is still in progress.

"We are also working with the General Authority of Civil Aviation for Saudi Arabia for A-SMGCS and wide area

multilateration (WAM) systems at King Fahad and King Abdul-Aziz International Airports. The systems are in the process of being installed and we anticipate both airports to be operational in 2011," Jarrell said.

Additional technology being used to manage the efficiency of ground operations is the Sensis Aerobahn airport surface management system. Jarrell explained: "It's an efficiency tool that enables airport owners, operators, air navigation service providers and airlines to more efficiently manage airport surface traffic. Aerobahn combines operational information with surveillance data to provide users, such as a ramp manager, with a comprehensive view of aircraft on the surface. With this data and situational awareness, users can proactively manage gate conflicts and resources, better coordinate push-backs from the gate and manage crew duty time requirements."



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Navigate your airport to a profitable future

IATA's Simplifying the Business is a call to airlines and airports to work to improve the passenger experience – and in so doing save costs for the airlines. Replacing paper tickets with e-tickets was the first stage of the digital revolution that will affect everybody involved in air transport. Now the industry is looking at removing queues, improving relationships with the customer and increasing revenue. Alan Peaford reports.

The future is simple ... just ring the changes

Michael Ibbitson, vice president, information and communication services for Abu Dhabi Airports Company (ADAC), is a man who has seen the future and embraced it.

Technology is moving at a rapid pace and, with the development of new major airports throughout the Gulf, the airport operating companies have had to move faster than most to second-guess where it will go next.

With responsibility for the IT at the five Abu Dhabi airports, Ibbitson has been watching the Simplifying the Business (StB) initiative from IATA and has been ready to back his instinct with investment.

ADAC has signed a contract with aerospace IT specialists SITA that will bring sweeping changes to all of the emirate's airports, turning them into high-tech centres of passenger processing.

Abu Dhabi International Airport, which saw 11.7 per cent passenger growth in the first half of this year, will become the first major hub in the Middle East to benefit from the new IATA common use passenger processing systems (CUPPS). The agreement covers more than 350 check-in counters, 24 self-service kiosks for multiple airline use, and upgrades the baggage reconciliation system across Abu Dhabi Airport's three terminals – Al Ain International Airport, Al Bateen Executive Airport and Abu Dhabi National Exhibition Centre (ADNEC) terminal and City terminal.

Ibbitson said: "We at ADAC want to be an early adopter as it will mean more efficient processes for passengers and lower operating costs for airlines."



Michael Ibbitson: "It will mean more efficient processes for passengers."

The move is a taste of what is to come.

The whole concept of the digital traveller will see a greater dependence on passengers' own mobile phones and home or office-based computer access.

According to SITA, air travellers are typically ahead of the rest of the population in their adoption of technology. As "digital travellers", they have growing expectations of the technology-based services that airlines should deliver to them.

SITA senior director of portfolio marketing, Jürgen Kölle, said airlines are aiming to increase

the portion of tickets sold directly to passengers, allowing the airline to own a direct customer relationship.

Today more than 50 per cent of tickets are still sold through global distribution systems (GDS) and online travel agents but SITA believes this will decline to just above 40 per cent by 2013, while the airline direct will grow to the same percentage.

The airlines – and airports – are aiming to use increased mobile technology to keep in touch with their customers throughout the whole travel experience.

A survey carried out by SITA showed that 45 per cent of airlines already have, and another 41 per cent plan to have, notifications on flight status and delays available by 2013. That means that nine out of 10 airlines plan to have mobile notification available soon. Currently 28 per cent of airlines have online check-in available via mobile, with another 52 per cent determining to offer it by 2013.

More than three quarters of airlines will invest in IT projects to broaden mobile services during the next three years, including the use of mobile as a sales channel.

Enabling passengers to make ticket modifications/upgrades on their mobile phone is planned by almost 60 per cent of respondents in the next three years (from only six per cent today). "This clearly demonstrates the shift from using the mobile to 'push information to the customer' to viewing mobility as 'the technology to perform business transactions and to generate revenue'," said Kölle.

At the IATA AGM in Berlin earlier

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2D barcoded boarding passes direct to a smartphone will be common over the next year.

BlackBerry

4 [Battery Icon] [Signal Icon] [GPRS Icon]

Boarding Pass



Name: PAUL BEHAN



this year, the StB process using mobile technology was shown. Online check-in was done through the phone with a 2D barcode being displayed on the phone and scanned at the check-in kiosk, where bag tags were printed, allowing for a fast drop-off.

With pre-recorded biometrics in place with the authorities, the digital passenger could pass through security and on to the aircraft by using just the mobile phone for a boarding card and passing through biometric screening machines.

And when baggage goes missing, passengers can be kept informed via SMS messaging and track their bag's progress.

But it is in the airport, itself, that the technology is most in demand. Finding ways to speed-up airport border checks while keeping the skies safe has been a hot topic and has been exacerbated by silo thinking from the different stakeholders, such as the airlines, the airports and the government agencies responsible for immigration and security.

IATA is taking steps to address this.

"We have merged our StB programme with the simplified passenger travel initiative to form a cross-industry passenger experience group," explained Stephan Copart, project manager of IATA's fast travel programme. "This allows us to address the big picture – to bring new stakeholders into the working group, like governments, to work with us on addressing the entire end-to-end passenger process."

Security part of the solution

So, with security now part of the solution and not just part of the problem, can we expect the queues at airport checkpoints to disappear?

Not straight away, according to Thomas Marten, SITA's vice president of business development. "The weak link in the system is validation of identity. Officials need to be sure that the person, who presents themselves at the airport, is the person they say they are. Today it is done manually, either by the airline check-in agent or by the immigration official. Tomorrow – or today in some countries – it will be automated using biometrics."

"Securing airports by questioning every passenger is just not feasible," said Bobby Varma, director of business development at iris recognition specialists Sarnoff Corporation. "It would cost in the range of \$62bn to \$150bn – more than 10 times the current spend on airport security.

"We need technology to help process the low-risk passengers so that questioning can be focused on the high-risk."

But, while biometric technology is crucial for verifying the identity of a passenger, it will not be enough on its own, said Varma. "It is all about advance risk assessment. To determine that, though, governments need to capture data on the passenger and make a decision about them before they arrive – high-risk, low-risk, or somewhere in between."



The digital airport – a CEO's view

Chief executive of Dubai Airports, Paul Griffiths, has clear views on what the digital airport concept means – and how the various stakeholders need to work together to make it a success for the passengers and the investors. These were the key points from his presentation to the SITA IT Summit.

- Airports should become the showcases and test-beds of the latest trends in technology and retail;
- Airport buildings must be functional, designed around optimal flow and a faster rate of application of technology;
- Airport IT modules must work and communicate together, seamlessly.

These need to be developed through a partnership, with the supplier's role changing to integrator and partner. It requires vision, collaboration, customer-focused processes and the smart application of technology. This needs to involve the airports, airlines, retailers, partners and other stakeholders work closely together – genuinely integrated – across the customer journey, from start to finish.

The cost of not doing this is far more significant as the complexity and volume of air travel continues to grow.

If we glimpse that future:

- The customer's online booking, purchase, seat selection and API and biometric data are recorded well in advance;
- Baggage is dealt with as early as possible in the process and returned to passengers at their destination;
- Biometric data is captured quickly and used by all relevant agencies to confirm passenger ID, assess risk and link that risk to passenger name record (PNR);
- Baggage and boarding passes are issued automatically, as scanning occurs simultaneously and unobtrusively for all the processes.

All of this occurs in a matter of moments, freeing up the customer to dine or shop.

Griffiths warned that the air transport industry still has an extraordinary misalignment of cost and benefit. "In the past decade, while the airlines have lost US\$50bn, other partners in the overall supply chain have recorded strong profits.

"The trouble is that customer journey processes are in vertical silos, whereas the customer is asked to go through a horizontal process across those silos. There's no easy fix to this but the role of supply technology needs to change. It needs to become not a supply chain, but an integration chain, where the supply organisations act as partners and facilitators."

In essence, a consolidation of data known on a passenger will determine the risk assessment, while the biometric data will make sure that assessment is applied to the right person.

It is the direction most countries are going in. But, to be truly effective, requires moving beyond national borders and working together at the international level, so that threats are thwarted, such as the Christmas Day 2009 attempt to blow up a US-bound flight.

Marten believes that is now widely accepted. "We are going to see a lot more co-operation between governments – we are already seeing this in the EU."

The UAE – with both Abu Dhabi and Dubai investing in the technology – believes it has a mobile-savvy population that is ready to become true digital travellers.

"We have 176 per cent mobile phone penetration, which means that every adult carries two mobile phones and, generally, it's a Blackberry for business and an iPhone for personal," Ibbitson told the SITA IT Summit in Brussels.

Speed up the process

"Our digital traveller in Abu Dhabi is looking for technologies that speed up the process of getting through the airport.

"They use web check-in predominantly, or with the mobile phone where possible; they'll use kiosk check-in and they want it for all airlines; they want optional upgrade payments, document checking, frequent flyer management, bag tag printing, and a simple self-service drop-off for baggage.

"If there's a registered security screening programme, our passengers will definitely register online and try to use it; they're looking for mobile device applications for flight information, airport status and, if self-service boarding is available, they will try to use it.

"But there are also travellers that don't want those services, who prefer to go to a counter for personal service, who want someone else to take the responsibility of handling the processes.

"For Abu Dhabi, as we develop our new terminal building for 2015, we need to stick to standards such as those for StB and we need to let the market decide before we adopt certain technologies.

"As building takes place we need to make important IT decisions that will impact not just our digital travellers of the future, but also the digital aircraft, digital ground-handler and digital baggage systems."

A self-service boarding trial has been requested by the airport's major airlines and the Midfield Terminal complex building has been designed with a space reservation for self-service boarding at every single gate, said Ibbitson.

Depending on the success of the trial, the company will consider putting it into the final design of the building.

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WORKING TOGETHER TO FIND THE RIGHT SOLUTION

An airport is a complex structure. In order to ensure fast, smooth and efficient operations from day one, authorities need to rely on experienced consultancy that will successfully mix all the complex elements of airport operations and provide a high level of safety, security and service to users.

That is what the Munich airport management company, Flughafen München GmbH (FMG) has set to achieve at a number of project sites in the Middle East.

In November last year the consulting team of FMG began to prepare the New Doha International Airport (NDIA) on how to develop standard operational procedures. These included IT systems and baggage handling operational issues, according to head consultant Reinhard Zeiler.

FMG's Operational Readiness and Airport Transfer (ORAT) team is working together with various stakeholders such as Qatar Airways and government authorities towards the eventual transfer of operations from Doha International to NDIA, scheduled to go online in 2011. Moving its own operations from the old Munich-Riem Airport to the Erdinger Moos region in just one night in May 1992, highlights the team's international experience in this area.

At the start of 2010, Munich Airport signed a contract with Bahrain Airports Company (BAC) to assist in achieving greater efficiency in the field of airport management and business development. In order to improve the latter's aviation services, facilities and procedures, the partnership has included assisting BAC in the development of concepts, procedure and engineering process, hub development and operations.

Zeiler added that management support and support training are included, with coaching being provided at the aviation academy in Munich to develop the right environment to enable employees to perform all specialist training courses needed to follow the new standards and procedures.

The latest contract for FMG in the MENA region is for two airport projects in the Sultanate of Oman. The deal involves the commissioning, relocation and operation of the airports at Salalah and Muscat.

FMG's ORAT team will help shift operations from the old operations buildings at Muscat and Salalah airports into their new premises. The team begins work in November this year and will remain on site for four-and-a-half years.

KEITH MWANALUSHI



This spring, the German air navigation service provider DFS Deutsche Flugsicherung GmbH was taught an important lesson – events that bring air traffic of almost a complete continent to a standstill can happen at any time.

A prime example of this was the volcanic ash cloud, which moved over Europe in April, causing severe flight disruptions and restrictions in large portions of European airspace. While there is no way to prevent this type of natural phenomena from happening, collaboration and information sharing can certainly mitigate the consequences.

Ralf Diedrich, head of customer relationship management (CRM) at DFS, said: "Due to our well-established customer relations we could explain our actions and develop prompt and efficient solutions regarding how to proceed, together with the airlines."

Collaboration is key. One way for the Middle East to meet the challenges of its fragmented airspace, and at the same time improve cost-effectiveness, is to adopt a long-term approach like CRM, which addresses the aviation community as a whole.

DFS introduced CRM in 2004 with the goal of maintaining and developing trusting and co-operative relationships with its customers, which include international airlines as well as business and general aviation.

Open communication is the core of any type of CRM. By enabling a constant flow of information in both directions, CRM promotes co-operation and helps to balance interests. DFS has established communication channels aimed at all stakeholders

and all levels of management – achieved by organising regular customer events and workshops, as well as the periodic and event-based distribution of important news concerning operations.

CRM also supports strategic purposes. The long-term value created by well-established customer relations is mutually beneficial. Knowing about projects and the future orientation of others beforehand provides Air Navigation Service Providers (ANSPs), as well as airlines, with a firmer base for their strategic planning.

Achim Baumann, DFS regional manager, Middle East, explained: "Let's say we plan to introduce a new air traffic management system in our control centres – if we inform the airlines about these plans in advance they can prepare for the operating changes. In turn, if we know about the preferences and challenges of the airlines, we can design the system to help us provide the best possible support to our clients' strategic plans."

Additionally, DFS takes its customers' expertise into consideration, for example, when it comes to allocating personnel efficiently, optimising processes or organising airspace and route structure to support user preferences.

At DFS, customer relationship management also played an important role in mediating the conflicting demands of civil and military aviation. The first step was to set up an environment of understanding, which made it possible to define the different requirements of both parties and to focus communication on achieving a common goal. As a result, military and civil controllers have been working together side-by-side since 1994, based on a flexible use of airspace concept.

when there's a problem

NETWORK PARTNERS CRUCIAL TO SUCCESS

Jordan's Marka Airport, in the heart of the capital Amman, has a difficult balance to maintain.

Although scheduled airlines are now operating from Queen Alia International Airport 45km outside the city, Marka still plays an essential role for civil aviation, with a growing number of business jets, and it is also a major base for the Royal Jordanian Air Force.

So, when Jordan needed to plan for the future effectively, it turned to a company that has had decades of experience – Lufthansa Consulting.

The German firm was contracted a year ago by the Jordan Airports Company to provide technical assistance in the strategic company development. This included providing a strategic development plan and ground-handling feasibility study, as well as designing apron areas and planning how to manage the joint civil and military usage of both Marka and Mafraq airports.

Lufthansa Consulting – part of the aviation group which includes Lufthansa Airline, the MRO provider Lufthansa Technik and the IT specialist Lufthansa Systems – has developed an impressive track-record in the Middle East.

Earlier this year it became an industry partner of

AACO. "Building a network of co-operation partners is essential for the company to achieve a market position to satisfy the continuing demand for consulting services by airlines, airports or related organisations," the company said.

Lufthansa Consulting has been a separate entity within Lufthansa since 1988 and also works with ground-handling companies, cargo terminal operators, aircraft manufacturers and financial institutions.

Among its MENA customer operations are Egypt Airports in Cairo; Khartoum Airport in Sudan; and partners at Kish Freezone, Mashhad International, Iman Khomeini International Airport and Persian Gulf International in Iran.

"Our industry focus originates from our parent organisation," the company said. "We ensure that clients benefit from customised business solutions designed by consultants with a global understanding of the industry and in-depth knowledge of those topics that are critical for success."

"We know the aviation business!"

DFS values feedback and has established an extensive complaint-handling system. Every complaint is channelled quickly to the right person's desk, where it is evaluated thoroughly. For example, military pilots who experience difficulties with ATC, can now contact DFS directly without having to go through all levels of military hierarchy.

In 2005 the Civil Air Navigation Services Organisation (CANSO) formed a working group to define common principles for effective CRM. DFS, using its experience, contributed to this group and is now actively supporting the Middle East in establishing CRM and enhancing the mutual benefits for all parties involved in the process.

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The AH-6 Little Bird and the F-15 fighter are on the Saudi shopping list.

Saudis set to sign biggest arms deal with the US

Jon Lake looks at the background to the potential contracts between Saudi and the US.

As this issue of Arabian Aerospace closed for press, the US administration was expected to notify Congress of a planned arms sale to Saudi Arabia.

Valued at an estimated \$60bn, over the next five to 10 years, this is said to be the USA's largest-ever single foreign arms deal, and will see the Royal Saudi Air Force receiving some 84 new F-15SA fighter-bombers (with 70 surviving F-15S aircraft upgraded to the same standard), and with 70 AH-64D Apaches, 72 UH-60L Black Hawks and 36 AH-6i Little Birds going to the Royal Saudi Land Forces.

The planned deal represents the latest move by the USA to strengthen the capabilities of its regional allies, and to allow greater "burden sharing" in the maintenance of regional security, especially in the light of developments in Iran. The agreement also sees a further 'normalisation' of relations between the USA and the Kingdom of Saudi Arabia, which had frayed in recent years.

The proposed programme is of critical importance to the USA, since it will keep Boeing's St Louis factory busy and may help avoid a gap between the end of F-15 and Super Hornet production and work on a new trainer, and, possibly, a next generation fighter. The deal means that an estimated 77,000 direct and indirect jobs will be created or sustained in 44 states for Boeing alone.

It's also a very big deal for Saudi Arabia. Even with spare aircraft for training and attrition, 84 Eagles represents perhaps four new fighter-bomber squadrons – doubling the current fleet. The new aircraft are likely to be F-15SAs incorporating some or all of the features associated with the Silent Eagle, including an advanced AESA radar and signature reduction measures that will dramatically reduce radar cross-section, making the aircraft much more survivable, and giving a degree of 'stealth' or low observability, though this would be easy to over-state.

It is unlikely that long-range precision stand-off weapons will be integrated (they were excluded from the original Saudi F-15S, thanks to Israeli concerns), so that the Eagles will augment the RSAF's upgraded Tornado aircraft, which routinely carry Storm Shadow cruise missiles.

The F-15 element of the deal came as a grave disappointment to the Eurofighter consortium, which had hoped that Saudi Arabia might place a further order for its Typhoon fighter. The kingdom had already ordered 72 Typhoons and an equal number had been expected to be sold in a follow-on deal.

While progress of the Saudi Typhoon programme is a closely guarded secret, it is clear that there are problems. An aircrew training programme in the UK was suspended after just eight Saudi pilots had been trained with the RAF's No.29 (Reserve) Squadron, and ambitious plans for local assembly of the 25th and subsequent Typhoons seem to be in some disarray, with suspicions that some of the aircraft originally scheduled for final assembly in Saudi Arabia will now be built in the UK, and with reports that London may be pushing the idea that through-life support in Saudi Arabia may give greater industrial benefits than final assembly in country.

The Eagle buy may also reflect Saudi impatience in waiting for the Typhoon's long-promised air-to-ground capabilities to finally materialize.

The Saudi's helicopter purchase will also come as a disappointment to European manufacturers, since it seems to bring to an end hopes of selling the AgustaWestland AW101, Eurocopter Cougar and/or NHI NH90A to Saudi Arabia. It also ends Russian efforts to sell a large number of Mil Mi-17s to the Saudis.

The use of helicopters in operations against Houthi rebels in North Yemen was revelatory for the Saudis, providing the Army with sufficient mobility to operate effectively across the vast territory of Saudi Arabia, and with attack helicopters proving more effective than fast jets in anti-guerrilla operations in mountainous and difficult terrain.

The USA is already lining up further arms deals for the kingdom, worth an estimated \$30bn, and including the terminal high altitude area defense (THAAD) air missile defence system, designed to intercept short and intermediate range ballistic missiles like the 'Scud'.

Saudi is also likely to be offered the US Navy's new Littoral Combat Ship.

Sukhoi's iconic fighter is performing with the Algerian air force.

Jon Lake reports.



Algerian Flankers add to the Su story

Four years after ordering 28 Sukhoi Su-30MKA versions of the 'Flanker', and with these aircraft now in operational service, Algeria has signed a contract for a further 16 of the versatile and powerful strike fighters – effectively exercising 16 of the 28 options it holds.

The Algerian Air Force (Al Quwwat al Jawwiya al Jaza'iriyah) ordered its initial batch of 28 Su-30MKA fighters in 2006 as part of a \$2.5bn contract, together with 16 Yak-130 lead-in trainers and 34 MiG-29SMT tactical fighters.

There are several competing versions of the Sukhoi Su-30 offered by rival manufacturers, but those selected by Algeria were supplied by the Irkut Corporation's Irkutsk Aircraft Production Organisation, part of Russia's United Aircraft Corporation (UAC).

They are like the Su-30 variants sold to India, and Malaysia.

A quite separate family of Su-30 versions is marketed by the Komsomolsk-na-Amur Aircraft Production Association (KnAAPO). The latter

aircraft have been sold to China, Indonesia, Venezuela, and Vietnam.

The Su-30 has a long and fairly tortuous story, having originally been conceived as a dedicated long-range/high-endurance interceptor for the Soviet national air defence (IA-PVO), with air-to-air refuelling capability and systems proven for long endurance missions, and using the designation Su-27PU.

Cold War defence cuts

Only a handful were delivered before post-Cold War defence cuts saw the programme cancelled. This aircraft became the Su-30 when offered for export and the Su-30M when given a multi-role capability.

As the Su-30M, the aircraft retained the formidable full air-to-air capabilities of the basic Su-27, with long range, powerful radar and beyond-visual-range missiles. But it also added the ability to carry a wide range of precision-guided air-to-ground weapons, including TV,

laser, radar and EO-guided bombs and missiles, as well as unguided 'dumb' ordnance. This effectively transformed what had often been seen as the Russian equivalent to the F-15C into the Russian counterpart to the F-15E Strike Eagle.

Since Sukhoi started marketing the original Su-30M, the aircraft has been extensively improved and modernized, gaining thrust vectoring, modern avionics and full colour glass cockpit displays, and even a modern radar with an electronically scanned array.

In joint exercises with the USAF, the British RAF and the French Armée de l'Air, the Su-30MKIs of the Indian Air Force have demonstrated the type's formidable capabilities against the latest Western fighter types, and they have won a great deal of respect from their adversaries along the way.

In Soviet days, the design bureau (Sukhoi), operating in conjunction with the State Export Agency, was responsible for marketing and selling the aircraft. But, following the liberalization and



The Russians led the way - now the SU-30M has won respect from its adversaries.

reforms of the early 1990s, the individual aircraft factories (previously subordinate to the design bureau) gained the ability to market the aircraft that they built. Accordingly, two of the plants producing versions of the Su-27 decided to market two-seat multi-role variants based on the Su-30M, though these differed in a number of respects.

The latest Irkutsk-built Su-30 variants differ from those supplied by KnAAPO in being fitted with canard foreplanes and Saturn AL-31FP engines with thrust-vectoring nozzles, and in using a higher proportion of Western avionics systems.

All are, to some extent, based on the final standard for India, since this was the first advanced 'Flanker' built by IAPO. But because the Indian model used some Israeli avionics equipment (along with indigenous Indian, US, French and Russian) the aircraft for Malaysia and Algeria (both Islamic countries) do differ to some extent.

The Su-30MKA is equipped with the advanced N011M BARS pulse Doppler passive electronically scanned array (PESA) radar, and has a Russian MAW-300 missile approach warning sensor (MAWS), RWS-50 RWR and optical-location system (OLS).

Further details of the Su-30MKA's avionics suite have not been revealed, though the aircraft is believed to be extremely similar to the Su-30MKM built for the Royal Malaysian Air Force.

This has a French (Thales Group) head-up display (HUD) system, a Damocles Laser Designation pod (LDP), and a Thales navigational forward-looking IR (NAVFLIR) system. South Africa's Saab Avionics supplies the laser-warning sensor (LWS), Goodrich provides lights, and Rohde & Schwarz of Germany furnishes the communications suite.

The first batch of 28 aircraft were delivered between December 2007 and November 2009, with pairs of aircraft being transported to Algeria on board Antonov An-124 cargo aircraft, where they were assembled by specialists from Irkut (IAZ) and then flown by Russian IAZ test pilots.

Two-tone grey camouflage

Some were delivered in an overall grey scheme, others in a two-tone grey camouflage. Algerian pilots were trained on the 'Flanker' at Zhukhovskii, near Moscow (where two of the Algerian Su-30MKIs were temporarily based) and 12 aircraft had been delivered to Algeria by November 2008, allowing test and evaluation trials to begin at Oum El-Bouaki airfield.

The Algerian Air Force prepared a new air base for the Su-30MKAs, located at Ain Baida in the north-eastern part of the country.

This has two perpendicular runways each more than 3.6km long, and each with parallel wide taxiways. The base is generously provided with hardened aircraft shelters, with more under

construction, and was intended to house three squadrons of Su-30MKAs. Satellite imagery taken by the Eros B satellite on July 12 2010 showed at least 11 Su-30MKA fighters lined up on the flight line.

In May 2010 it was announced that all 28 Algerian Su-30MKAs were fully operational, including in-flight refuelling.

Algeria acquired the first of six or eight Ilyushin Il-78 'Midas' tankers at the end of 2007 and these aircraft, serving with the 357eme Escadron de Ravitaillement en Vol (357th Air-to-Air Refuelling Squadron) now form part of the 7eme Escadre de Transport Tactique et de Ravitaillement en Vol (7th Tactical Transport and Air-to-Air Refuelling Wing) at Boufarik. They play a vital role in supporting Su-30MKA and Su-24 operations and give the Algerian Air Force a real long-range attack capability.

The order for 16 additional Su-30MKAs was signed in April this year and the aircraft will replace the 34 MiG-29SMT fighters ordered by Algeria and delivered, but then cancelled amid reports of Algerian dissatisfaction with the aircraft's condition and capabilities. The new aircraft are due to be delivered in 2011, alongside 16 Yak-130 advanced trainer/light attack aircraft under a \$1bn contract.

Irkut has announced that it expects to export some 242 multi-role Su-30 fighters, worth around \$7 bn, by 2014.



Sweet 16

Morocco ends 20-year search to find a fighter

Finding a new fighter has taken Morocco more than 20 years! Finally, though, after a long and thorough search – and latterly after a hard-fought sales battle with Dassault – Lockheed Martin received a \$233.6 million firm fixed-price contract in May 2008.

This covers the supply of 24 F-16 Block 52 aircraft, along with associated support equipment and alternate mission equipment.

The Kingdom of Morocco first looked at the F-16 as a potential and partial replacement for its F-5Es and Mirage F1s in 1989, when the country was expected to purchase 24 used F-16A/Bs, armed with AIM-9 Sidewinders for air-to-air use (but with no BVR armament) and with AGM-65 Maverick ASMs for the air-to-ground role.

Algerian re-equipment, most notably replacing ageing MiG-21s and MiG-23s with a three-squadron wing of MiG-

29s, made the new fighter a higher priority.

A contract for 20 ex-USAF F-16A/B aircraft was signed with the US government in November 1991, with Saudi Arabia and the UAE providing the funding. The deal fell through, however, and Morocco turned its attention to the Mirage 2000 – with Dassault offering an attractive package of new Mirage 2000s and an ambitious upgrade for the existing Mirage F1s, to be led by SAGEM.

The acquisition of Sukhoi Su-30MKAs and MiG-29SMTs by Algeria in 2007 revitalized the search for a new fighter, and initially Dassault's new-generation Rafale seemed likely to take the order, even though it was more expensive than the F-16 packages offered by the USA.

The initial US offer was for 36 second-hand F-16s at a cost of only \$2.4 Bn US (plus weapons), which significantly undercut the French offers of 18 Rafales for \$2.6bn, or 24



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aircraft for \$3.2 Bn. The US offer later changed to be based around the supply of 24 new advanced model F-16s.

Many believed that the Rafale remained Morocco's preferred choice, until the kingdom was given contradictory pricing by Dassault and by the DGA (France's arms export agency), and when the French Government tried to tie the Rafale deal to French solutions to other Moroccan defence requirements.

Others blame Morocco's change of mind on a dawning realisation that the latest F-16 models actually offer the capabilities that it requires, while some of these are still only aspirations on Dassault's only partly-funded development roadmap for the Rafale. This leaves some doubt as to whether Dassault could actually deliver a Rafale to the specification that Morocco required.

Others saw the decision as marking a desire to strengthen strategic and political links with the USA, while a €500 million order for a French FREMM frigate smoothed ruffled French feathers after the rejection of the Rafale.

But for whatever reason, Morocco turned to Lockheed-Martin for its new fighter, selecting the Block 52+ Advanced F-16C/D, as used by the IDF/AF, the Hellenic Air Force, the Republic of Korea Air Force, the Polish Air Force, and the Republic of Singapore Air Force.

The Block 52 differs from the otherwise similar Block 50 in being powered by the Pratt & Whitney F100-PW-

229 engine, with a Normal Shock Inlet (known as the small mouth inlet), rather than the General Electric F110-GE-129 engine (which uses the 'big mouth' Modular Common Inlet Duct).

The F100-PW-229 was specifically designed to reduce the costs of engine ownership and this was accomplished by inserting fifth-generation fighter engine technologies developed for the F-22's F119 engine and the F-35's F135 engine. The engine inspection interval has been increased from 4,300 to 6,000 cycles and the durability of key components has been improved, all while maintaining a thrust rating of 29,100-lb st.

The Moroccan F-16 will use Northrop Grumman's AN/APG-68(V)9 multimode radar. This detects airborne targets at 30 per cent greater range than the previous F-16 radars, and searches a larger volume of sky. The radar has improvements in functionality and tracking capability, including an ability to track four targets instead of two in the so-called Situation Awareness Mode (a search-while-track mode).

The (V)9 radar offers a five-fold increase in processing speed and a ten-times increase in memory, allowing expanded modes. The new radar has an improved Ground Moving Target

Indication mode, and features a synthetic-aperture mode for high-resolution ground mapping and for the delivery and guidance of precision, all-weather, stand-off air-to-ground weapons

The AN/APG-69(V)9 uses commercial off-the-shelf (COTS) technology to significantly improve supportability and reliability, and the new version is claimed to offer a 400-hour mean time between failures (an increase of 50 per cent).

The Block 52+ has an upgraded landing gear, allowing operation at higher all-up weights than is possible with older sub-variants up to a maximum gross take-off weight of 52,000 pounds. The aircraft has provision for conformal fuel tanks (CFTs) attached to the upper fuselage. The CFTs can accommodate an extra 450 gallons (more than 3,000 pounds) of fuel, increasing range by 20-40 per cent, depending on aircraft configuration, payload and sortie profile.

The Advanced Block 50/52 variant is also certified to carry big Northrop Grumman 600-gallon under-wing fuel tanks instead of the



normal 370-gallon wing tanks.

The Moroccan aircraft will use Lockheed Martin's advanced countermeasures electronic system (ACES) consisting of a new, all-digital, low-cost, high-performance AN/ALR-56M radar warning receiver, a new digital RF memory-based (DRFM) jammer and AN/ALE-47 countermeasures dispensing systems, as well as an advanced AN/APX-115 IFF interrogator/transponder.

Morocco will take delivery of four Link-16 multifunctional information distribution system (MIDS) low volume terminals, and two link-16 ground stations with its F-16s, allowing the air force to explore net centric operations. The aircraft will also be delivered with six joint helmet mounted cueing systems, and four AN/ARC-238 single channel ground and airborne radio system (SINCGARS) radios with secure HAVE QUICKI/II.

The F-16s will be delivered with a wide range of weapons, targeting pods and sensor systems.

For air-to-air use, the aircraft will be armed with an initial batch of 30 AIM-120C-7 AMRAAM missiles (an upgrade from C-5 to C-7 having been approved in November 2009) and 60 AIM-9M Sidewinders.

For air-to-ground missions, the aircraft will use 53 AGM-65 Maverick ASMs, consisting of eight imaging infrared (IIR) AGM-65D/G missiles, and 45 TV-guided AGM-65H missiles.

Three hundred 'dumb' Mk 82 bombs will be delivered, primarily for training, along with 280 laser-guided bombs (LGBs). The latter will include 20 GBU-24 laser-guidance and fin kits to convert 2,000-lb bombs into Paveway III LGBs, as well as 50 GBU-10 kits to transform 2,000-lb bombs with penetrating warheads into Paveway II LGBs for use against hardened targets.

There will also be 150 GBU-12 kits to turn 500 lb bombs into Paveway II LGBs, and 60 Enhanced GBU-12 PAVEWAY II bombs, with dual-mode GPS/laser guidance. The air force will also receive 50 JDAM tail kits (20 GBU-31s for 500-lb Mk 82 bombs, and 30 GBU-38s for 2,000-lb Mk 84 bombs).

For suppression of enemy air defences (SEAD), the F-16s will be delivered with 20 AGM-88B/C HARM anti-radiation missiles.

To help deliver all of these precision weapons, the F-16s will be equipped with 12 AN/AAQ-33 sniper targeting pods. Sniper incorporates a high-resolution, advanced mid-wave FLIR and a dual-mode laser, and gives target detection and identification ranges. For reconnaissance, the Moroccan F-16s will use four Goodrich Corporation DB-110 airborne reconnaissance pods, which are being delivered with suitable data

links, and mobile and fixed ground stations and mission planners.

Essentially similar to the RAF's RAPTOR recce pod, the F-16 system is in service in Poland and Greece, and transforms the Fighting Falcon into a formidable tactical and real-time reconnaissance asset.

Deliveries of the aircraft are believed to have been pushed back from 2010 to "beyond 2011", but the Lockheed Martin charm offensive in Morocco is well under way, underpinned by the participation of an Air National Guard F16C at Aero Expo Marrakech in February this year..

The F-16 order marks the start of a deeper relationship with the USA and the Royal Moroccan Air Force has also placed an order for 24 T-6C trainers. These aircraft have an integrated digital glass cockpit with a HUD, an up-front control panel (UFCP), three multifunction displays (MFDs) and full hands-on throttle and stick (HOTAS) controls.

The C-model is also equipped with under-wing hardpoints, to allow the carriage of external fuel tanks or light attack weapons.

The Moroccans have also ordered four C-27J Spartan tactical transport aircraft.

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The Middle East Business Aviation Association (MEBAA) has gone from strength to strength since its inception in 2007. A key part of its strategy is arranging the Middle East Business Aviation (MEBA) show.

Liz Moscrop reports.



Ali Al Naqbi: "This is good growth despite what is going on in the market."

MEBAA's five key goals for growth

Yet another significant event takes place in Dubai this year with The International Business Aviation Council meeting in the region for the first time. The event takes place on the day after the third MEBA show, which runs from December 7-9 at Dubai's Airport Expo.

The meeting is a real coup for MEBAA and something of a triumph, too, for the MEBA show, which has become the third largest private aviation trade show in the world, reflecting the growing importance of business aviation to the region.

In 2008 there were 93,000 local private aviation movements. That figure rose to 1.3 million in 2009. The current regional fleet of 450 aircraft is expected to rise by another 458 by 2018.

MEBAA predicts the Middle Eastern market is set to expand 15-20 per cent per annum over the next four years to

become a \$1 bn-per-year industry. The association also says that the Middle East and North Africa markets will account for 20-25 per cent of all new business jet deliveries worldwide between 2012-2018, worth around £300bn (\$463bn).

There are now 148 MEBAA members, up by 100 since the last MEBA show in 2008. MEBAA's founding chairman Ali Al Naqbi said: "This is good growth despite what is going on in the market. We are seeing good recovery in the business aviation sector, with an increase in flying hours. People who put their operations on hold are now coming back."

Al Naqbi reckons MEBAA offers a great deal of value for members. The organisation is focusing on five main goals:

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Royal Jet expects to list a fleet of 20 aircraft by 2012.

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- Setting up a data-bank of anonymous industry data on number of movements, hours and sectors flown;
- Sharing perspectives and best practices;
- Achieving effective communications strategies, in particular with media and GCAA regulatory bodies via conferences and events;
- Improving members' welfare through training and conferences; and
- Establishing a regional industry code of conduct.

MEBAA also aims to create a forum for insurance and fuel purchases, where volume acquisitions translate into discounts for members.

Of the business aircraft some 70 per cent are roughly evenly split between Saudi Arabia and the UAE.

The UAE is rapidly catching up with its neighbour as more operators move into the Emirates to grow their fleets. For example, Abu Dhabi-based Al Jaber Group is planning to operate 21 aircraft within five years, with orders booked with both Airbus and Embraer for its VIP charter operations. The company has already placed a \$1.2bn order for aircraft and signed a letter of intent for two VIP A380s.

Abu Dhabi's Royal Jet also expects to list a fleet of 20 aircraft by 2012 and of 50 aircraft by 2020. Shane O'Hare CEO explained: "Our main business is with wealthy individuals and government officials and we've actually seen demand increasing."

Meanwhile, Saudi Arabia's MAZ Aviation will

be the largest fleet operator of VIP configured Airbus A350 XWB aircraft. Having ordered six of the type, as well as buying into the Airbus completions centre, Mohammed Al Zeer, MAZ chairman is optimistic about the future for wide-bodied VIP aircraft. He said: "The opportunity for growth in this sector has not diminished at all."

With an estimated 170 privately-owned jets, domestic travel alone would keep VIP ground handlers and FBOs in Saudi Arabia's key destinations busy, with Beirut and Dubai being the most common. The business and private aviation market has a total of nearly 16,000 private aircraft movements per year.

Western companies, too, are looking seriously at the region. VistaJet is targeting 25 per cent growth across global regions including the Middle East. Company founder, Thomas Flohr, said: "Executives who flew privately before the economic downturn are still spending big on business travel," adding that the major part of the company's expansion strategy is going to come from the Middle East region.

Al Naqbi attributes this rapid growth to a desire to travel easily, not only on intercontinental routes. "Sometimes there are no direct flights between places. It can take two or three days to go anywhere flying on airlines because of connections.

"For businessmen and women time is money. With a private plane you can breakfast in Dubai, go to Bahrain, and return and sleep with your family overnight."

Five-year plan to smooth the way for air traffic control

One of the chief challenges to overcome in the region is co-ordinating air traffic control. There are 22 regulatory authorities, which raises safety and planning concerns.

Al Naqbi is aware there will be hurdles ahead, but says the fact MEBAA talks on behalf of a group of operators will help smooth the path.

He said: "Our objective is to represent the needs of our members.

"We are the only association to talk to an authority that is not representing just one operator. We will continue to talk about traffic rights to civil aviation authorities to make it easier for business aviation to be recognised as a major player. There are lots of agendas to talk about."

Things are improving, however.

A permit for a trip from Dubai to Medina would require a month to obtain five years ago. Today it is more likely to take a week, or even two days in exceptional circumstances.

Al Naqbi said: "Iraq is still crazy because of the monopoly situation there." (Palm Jet has exclusive rights approval for flights to Iraq. Permit and clearance for landing cost \$6,000 for aircraft with less than 10 seats and \$8,000 for aircraft more than 10 seats).

In the next five years a major ambition is to create an organisation similar to Eurocontrol in Europe for the Middle East.

Al Naqbi said: "That comes with lots of effort talking to governments and private companies happy to have Middle East rules produced by all the key operators. We have worked very hard to change things, but there is still huge room for improvement."

MEBAA will also work with aviation authorities to create a greater number of business aviation terminals and FBOs. In addition to Al Bateen in Abu Dhabi, Al Naqbi predicts that the region will see a further three dedicated private aviation airports by 2015 in Jordan, Saudi Arabia and Egypt.

Another major concern is the so-called 'grey market' of charter operators, where unscrupulous owners rent out their aircraft commercially despite having no documentation or insurance.

Al Naqbi said: "This is one of our biggest challenges, it is a huge safety concern.

"It is very important for our business in the region to stamp it out. We have submitted various proposals to the GCAA, but it needs lots of work and coordination."

One of the barriers to eliminating the problem is the lack of access to airfields in some jurisdictions.

Al Naqbi cautioned: "If anything goes wrong, people don't realise they are not insured. Everyone should know with whom they're flying.

"If a broker gets a really good price, check the registration of the aircraft. People don't understand the full consequences of an accident."

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Alison Weller: "We will consider taking it around the region if facilities allow it."

Small companies play a big part in growth

While MEBA is fostering an environment in which business aviation can flourish, the MEBA show is also making a major contribution.

This year's show takes place at the world's third busiest airport – Dubai International. There is likely to be some 40 per cent growth on the 2008 event, with 350 exhibitors (up from 250) and 7,000 expected visitors rather than 5,500 who showed up last time.

MEBA 2008 firmly demonstrated the importance of business aviation to the Gulf region with more than \$1.5bn worth of deals announced. That year there were 78 aircraft worth \$1.6bn on the dedicated static park. Numbers are likely to be similar this year, with the whole gamut of private jets represented ranging from VLJs to large airliner conversions.

All the major original equipment manufacturer (OEMs) will take part again and major first-time faces are Honeywell, RUAG and Emerald Jet from the Lebanon, which has taken a chalet. Other bookings include companies such as CAE, Amjet Executive, Avicom, OnAir and Jeppesen, with the return of Happy Design Studio and JCB.

UK and Qatar-based Rizon will also exhibit for the first time, as will the interestingly named MoonJet, a flight support services company from Sharjah.

There are several other new entrants from the Middle East region.

Alison Weller, managing director of F&E Aerospace, which organises the show said: "We're seeing a growing trend of flight support services companies exhibiting as the industry grows. We're anticipating a massive surge in bookings as lots of smaller companies sign up after Ramadan and Eid."

She added that a good barometer of the significance of the

show is the fact that Asian companies are signing up and expressing interest for the first time. "Usually Asian companies are region-centric, or only attend the major world shows, such as Paris or Farnborough. We are very encouraged at the enquires we have received."

There will be an extra hall this time in addition to the East and Central halls, so the show will feel bigger. Weller said there had also been more interest in dedicated country pavilions with the UK, US and Malta all signed up so far.

She highlighted the ease of access to the show.

"People confuse us with the Dubai Air Show when we are much smaller and more accessible. There is ample car parking space and plenty of taxis. There's also the new Metro that takes you right on to the show site and runs till midnight."

Both Al Naqbi and Weller stress that they would ideally like to see MEBA move around the region. Al Naqbi said: "I would like to see MEBA have an office in all the GCAAs in the region but we have limited resources as a non-profit organisation."

Weller pointed out that many countries are, as yet, unable to host such a large event. She said: "We will consider taking it around the region if facilities allow it – this forms part of our long-term plan. Dubai at the moment is willing to host it."

In the long term MEBA would also like to introduce an awards system, where key movers and shakers could be honoured at the show, as well as staging it on an annual basis.

So what can we look forward to this year that's radically different? Al Naqbi laughed: "I can't tell you right now, but we're working on something. We always hope to produce an element of surprise," he said.

"I can't tell you right now, but we're working on something. We always hope to produce an element of surprise."

Ali Al Naqbi

Bombardier's Global vision for new long-range aircraft

October's NBAA show in Atlanta saw two new ultra-long-range jets take centre stage with a new offering from Bombardier to counter Gulfstream's latest flagship the G650.

Bombardier's latest addition to its Global family is a large-cabin ultra-long-range business jet, which will directly compete with the new G650, which is set to enter into service in 2012, and will be the widest, fastest and longest-range business jet on the market. It will also be 20 per cent larger and faster than Bombardier's current flagship, the Global Express, with a 7,000 nautical mile range.

However, Bombardier Business Aircraft says it is looking forward to attending MEBA to promote its new jet to a region that is ripe for taking new long-range aircraft. Senior public relations representative Haley Dunne explained: "The Middle East is an important region for us and we currently enjoy about 19 per cent of the market share. The recent shift in market demand towards more international customers has driven the sales of larger aircraft. This is partly due to globalization and the need to travel very long legs."

This desire to fly long distances has meant that

emerging markets such as the Middle East and Asia are proving to be important, as companies and individuals embrace private aviation as a valuable tool. Dunne continued: "It is not uncommon for international customers, especially in the Middle East, to acquire their first aircraft within the large category, which is contrary to what we see in North America."

It is easy to spot potential customers in the Gulf region. Several charter companies already fly both manufacturers' products, such as Turkey's Bora Jet, which operates a Global Express XRS, Abu Dhabi's Royal Jet, which has a Gulfstream GIV and Bombardier Learjet 60 on its books, and Ras Al Khaimah Airport-based Dana Executive Jets, which flies a GV and a CL604.

Consequently Dunne is bullish about the new jet's prospects in the region. She said: "The Global aircraft platform offers superior technology and comfort and we believe that it is the dominant strategy for the large aircraft category."



Skyplan sees 30% revenues growth

Flight services provider Skyplan reports that its regional office in Dubai has taken in 30 per cent more revenues over the last ten months.

Managing director for UAE Muhammad Sami said: "It is good news for us and an endorsement of our recent investments in the region.

"2010 has been busy as we have been serving new corporate aviation customers; our strategic location has played a pivotal role in our unprecedented growth."

Last year the Calgary-headquartered company established a base in Dubai International Airport Free Zone (DAFZA), becoming the only North American company that provides contract flight dispatch from offices in the West and the Middle East.

The firm also has an operation in Sharjah, which it opened in 2008.

All three centres are equipped with modern facilities, manned by a team of dispatchers who provide 24-hour cover, with an emphasis on personalised on-demand flight planning support.

According to Imran Aslam, executive director for

Muhammad Sami: "Our strategic location has played a pivotal role in our unprecedented growth."



the UAE, the vast majority of new business aviation customers over the last half-year have bought flight planning and trip support services.

Salman Ali, director services said: "We are one of the few providers in the world that owns and supports our own flight planning software – CyberTrac One,

which delivers flight plans in up to five seconds and is used by several global flight support providers."

Last year Skyplan introduced the latest version to the Middle East. Salman added: "The scalable service means that operators pay per-flight, removing the need to hire a permanent member of staff."



LIGHTHOUSE - Photos credits: © Combis

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Gulfstream G650 is fast turning into a winner

Delegates at MEBA will be waiting for the latest updates of Gulfstream's newest flagship aircraft, which is now officially the world's fastest business jet and the world's fastest civil aircraft.

As part of its final flight test programme the ultra-long-range, ultra-large-cabin Gulfstream G650 achieved Mach 0.995 – a fraction of a second off the speed of sound.

The aircraft achieved this speed during flutter testing, which evaluates the aircraft's damping responses following an input from an external test device. Flutter testing is performed at a variety of frequencies, speeds, altitudes, weights and centres of gravity.

For the initial series of flutter tests, the aircraft achieved clearance out to both its design dive speed (Vd) and design Mach dive speed (Md) at altitudes ranging from 10,000 feet to up to the aircraft's maximum certified altitude of 51,000 feet.

In order to achieve the maximum speed of Mach 0.995, Gulfstream experimental test pilots Tom Horne

and Gary Freeman, along with flight test engineer Bill Osborne, took serial number (S/N) 6001 into a dive, pitching the aircraft's nose 16 to 18 degrees below the horizon. During the dive, flutter exciters introduced a range of vibration frequencies to the wing, tail and flight control surfaces to ensure the aircraft naturally dampened out the oscillations without further action from the pilots. Even under such extreme circumstances, the G650 performed flawlessly.

"The airplane is very predictable," said Horne, senior experimental test pilot. "It's very easy to control and to get precise control at those speeds. The airplane response has matched the expectations of our engineers and we've been able to easily fly the test conditions and march through the test plan."

During the flutter test missions, a team of multi-disciplinary engineers in Gulfstream's state-of-the-art telemetry centre in Savannah, Georgia, monitored the aircraft's behaviour and determined real-time the damping characteristics of the aircraft. The vibration frequencies exerted on the aircraft ranged from two

hertz, or twice per second, to 58 hertz, or about as fast as a fluorescent light flickers.

"We're doing very well," said Pres Henne, senior vice president of programs, engineering and test, Gulfstream. "The demonstrated flutter margins met or exceeded our expectations out to maximum speeds. That's a good sign."

As S/N 6001 continued with flutter testing, S/N 6005 completed initial phase manufacturing and began engine testing. S/N 6005 is the fifth and final aircraft in the G650 flight-test programme. Each aircraft in the programme has a specific purpose, with S/N 6001 focused on envelope expansion, air data calibration, flutter, in-flight performance and flight controls. S/N 6002 is used to evaluate the aircraft's systems as well as its take-off and landing performance, while S/N 6003 tests the avionics, in-flight load measurement and ice protection system. S/N 6004 will be the first G650 outfitted and tested with a full interior, which is currently being installed. S/N 6005 will participate in the reduced vertical separation minimum testing.

Royal Jet adds Lineage 1000 to managed fleet

Royal Jet has added an Embraer Lineage 1000 aircraft owned by the UAE-based business conglomerate, Al Habtoor Group, to its fast-growing managed fleet.

The aircraft – part of an aircraft management agreement signed in April this year – has already entered service, reinforcing Royal Jet's offering of unparalleled levels of comfort and luxury while providing further flexibility in terms of capacity.

Under the terms of the agreement, apart from managing the aircraft's day-to-day operations, Royal Jet itself carried out due diligence on its purchase, prepared the technical specifications and conducted the associated financial, commercial and technical reviews.

Through its project management and acquisition team, Royal Jet provides a tailored, comprehensive service from initial consultancy through to acquisition, management and sale of an aircraft – a 'one-stop' service which reduces overall costs for clients without compromising on quality or safety.

Present as the new Al Habtoor Lineage arrived in Abu Dhabi, Mohammed Al Habtoor, chief executive of the Al Habtoor Group, spoke about the long-standing relationship and the high regard for Royal Jet as an important partner.

"In 2008, Royal Jet acted as consultant on the purchase of our aircraft and negotiated the deal with us," he said. "Throughout the build, the Royal Jet project management team led by Nizar Jazzar, vice president



Khalaf Al Habtoor, Mohammad Al Habtoor and Sultan Al Habtoor tour their new Lineage 1000 aircraft with Shane O'Hare and Nizar Jazzar of Royal Jet.

aircraft project engineering and business development, also supervised production and consulted with the manufacturer, interior design and engineering teams. We are delighted that our new aircraft has arrived and we look forward to our continued relationship with Royal Jet as it manages the aircraft on our behalf."

The Lineage 1000 is one of the world's most technologically advanced business jets and is Embraer's largest and most exclusive executive jet, capable of carrying 19 passengers in complete comfort and luxury non-stop between Abu Dhabi and London or Singapore.

"In bringing together two of the most established UAE companies – the Al Habtoor Group and Royal Jet – we

are now able to offer our guests a new dimension in luxury," said Shane O'Hare, president & CEO of Royal Jet.

"The introduction of this aircraft into our fleet enables us to offer a full range of aircraft capacity and prices – from our Learjet 60, with six passengers, to our versatile Gulfstream aircraft and then on to the largest fleet of Boeing Business Jets in the world capable of carrying up to 50.

"This aircraft not only enables us to manage the needs of our guests around the right capacity and price points for their requirements, but also provides the perfect platform for the delivery of the safety, security, luxury and warmth that have become the hallmark of Royal Jet's award-winning standards of service."

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FOCUS ON

LEBANON

TOURISM

A small and mountainous country, Lebanon was once the Middle East's tourism hotspot until it was struck by civil war and Israeli invasion. But now the country is healing those wounds and is ready to resume its status again. Marcelle Nethersole reports.



**Now, the
battle to
win back
tourists**

FOCUS ON

LEBANON



The modern harbour in the ancient city of Byblos.

Lebanon is a country that packs a powerful punch where the old world meets the new. Dating back to 5000BC, it's full of culture and traditions from Phoenician sarcophagi to Roman and Islamic ruins, crusader castles, ancient architecture, stunning valleys, olive groves, vineyards, cedar forests, glorious beaches, mountain ski-resorts, and ultra-cool roof-top bars.

And these are just a handful of Lebanon's delights.

Like many countries in the Middle East, Lebanon has evidence of the darker sides, too. Turbulent times are still very much on display. Some 15 years of civil war saw massive destruction to the country, and then just as it was starting to settle back again it received another battering with the resurgence of hostilities with Israel – the most recent being a massive attack on Lebanon in 2006.

While the country is getting back on track to being a pearl of the Middle East again, tourists are always advised to check the latest information before travelling. But, as Nada Sardouk, director general for the Ministry of Tourism, explained, these wars were never aimed at tourists.

"Despite previous instabilities, we are a safe country," she said. "Previous conflicts were actually localised and were never aimed at tourists

anyway. We are a small, harmonious and friendly country. We have tight security and safety now and we are just as safe as anywhere else in the world. In fact, our criminal statistics are very low. We are also very a liberal country. We have 19 different religions and we all live well together."

Since 2006 Lebanon has been rebuilding itself and its tourism industry is making a steady climb up the ladder again. Visitor numbers reached 1.8 million in 2009 and by July had already passed the million mark in 2010.

"We expect these figures to keep increasing," said Sardouk. "Why wouldn't they?"

Lebanon is a diverse country with a diverse landscape. "We have a different civilisation; we are a Holy land. There are historical cities and sites, deep forests and snow capped mountains. We basically have four seasons here all year round. We have ski resorts that are almost as good as in Switzerland, but if you're more a beach fan we also have lovely beaches by the Mediterranean Sea. We also have a burgeoning ecotourism offering."

Lebanon is home to some of the most ancient cities in the world.

It is the historical home of the Phoenicians, Semitic traders whose maritime culture blossomed there for more than 2,000 years. Later, Lebanon's mountains were a refuge for

Christians and crusaders established several strongholds there.

After the collapse of the Ottoman Empire following World War I, the five Ottoman provinces that had comprised present-day Lebanon were mandated to France by the League of Nations. The country gained independence from France in 1943. Today its official languages remain Arabic and French.

"Our ancient cities still have ruins standing," said Sardouk. "Baalbek has to be one of the most famous cities in the world. It is a temple complex located atop a high point in the beautiful Bekaa valley. Its ruins are one of the most extraordinary and important Holy places of ancient times. Long before the Romans conquered the site and built their huge temple of Jupiter, there stood the largest stone block construction ever found in the world.

"You can easily spend an entire day exploring the ancient city's huge temple columns and intricate stonework. It's wonderful to stay at the ruins until dusk and see the sun come down over the temples."

Visitors are offered guided tours offering great insight into both Roman history and Lebanese culture.

Baalbek, also known as Heliopolis or 'Sun City', was revered by the Greeks as being home to



Inside the ancient fort of Byblos. Inset top: The Royal necropolis at Byblos . Inset below: Nazira El Atrache at the Bristol Hotel.

the Sun God. Today it is famous for its lively summer festival in July and August.

Another historic city is Byblos, located about 37km north of Beirut. “Byblos is the oldest inhabited town and harbour in the world. It comes from the Bible,” explains Sardouk.

“It was a powerful city-state with its own kings long before the Romans and the Greeks. Today visitors can see the castle built by the crusaders in the 12th and 13th centuries, as well as the Phoenician Royal Necropolis, where King Ahiiram’s sarcophagus shows the oldest alphabetic inscriptions in the world. The town’s harbour is simply stunning and has some great restaurants surrounding it.

“Byblos was a favourite destination with many film stars back in the 50s, when it was a ‘cool’ place to visit. Marlon Brando was one of its great fans.”

Tripoli – Trablous in Arabic – is Lebanon’s second-largest city and the north’s main port. It’s well known for its medieval Mamluk architecture, its huge fortress and its old city souq, thought to be the best in the country.

Lebanon’s capital, Beirut, is an exciting, fun and chic city. Its streets still bear a striking resemblance to those in St Tropez, with palm trees, lines of cafes and bars.

It’s a cosmopolitan city with around two million people. It has beautiful colonial relics,

mosques and churches, golden beaches, and is home to some of the best bars in the world. Along its beautiful corniche you’ll find the old and the young walking, joggers and people rollerblading. You will see women with veils walking next to women in tiny shorts.

All cultures co-exist together in harmony, which is a striking contrast to just a few miles along in the Green Mile area. Here you don’t have to look hard to see scars from the war. You can still see many a building peppered with bullet holes, a dark reminder of the city’s past as it slowly being rebuilt.

“Beirut is back on track to being a sophisticated tourist city hotspot while still keeping its traditional roots,” said Sardouk. “It boasts great culture and a fabulous party life. We have wonderful restaurants, famous roof-top bars, cabaret theatre, shows, dancing, music and even gambling at the Casino Du Liban. It is once again being known as Paris of the Middle East.”

Although, during the war, many hotels saw mass destruction, new hotels have been built. These include chain-style hotels such as the luxurious Mövenpick resort, the Four Seasons and the Intercontinental Hotel.

“We have new hotels, resorts and mixed-use developments starting to appear all over Lebanon now and key organisations within the tourism

industry are joining forces and working closely to sustain our country’s position as a Middle East business hub and top tourist spot,” said Sardouk.

But the city also still has charming traditional family hotels and boutique hotels that are still very much intact and operating. One of these is the famous Le Bristol Beirut Hotel.

“It was built in 1951 by two brothers,” said Nazira El Atrache, general manager of the hotel. “Its first general manager was Georges Rayess, well known for his books on culinary art. With that he guided the hotel to become the most famous in the country.

“This was always a destination for the locals as well as dignitaries, political figures, members of royalty, artists and chefs, many knowing Le Bristol hotel in France first.”

Visitors included the late Shah and Princess Souraya of Iran, the late King Hussein and Princess Dina of Jordan, Prince Majed, Emir of Mecca, President Chirac, Prince Albert of Monaco, and the former secretary general of the United Nations, Boutros Ghali.

“During the war politicians would come here and they would conduct their meetings on the two floors below ground we have – sort of like bunkers. There they knew they would be safe,” explained El Atrache.

Continued
on Page 62



The contrasts of Beirut from worn torn buildings to modern sculture mediterranean beaches, churches and mosques side by side and an people with hope and ambition.

CONTINUED FROM PAGE 61

Although today the hotel is a little tired around the edges, it is still elegant and charming, with antique and period furniture, Persian carpets, and European tapestries. It is still a favourite retreat for many leading figures visiting Beirut, as well as tourists.

“Since the war the locals have sustained this hotel. Le Bristol is like a landmark and people identify with this. People who fled the civil war still come back here. They have family in Beirut, their roots are here, and they feel at home at Le Bristol. But, of course, we have many nationalities coming to stay here too.”

The hotel reports 76 per cent occupancy in 2010 compared to 64 per cent in 2009. “Lebanon is claiming its place back as a tourist destination. We are receiving more and more tourists. During Ramadan we have mainly Europeans; after that we see more Arabs. Visitors from the GCC, Saudi Arabia, Egypt, Jordan, UAE, and Syria, all visit Lebanon,” said El Atrache.

Beirut is teaming with great restaurants. You can enjoy the catch of the day by the banks of the

Med, or sit by the famous Pigeons’ Rock (Raouché) and enjoy a hot shwarma. But, if you fancy any other type of cuisine, you can rest assured you will find it in this cosmopolitan city.

It also has another secret ingredient – flourishing vineyards that produce delicious wine. “The government supports the tourism industry as that is our number one source of economy. We don’t have any fuel here, we import all that, although we do have good wine that people should know about,” laughed Sardouk. “The vineyards are in the Bekaa Valley, about an hour-and-a-half from Beirut on the way to Baalbek. People all over the world are discovering our various wines and starting to order them over the Internet. We also have olive groves producing delicious olive oil.”

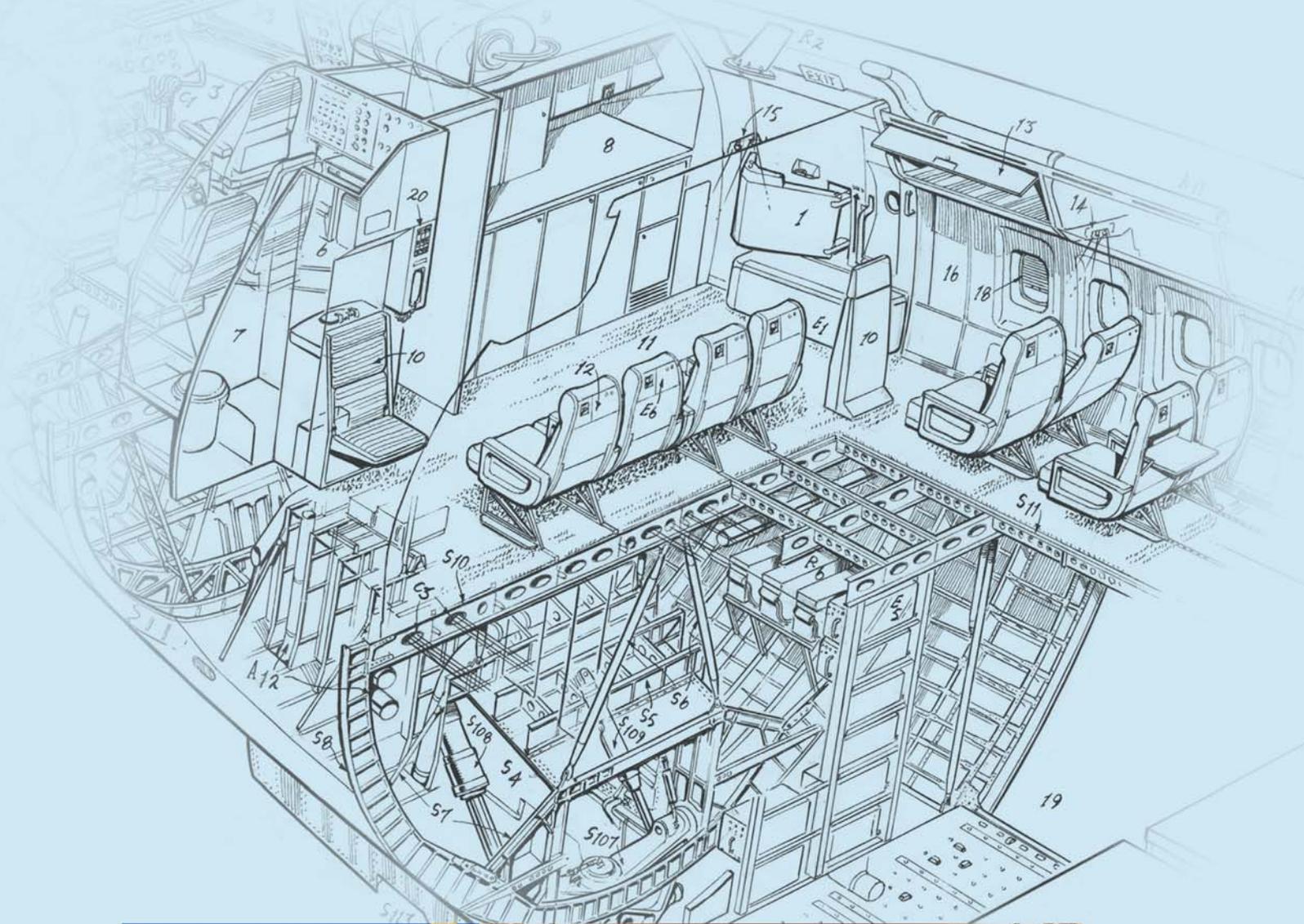
Lebanon’s latest attractions are its winter sports facilities. Not, perhaps, the most obvious choice for a skiing destination, but the ski centres of Faraya, Mzaar and Cedars are the most popular of six Alpine-style resorts, promising three months of snow a year.

“You can actually ski in the mountains in the morning and sunbathe by the Mediterranean in the afternoon. In how many countries can you do that?” asked Sardouk.

Lebanon is also seeing a different sort of ‘tourist’ visit. Sardouk explained: “We have fantastic medical services. Many people from other Arab countries come to Lebanon for operations. We are also known for plastic surgery, which includes cosmetic surgery and at affordable prices. It’s not just the Arabs that have it but also westerners. Laser-eye surgery is also noted here. Patients then can recuperate in Beirut, a great place to relax.”

Rafic Hariri International is Lebanon’s main airport and can host around six million visitors a year. “Lebanon is also a gateway by land. You can reach Damascus by taxi in just two hours from Beirut and many travellers make this journey,” said Sardouk.

“For the future of tourism, I think Lebanon will soon become one of the most demanded destinations in the world, let alone the Middle East.”



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Alan Peaford *meets the man behind the growth plan of Lebanon's civil aviation industry.*

Chaouk points the way to Open Skies

There can be few more difficult civil aviation jobs in the world. Dr Hamdi Chaouk had left his rather “comfortable” post as an advisor to Sheikh Ahmed in Dubai, to return home to Beirut as director-general of the civil aviation authority and to build on the work he had done in the UAE with Open Skies liberalisation.

It was not a popular move with the country's politicians, or its legacy carrier, MEA, which argued it was bad for the country and bad for the national airline. But for Chaouk, winning popularity contests was not on the agenda.

“I had been asked to come back before and had laid out my position about Open Skies. One Minister was so angry he suggested I should leave the country immediately. I went back to Dubai and worked with Sheikh Ahmed to create what was to become the liberalisation model for the rest of the region.”

Then, in 2002, the new Prime Minister Rafik Hariri, who has been credited with the vision for the reconstruction of Lebanon after its bloody civil wars, called Chaouk and said: “We are ready now.”

“That was it. So I came back. I had to prove myself,” Chaouk said.

Clean and honest

Cleaning up the administration and putting the post above question has been key to Chaouk's approach. “The person in this job must not believe in the chair or in his pocket. If people respect you because you are clean and honest and show you are a man of mission, then the whole country will support you. If you fail once, forget it. You have to set an example and be above everything. Forget your life outside. It is a mission.”

In his eight-year tenure as director general of the civil aviation authority, Chaouk saw his greatest ally, Hariri – after whom the Beirut International Airport is now named – assassinated. The following year, Israel dropped 25 one-tonne bombs on the airport and maintained a month-long air blockade. The national airline MEA continues to lobby against liberalisation and to fight against the end of its monopoly agreement, and the whole operation continues against a constant threat of political instability. But Chaouk survives and continues to push through his progressive masterplan for Lebanese aviation.

The bombing by the Israelis was a pivotal time. “For five days I was here at the airport. Everybody stayed here, we were like a family. It was only once we knew the damage was so great that we couldn't get aircraft moving that we went home. We then came back and every night we worked to fill the 30 metre by 30 metre holes on every taxiway and every runway. That was the spirit to survive and grow that goes throughout this country. Within an hour of the blockade lifting, we were able to get an MEA flight in.

“The world watched. The flight was full. There was suddenly confidence and the other airlines started to come back.”

But it was the greatly contested “liberalisation” that has been the driver behind the Chaouk mission.

“We created the Beirut Airport Company to be an autonomous body and then we opened the airspace giving the fifth freedom without reciprocity. We had 30 airlines, now we have 57 operating regularly. With the growth of general aviation and the opening of the special GA terminal we have 240 operators now at the airport.

“Since liberalisation we have created 1000 jobs. We have tripled the income of the airport. Although passenger numbers were increasing in 2002, the actual rate of growth was going down – after liberalisation it went up. We have almost doubled aircraft movements from 37,000 to 60,000.”

Since those darkest of days with the Hariri assassination and the Israeli attacks, passenger numbers have grown by around 25 per cent year-on-year – even in the recession.

“We have outgrown the six million capacity of the airport this year. This growth is unique. That's why

Terminal boost to business

Phase two of the General Aviation terminal is getting the go-ahead from the Lebanese government and that will lead to the construction of more hangars and will enable more MRO operators to set up in Beirut.

“There is a great demand,” Dr Chaouk, said. “Because we have the snow, the mountains and the sea, it is a great place to be while your aircraft is undergoing maintenance – and in easy reach of Europe and North Africa.”

we are building a new terminal to cater for an extra 12 million passengers. We are going to see the new terminal starting building in 2011 and completing in 2014. That will give us 18 million capacity.”

Runways and taxiways will also be modified and some of the 46 gates at the extended terminal will be A380 capable.

“Qatar and Emirates fly from Europe and want Beirut to be a back-up airport,” explained Chaouk.

Lebanon plans to open a new airport in the north of the country in the Klayat region, 80km north of Beirut. It was used by MEA during the war and Chaouk sees it as ideal for cargo and for low-cost carriers.

Back-up airport

“We need a back-up airport and we need a free zone,” he said. “We have no space to expand for a free zone in Beirut and there is huge cargo potential. The old Silk Route is opening again and we are ideally positioned for goods from Africa to Syria and Iraq. We are also close to Cyprus and Turkey and so on.”

In 2012 the monopoly on air transport by MEA comes to an end and Chaouk will be ready to issue AOCs for Lebanese operators. “I can see two or three low-cost carriers starting. Unfortunately MEA has this monopoly. It doesn't extend to carriers coming in, so we see international airlines coming in and competing, but Lebanese companies cannot. Only charter companies are allowed.

“The low-cost model will be interesting because we are three hours or so from the Gulf, North Africa and Southern Europe and there is demand. But I don't see anybody wanting to create a competitor to MEA.

“MEA has fought me all the way on liberalisation and still does. Yet, before it was losing \$30 or \$40 million dollars a year. After liberalisation it broke even and then made profits. Last year it recorded \$100 million profits and is buying new aircraft.”

Lebanon's demographics are unique. Because of the troubled history, many Lebanese live overseas. “We have five million Lebanese living in Brazil, two million in Australia; there are large communities in Venezuela, the USA and so on,” said Chaouk.

Fifteen million expatriates in all live outside



In a class of his own...

Dr Hamdi Chaouk spends time twice a week following a passion for education.

Having been involved in setting up aerospace facilities at educational establishments throughout the Middle East such as Dubai Aviation College, Qatar Academy and the King Aziz College in Saudi Arabia, he has now created a university college to teach to Masters level at the University of Balamand.

Chaouk, himself, lectures two days a week. "You can't have a successful industry without academic support. We are the first university in the whole Arab world to teach aerospace engineering to Masters level.

"The Lebanese people are committed to education. We have a great level of education here and people want to learn.

"Because of the history of the country, people are more mature, more driven with a mission in life to succeed that is more than just a job. I didn't see that even in Dubai or Australia. Even in high school young people want to make something of themselves and survive."

Lebanon – five times the domestic population. "They are very successful. If only 10 per cent visit their friends that would give you traffic almost half the size of the airport. That is double the size of the country when it comes to traffic movements. This is strange in air transport," Chaouk said.

Social structure

"If the country has any problem at any time, because of the social structure, these people will generate income to their families and NGOs. You don't need a Government to run Lebanon, the families run it. We had parliament closed for five years. The council of ministers did not sit for three years, and yet the country was moving and there was growth – people were making money.

"People outside ask me how do you run an airport when you have Palestinian camps and Hezbollah, where you have a country politically agitated with Israel one side and Syria the other? Yet the airport is booming, security is good, traffic is good. We are investing millions in the airport. We have the infrastructure, new terminals, three good runways to ICAO standards. But it is the people that make the difference. People react to consequences here. They react so positively, as if they feel they owe the country and have to go back and regenerate the money after there has been a problem.

"I know running an operation at Heathrow or Charles de Gaulle will have its challenges – but nothing like this. But I love it. It is my life. I am here from 6am until midnight every day but I wouldn't have it any other way."

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Small force with a wealth of history

Jon Lake *reviews the Lebanese Air Force and looks at the challenges it faces in today's environment.*

A Lebanon that was once inevitably described as 'war-torn', occupied variously by Israel (1982-2000) and Syria (1975-2005), and riven by conflict between different factions has become a more stable nation.

It is still troubled but is striving (with some success) for normality, having regained its status as an independent, unified, sovereign, and democratic country, free of Syrian hegemony and illegal Israeli occupation.

The Lebanese Air Force (Al Quwwat al-Jawwiya al-Lubnania) is playing a key role in achieving that much-needed stability, and in protecting the nation against enemies – external and internal.

The Lebanese Air Force is small but professional, with just 1,100 personnel – though this is almost double the number serving in 2000. It has three main bases, and some nine or ten front-line squadrons, but the front-line fixed-wing element is limited to a handful of ageing Hawker Hunters. These do not fly a lot because of the lack of new, young pilots. Those rated for them now tend to be the most senior

officers with top positions in high command and consequently don't have the time to get to Raayak regularly enough to fly them. The Hunters will remain active until a replacement is found ... or they run out of spares.

The five former provinces of the Ottoman Empire that constitute modern Lebanon were administered by France, under a League of Nations mandate, until independence in 1945. The Lebanese Air Force was established with French assistance and guidance, using the airfield built by the Germans during World War One at Rayak, though its initial aircraft came from the UK and Italy.

The British provided Percival Prentices and Proctors, used for training and liaison, while Italy donated five Savoia Marchetti SM.79 bombers, though these were later used mainly for transport duties in the Lebanon. Britain subsequently supplied a de Havilland Dove and a number of North American T-6 Harvards, and de Havilland DHC-1 Chipmunks, before delivering 16 de Havilland Vampire jet fighters

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from 1953. Rayak was felt to be unsuitable for the Vampire, and Khalde Secondary Air Base was established as a military enclave at Beirut International Airport.

The success of the Vampire in Lebanese service led to a decision to acquire the Hawker Hunter as its replacement. From 1959 the Lebanese Air Force acquired 19 Hunters, six ex-RAF single-seaters initially, followed by seven additional ex-Belgian Air Force aircraft (three converted to two-seat trainer configuration) in 1964-66, and a final batch of six ex-RAF aircraft in 1975-77. The Hunters equipped two squadrons at Khalde.

The year 1959 also saw the delivery of four Alouette II helicopters, opening the air arm's rotary wing era, and larger numbers of Alouette IIIs (eventually totalling 12) followed. This also marked a growing shift towards France for the supply of new equipment, with 10 Fouga CM-170 Magister trainers (five of them ex-Luftwaffe) arriving from 1966 to equip the Aviation School at Rayak.

A new base was established at the former civil airport of Kleyate in the north, and this became home to the 10 Dassault Mirage IIIEF fighters and two twin-seat Mirage IIIDL trainers ordered in 1968, which brought the Lebanese Air Force into the supersonic era.

The Mirages saw little service, and two were lost in accidents. In 1978, during the Civil War, they were withdrawn and stored, and though there were plans to return them to service, these came to nothing, and they were eventually sold to Pakistan in 2000.

More successful

Other acquisitions during the 1970s proved more successful. An initial batch of six Agusta Bell AB212 helicopters (of an eventual 12) were delivered from 1973. This licence-built version of the twin-engined Bell UH-1N provided a real support helicopter capability, and gave a meaningful over-water SAR capability, too.

The last of the T-6 Harvards and DH Chipmunks were finally replaced by six Scottish Aviation Bulldogs in 1975.

Even during Civil War the Lebanese Air Force continued to get a trickle of funding for the procurement of new equipment and received six Aerospatiale SA-330 Puma medium transport helicopters in 1980, with six more following in 1983-84. It also took on charge eight armed Aerospatiale SA.342K Gazelle helicopters. These mostly operated from the satellite bases of Jounieh and Adma, north of Beirut.

During 1983, the Bulldogs, Fouga Magisters and the Hunters were moved to Beirut Airport, which lay outside the territory controlled by Syria (Kleyate was under Syrian control between 1976 and 2005, as was Rayak), but the airport soon came under fire, forcing a move to the Halate base, actually a converted 1600 metre section of the Beirut-Tripoli highway 40-km north of the capital. Despite the short runway and challenging terrain surrounding the strip, this served as the



base for the Lebanese Air Force's fixed-wing aircraft between 1983 and 1990.

Though the Civil War was brought to an end in 1989, with the signing of the Taef accord, the 1990s saw a period of consolidation, with most of the air force's aircraft being grounded or withdrawn soon after moving from Halat to Kleyate and Rayak. Three surviving Bulldogs (two had been lost in training accidents and one shot down over enemy territory) were placed into storage, along with the surviving Magisters, and, after a minor landing accident involving one of the T.Mk 66 trainers, the eight surviving Hunters were also placed into storage at Rayak in 1994. Many of the Pumas, Gazelles, and AB212s were also stored.

However, at the same time, the air force did receive 24 ex-US army UH-1H helicopters from

1995, equipping No.s 10 and 11 Squadrons. These became the backbone of the force, which rapidly became an all-rotary air arm. But while the Huey is a versatile workhorse, adept at VIP, utility and transport missions as well as search and rescue, fire-fighting (using under-slung Bambi buckets and a foam tank in the cabin), and agricultural crop spraying, it is not well suited to all roles, and the air force soon looked to expand its fleet.

Four Robinson R44 Raven II Helicopters were acquired in 2005 for rotary-wing training, and these were assigned to a new 15 Squadron at Rayak, which formed part of the otherwise moribund Aviation school.

Nine surplus ex-UAE air force SA.342 Gazelles were taken on charge in March 2007, equipping

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Lebanese Air Force in action.
(Clockwise from top left)
1. Ex-UAE Gazelles give the air arm a modest offensive capability.
2. Cessna's Combat Caravan gives the force a fixed wing presence for transport and surveillance.
3. Puma Helicopter on patrol with 9 Squadron.
4. Firefighting is a key responsibility of the Air Force.



No.8 Squadron at Beirut and again provided the air arm with a modest offensive capability.

These were pressed into use in May 2007, when trouble erupted in the Nahr el-Bared refugee camp near Tripoli. Lebanese forces moved in to arrest a group of Fatah al-Islam militants accused of taking part in a bank robbery earlier that day, provoking a day-long battle. An Army checkpoint was attacked in response, and the army responded by shelling the camp.

War then broke out between militant forces and the Lebanese Army. The Army was faced with unexpected difficulties since the militants had constructed heavily fortified bunkers, and the Air Force was called in to try to deal with these. In the absence of fixed-wing aircraft, Gazelles and Hueys operating from nearby Kleyate attacked the camp, the Gazelles using rockets, while the hastily armed UH-1Hs carried 68mm Matra SNEB rocket pods and heavy machine guns, before being modified to carry out bombing missions dropping 250kg Mk 82 bombs from outrigger pylons and single heavy 400-kg bombs from under the belly.

Operations continued for more than three months, dramatically underlining the need for fixed-wing aircraft. Preparations were made to put the long-retired Hunters back into service, though these plans were frustrated by the lack of ejection seat cartridges. After the battles at Nahr el-Bared, efforts to re-equip the air force were stepped up.

The attack helicopter force was boosted by putting three of the original batch of Gazelles back into service, bringing the fleet to 12, and standardizing the aircraft to all be capable of firing HOT anti-tank missiles. There have been suggestions that France may provide 6-10 further Gazelles.

In 2008, Lebanon formally requested AH-1 Cobra attack helicopters from the US, and agreement was reported to have been reached later that year, though nothing further has been reported, and Mil Mi-35 'Hinds' have now been ordered from Russia.

Beirut - Khalde	
8 Sqn	SA342L Gazelle (12)
9 Sqn	SA-330/IAR-330 Puma (13)
10 Sqn	UH-1H (6)
11 Sqn	UH-1H (5)
16 Sqn	Sikorsky S-61N MkII (3)
Presidential Flt	AW139 (1)

Kleyate ('President Rene Mouawad')	
14 Sqn	UH-1H (6)

Rayak	
2 Sqn	Hunter F.Mk 70A (3), Hunter T.Mk 66C (1), AC-208B Combat Caravan/Grand Caravan (3)
12 Sqn	UH-1H (6)
15 Sqn	R44 Raven II (4)
Aviation School	Bulldog (3)

The utility helicopter fleet has not been ignored, either. Efforts are under way to overhaul as many as five of the Air Force's stored AB-212s (with Italy providing needed spares and parts) and three surviving SA-330 Puma helicopters. These will augment the ten former UAE air force IAR-330 Puma helicopters delivered from April 2010, which may eventually be based at a new Air Force base at the defunct air strip in Hamat.

In 2008 Qatar's Sheikh Hamad bin Khalifa (who is believed to be funding the AB212 and Puma fleets) presented Lebanon with a single Agusta Westland 139 helicopter for use as a VIP and presidential transport.

The Air Force has also finally acquired its own dedicated fire-fighting helicopters. Having leased a variety of helicopters over the years (including a Kamov Ka-32A in 2008), the first of three Sikorsky S-61Ns was delivered in May 2009.

Following the battles at Nahr el-Bared, the Air Force has made reintroducing fixed-wing combat aircraft a major priority. Though there were confused reports about the possible acquisition of TA-3 Skywarriors or TA-4J Skyhawks, and about the transfer of F-5Es from Saudi Arabia and/or Jordan, initial efforts focused on getting some of the stored Hunters back into service, and this was achieved on November 12 2008, when one

aircraft flew the first training mission. The return to service was announced on November 17 and, on November 22, two Hunters took part in a fly-past commemorating Lebanon's national day. Four Hunters are now operational at Rayak.

The Hunters (which have been on the strength of the Lebanese Air Force for 51 years!) are now being augmented by three Cessna 208B Grand Caravans. The latter are equipped with an advanced MX-15 EO/IR turret, and armed with Hellfire missiles. The first example was delivered in April 2009.

There have been persistent reports of a planned transfer of ten BAE Hawk T.Mk 63 armed trainers from the UAE (and/or of Hawk Mk

65s from Saudi Arabia), and of discussions between the US and Lebanon for the supply of 11 OV-10 Broncos and/or six to ten Beechcraft AT-6B or Embraer Super Tucano light attack aircraft.

Lebanon is also believed to be committed to acquiring a front-line fast jet capability, and there have been reports of interest in the Sino-Pakistani JF-17, the Russian MiG-29, ex-Belgian F-16s, ex-Saudi Tornados and ex-Omani Jaguars. A preliminary agreement for the delivery of 10 MiG-29s was reportedly reached on December 16 2008, and both Kleyate and Rayak were surveyed to assess their suitability for the 'Fulcrum'. Lebanese interest in the MiG waned, however, and Mi-35 attack helicopters were eventually purchased instead.

But more pressing is the need to restore fixed-wing flying training capability.

With this in mind, the Lebanese Air Force returned its three surviving Scottish Aviation Bulldog elementary/basic trainers to active service on July 15 2010, and hopes to restore a handful of Magisters to airworthiness for advanced training until a suitable replacement can be acquired.

In the interim, this may take the form of the Aermacchi MB-339, with negotiations for three of these advanced trainers reported in July 2010.



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FOCUS ON

LEBANON



Lebanon's business/VIP sector is in good health and full of plans for the future. But, writes
Brendan Gallagher, *its prospects will be brighter still if the "grey" market in illegal charters can be cleaned up.*

Khaled Akkawi says demand is increasing.

Blue skies ahead but

For two companies in essentially the same line of work, Executive Sky and Executive Air Services could scarcely be more different.

With a staff of five, the first operates from modest offices in the crowded southern suburbs of Beirut. A few kilometres down the road, the second is housed in the elegant marble halls of the GA terminal on the perimeter of Rafik Hariri International Airport.

Executive Sky specialises in the marketing of charter capacity on business jets owned and operated by third-parties. Executive Air Services (EAS) does the lot – owning and operating one aircraft, managing several more, ground handling and maintenance. Executive Sky is a child of the recession, created in 2008 with an innovative business model designed to seize the opportunities generated by the downturn. Five years older, EAS has seen the good times and weathered the bad.

Executive Sky might be described as the David of Lebanon's business/VIP aviation sector, while EAS is surely the Goliath. But their principals are in full agreement about two things – the huge latent demand for business/VIP aviation in Lebanon and across the Middle East, and the damaging effects of the "grey" market in illegal charters.

"No question, demand is increasing," said Executive Sky's chief executive, Zurich-educated

Khaled Akkawi. "In the first half of this year our turnover was 300 per cent compared with the figure for the whole of 2009."

He's echoed by Nicolas Meszaros, general manager and chief pilot of EAS. "The aviation market here is growing fast," said this Paris-born Lebanese citizen. "Taken together, private aviation and air transport have recently been growing at a minimum of 20 per cent a year. In the first four months of this year at EAS we handled nearly 70 per cent more aircraft movements than in the corresponding period in 2009."

Casts a shadow

The grey market casts a shadow across an otherwise sunny scene. "A lot of private operators charter their aircraft in contravention of the rules," said Akkawi. "The market is cleaning itself up, however, and I think that within the next two years only the professionals will be left. The clients are becoming more knowledgeable and insisting on an air operator's certificate (AOC), and the CAAs in the region are determined to eliminate the practice."

Meszaros takes a tougher line. "We'd like to see more action against the grey market," he declared. "We legitimate operators have to pay a high price for compliance in the form of things like six-monthly pilot refresher training and more demanding maintenance requirements. The grey

operators don't, and then they offer prices that we can't match. A lot of US-registered aircraft are operated like this in the Middle East."

Akkawi identifies another form of competition that makes life hard for the professional, fully commercial service providers of the Middle East's business/VIP sector.

"It's hard when the competition is not fully professional," he observed. "A lot of investors don't know the business and are ready to lose money over a long period."

"They buy market share by throwing money at the problem – for them it's not really an investment, it's a matter of prestige."

Executive Sky bases its business on leased access to aircraft belonging to properly certificated operators. "We started the company at the height of the recession because we felt it created a good space to play in," explained Akkawi. "The standard deals and ways of managing aircraft just weren't good enough any more. So we told operators that we would share the costs and the risk with them and, in return, we would be the exclusive sales organisation for the aircraft."

The company leases a Hawker 900XP and a Learjet 60 on this basis and uses them to supply on-demand charters. "We have exclusivity on a third aircraft but we don't share the expenses; just the profits," said Akkawi. "We're hoping to increase the number of aircraft that we offer



Nicolas Meszaros and the EAS management team have seen 70 percent growth over last year.

with a touch of 'grey'

under this model. Finally, we sub-charter to handle any excess demand."

Executive Sky's clients are mainly business people but also include well-off individuals and groups who club together to take their families on holiday to places like Sharm el Sheikh in Egypt. Other favoured routes connect Beirut with Cairo, Riyadh, Jeddah, Nice, Paris and London, while traffic patterns are shaped by the weather and the big religious occasions.

"The highest season we have is June-July, when it's unbearably hot in the Gulf region," said Akkawi. "People move out to Lebanon, Cairo, Morocco and right across Europe. On the other hand, during the first three weeks of Ramadan, there's almost nothing going on. Business people will travel at this time if they have no option, but otherwise they will postpone until after Ramadan."

Executive Aircraft Services sees some very similar patterns of demand and meets them with the Hawker 800XP that it owns and operates. Aircraft managed on behalf of private owners include a Hawker 850XP, an Embraer Legacy 600, a Challenger 300 and a Global Express XRS. "We have no plan to buy any more aircraft but we want to grow the management business," said Meszaros. "With our present capacity we could handle as many as 20."

The other two pillars of the EAS business are ground-handling and maintenance. "We got into

ground-handling in 2005," Meszaros recalled. "Now we've got 60 per cent of a very competitive market, along with one of the most modern sets of handling equipment in Beirut. It includes an electrical towbar-less tug, an airstairs unit that can handle aircraft up to 747 size, and a Mercedes S-class vehicle to move passengers to and from the aircraft and to the airport duty-free shop."

Maintenance joined the EAS portfolio last November, when the company was awarded aircraft maintenance organisation (AMO) certification by the Lebanese CAA.

Possible collaboration

"We started with a small amount of capability and we are adding to it every two or three months," said Meszaros. "We can do everything up to a B-check on our own aircraft, plus line maintenance on the Global Express and Challenger 300, and we're aiming to step up to four-year inspections on the Hawker."

He continued: "We're also talking to a big-name MRO about a possible collaboration, and we're looking for an experienced licensed engineer from abroad to help us reach European standards so we can get EASA Part 145 approval. On the ground-handling side, we're working towards IATA Safety Audit for Ground Operations (ISAGO) certification, which will be required from next year."

Further EAS aspirations include a doubling in

size of the company's coolly modern VIP lounge in the GA terminal, and acquiring a second hangar. The existing hangar, completed at the end of last year, can house a Global Express plus two or three smaller aircraft.

"But we need more space and want another building twice as big as the present one," said Meszaros. "We plan to use it for our expanded maintenance activity and to offer hangarage to further customers."

EAS will need this extra capacity to cope with soaring demand, Meszaros believes. "We expect to see the market growing at a steady 20 per cent per annum for at least the next three years. We know a lot of people who are interested in acquiring aircraft – there's going to be a constant demand for services like ours."

Executive Sky's Khaled Akkawi takes a similarly positive view. "We're planning to get an AOC within the next couple of years with a view to operating aircraft that we will lease or even buy," he said. "But first we want to see the market really booming again. Meantime, we're going to open a branch office in Riyadh next year in order to better serve the key Saudi market."

Commercial optimism, a hunger for expansion and a determination to meet the highest international standards – the commercial/VIP providers, big and small, have what it takes to make a significant contribution to the Lebanese renaissance.



Mustang takes the lead in the Open Sky stable

“What we saw in the downturn was people who are used to flying private aircraft coming down in size to fly with us in the Mustang and save on cost.”
Haytham Azhari

Business aviation operators in Beirut are used to taking risks, so when it came to selecting an aircraft to launch an operation, Open Sky Aviation was prepared to take a big one and order an aircraft that hadn't yet been built.

The aircraft was the Cessna Mustang and the Lebanese operator became the first in the MENA region to order and take delivery of the entry-level jet.

“Our plan was to lure business and first class passengers into private jet aviation,” said Open Sky director Haytham Azhari. “Of course this was before the global economic crisis, which hit just as we took delivery.

“The Middle East wasn't affected as badly as Europe or America but there was one big difference that we saw in Lebanon – European operators were not able to fly the hours they wanted to in Europe and so they came here.

“Of course, there is nothing wrong with that, it is just competition. But it has just made the market a lot softer in terms of prices.”

Like many others in the Lebanese business aviation community, Open Sky put ambitious growth plans on hold in order to see if the business plans of the last decade would work for the next.

“What we saw in the downturn was people who are used to flying private aircraft coming down in size to fly with us in the Mustang and save on cost. That has changed our requirements and we may need to look at something that's a little longer legged,” said Azhari.

“We were ordering more Mustangs but have put a hold on that to see which way the market goes. If it picks up and we see people moving from the airlines to private jets, we will get two or three more Mustangs; if we see people coming from larger jets then we will get something just a bit bigger.”

Cessna will be high on the shopping list for Azhari.

“We are comfortable with them. They have immaculate customer service and we have a beautiful relationship with Patrice Magot at Cessna in France, from where we bought the Mustang, and great rapport with Saad Wallan in Saudi.

Cessna has a good history and the people are good about being there when you need them.”

Open Sky Aviation was the brainchild of Azhari and a group of friends and family who shared the same passion for aviation. “We were a bunch of guys who love aviation – pilots, instructors and so on,” said Azhari. “I was doing consultancy helping people buy aircraft in Lebanon and saw there was a niche. The group of us decided to invest and set this up.”

Open Sky started in December 2003 alongside the country's liberalisation and is now based in the purpose-built GA terminal at Rafik Hariri Airport.

“We knew what we wanted to do, but equally knew we would have to wait before a very light jet would come to market. It was 2007 before the first Mustang was certified. So we had the company and procedures in place but not the tools,” explained Azhari.

He and the team spent a couple of years working on certification for an AOC. “We bought a Cessna 206 for sightseeing and aerial photography and got an air taxi operator's certificate, which works for nine passengers or less with non-turbine engines. We got a Commuter AOC for ten to 19 passengers for a turbine engine aircraft, which we needed to operate the Mustang in 2009.

“Lebanon is unique in that you have to have an AOC to run any aircraft here, even for personal aircraft. The CAA needs people to be diligent on maintenance and operating the aircraft. It's a system that works.”

Open Sky has been operating its Mustang for just over two years and Azhari is pleased with the results.

“We took delivery at the end of September 2008 and so far, so good. First year we flew 550 hours, which when you know many trips are one or two hours, is quite a lot. We flew around 500 hours in the second year.

“The airlines have stepped up to fly more frequently on some of the routes we were serving, like Cairo, for example. There used to be one flight a day but now EgyptAir and MEA fly twice daily.”



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SITA still happy to stand by Lebanon

Despite the challenges, one company has been keen to keep Beirut as its regional headquarters.

Alan Peaford
reports.

The offices are in a backstreet in the centre of Beirut, close to the Green Line, which bore the brunt of the damage in the civil war and felt the impact of the 2006 Israeli attacks.

But the company that stuck with Lebanon through those dark days has not only just helped the country's main airport and national airline compete with the best in the world, it is also a focal point for the whole of the Middle East region when it comes to technology.

The company is SITA, arguably the world's leading aviation technology provider.

"We have owned this building for almost 50 years now," said Hani El Assaad, SITA's regional vice-president, Middle East and Turkey.

"Lebanon has been always considered the window between East and West or Europe and Asia," Assaad said. "It is as close to the centre of Europe as it is to the Gulf. We are three hours from Geneva and the same to Dubai. Historically and politically it has been the centre of attention of many organisations. The issue is, that during the war some organisations decided to move out of Lebanon. We decided to stay because part of our business is to ensure we take business risks. We share risks with the airlines."

During the Israeli bombing, SITA moved some staff to the safety of Cyprus.

"The efficiency was as good as ever. We had to relocate some of the people to Cyprus and we moved people to be close to projects. So, if it was a project in Dubai, they had to go to Dubai. Of course, we had some question marks. Do we need to keep considering Beirut as regional office or not? Luckily it didn't last long and at the end of the day the number one headache is the cost. We consider Lebanon as the most cost-effective place to be. So that's why we decided

to stay. But we always have a plan in case something happens – I just hope it never will and things get better and better."

SITA is heavily involved in assisting airports and airlines develop the technologies to improve their efficiency and Assaad said there are good examples in Beirut's Rafic Hariri International Airport.

Earlier this year SITA helped MEA to implement an integrated baggage management system to reduce the level of mishandled baggage and improve security. The BagManager and BagMessage system already benefits 80 per cent of the airlines flying to Lebanon which have flights handled by Middle East Airlines Ground Handling (MEAG). It has now been made available to other ground-handlers at the airport.

Basically the SITA system provides passenger-bag reconciliation, which ensures the right bag gets on the right plane and is assigned to the right passenger. By reducing the number of mishandled bags, it is expected to deliver Middle East Airlines cost savings of up to 30 per cent.

From the regional headquarters in Beirut, SITA manages hubs in Istanbul, Cairo, Amman and Dubai. This spreads the workload, the relationships and the risks across the whole region. And it is working.

Major deals have been signed recently with Qatar and Abu Dhabi as more airports embrace the SITA digital airport and airline concepts (see story page 32). Syria and Iran are also investing, and Kuwait was one of the pioneers in advance passenger processing.

Assaad is preparing to work with Lebanon's civil aviation directorate on the country's new airport and terminal plans and will work with all of the stakeholders. Lebanon's airport and airline have already worked together to introduce passenger kiosks and other systems to meet the growing demand of passenger numbers.

"Beirut has become one of the hottest destinations in the world. I think the New York Times rates it as Top10, yet it used to be a no-go, or a red zone for most Europeans and Americans," Assaad said.

"Now we can see huge investment. I think what happened in the downturn was quite significant. The financial crisis affected many big organisations and countries but Lebanon was not really impacted. Lebanon stayed intact and the banking system was one of the safest. In fact, we saw a huge increase in banking deposits."

So will Lebanon invest in airport technology in the same way as the Gulf States?

"I think in terms of commitment they are the same and have not spared any effort to embrace the new technologies," Assaad said. "The only difference with the Gulf countries is that the budget is not available in Lebanon. In many cases in the region I have to say the Middle East airports and carriers are happy to pioneer and sponsor systems themselves, rather than relying on authorities. So they are so keen to embrace the new technology. They have sponsored it and offer their support to work the system."

Hani El Assaad: Basing SITA in Beirut is good for Lebanon and good for business.



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Commercial flight training in Lebanon is in its infancy.

Brendan Gallagher calls on Beirut Wings, a flying school with high aspirations.

Lebanon isn't the easiest place in the world to be a private pilot. For years the only source of training was the Aero Club of Lebanon, soldiering on valiantly from its quaint little two-room clubhouse next to the air force base at Beirut International.

Would-be pilots, undeterred by the military's security demands, tended to think again on learning that cross-countries would be limited to touch-and-goes at the country's other three airfields, all air force-owned.

But now one man is determined to drag Lebanese pilot training into the 21st century. He is Imad Khodari, chairman of Beirut Wings, and he wants to overcome the problems posed by the country's aviation infrastructure and offer private and commercial flight training that meets the highest international standards.

Based at the airport's GA terminal, the company was awarded flight training organisation (FTO) certification in 2007.

Khodari, a civil engineer by original profession, launched construction of a hangar and started acquiring aircraft. "We were the first in Lebanon to offer flight training on a commercial basis," he said. "We started with the FAA programme but have since switched to the European JAR syllabus and aim to get certification within the next couple of years. We want to attract students from Europe and to do that we must meet EASA's requirements."

European approach

There's another reason why Khodari favours the European approach. "The JAR programme is more strict, more detailed, better for the training of commercial and air transport pilots," he said. "I started my own flight training with the FAA system; it's practical, easy and direct. But then when we were deciding whether to go for JAR in the company, I sat down with our chief ground instructor to examine the differences. I concluded that the European programme produces pilots who really understand the fundamentals. I'm doing my own Commercial Pilot License (CPL) now and I'm doing it the JAR way."

The Beirut Wings aircraft fleet is currently all-Cessna – 150s, 152s and 172s. Of the three 172s, two have conventional instruments, the third a glass cockpit. "We think it's best to have a conventional cockpit to begin with before transitioning to digital for more advanced work," said Khodari.

The company's staff includes three full-time flying instructors – a Lebanese CFI plus an American and an Australian – and six part-timers, a chief ground instructor and six others, and over



Imad Khodari: Aiming to meet the highest of international standards.

Flying school plans to grow up fast

a dozen maintenance personnel. The total is expected to grow over the next couple years, according to Khodari: "We want to add new flying instructors from the UK to support our JAR certification effort."

At present the trainees are all Lebanese. "We won't be able to handle bigger intakes until the hangar is ready," said Khodari. "But we're already attracting a lot of interest from places like Abu Dhabi, Bahrain, Qatar and Saudi Arabia. As things currently stand, we expect to have around 50 people under PPL training in the coming year, along with at least 20 CPL candidates. Our marketing focuses on the high-quality, rigorous nature of the JAR syllabus."

Other standard-raising activities at Beirut Wings include recent company-wide participation in safety management systems training under the tutelage of safety and operational quality consultant Dr Oussama Jadayel, chairman of the mechanical and aeronautical engineering department at

Lebanon's University of Balamand. "I think that, in time, every Lebanese aviation company will come under pressure to do this," commented Khodari. "We're just thinking ahead."

Khodari is also thinking ahead about expanding what Beirut Wings can offer to the market and his plans are ambitious indeed. "We want to buy more 172s and three Cessna SkyCatcher 162s, a Piper Arrow and, for twin-engined work, a Diamond DA-42 and a Piper Seneca V," he revealed. "We also need a couple of simulators – one fixed, the other full-motion. We'll probably get them from Frasca – its products are very good, and cheaper than the competition."

The present fleet is maintained in-house and Khodari has high hopes in that area too. "We have applied for approved maintenance organisation (AMO) status and we aim to start offering services to third-parties when we complete the hangar," he said. "In its final form it will have eight classrooms fully equipped for computer-based training, a library, a pilots' lounge and 3,000sqm of space for maintenance workshops and offices."

The Beirut Wings founder is confident that this capacity will be fully utilised in the years to come. "Now that people in this region know what we can do, they're enthusiastic about coming to us for training," he said. "So I'm very optimistic that demand for our services will grow. There aren't many flying schools in this part of the world and only two or three of them are comparable with our operation."

Matching the best of the competition won't be enough for Imad Khodari, however. "I love my country and want to do something for it," he declared. "If we can achieve our programme, Beirut Wings will be the best flying school in the region."

Ups and downs for Beirut's historic flying club

It was more than 70 years ago that the Aero Club of Lebanon first opened its doors in Beirut following a presidential decree to form the club.

These were the heydays of Lebanon, with the Mediterranean resorts competing with the cote d'Azur for the attentions of the rich and the famous.

The Second World War halted the activities but in the 1960s, as Lebanon began to enjoy the post-war boom, so the Aero Club began operations again.

"We started again in 1962," said the club's Michel Abboud. "We had the support of the president of the country, the president of Middle East Airlines and the director for civil aviation; you couldn't ask for better support than that. King Hussein of Jordan gave us two Austers and the club bought a Cessna 150 and had a Cessna 172. By 1965 we had an effective private pilot licence (PPL) programme in place."

Hundreds of Lebanese pilots have passed through the Aero Club over the past 50 years and many of the people heading the various aerospace companies in the country took their first flights in one of the club's battered, but well maintained, aircraft.

Mazan Bissat, the owner of Lebanon's national cargo carrier TMA and Med Airways, took his first tentative flights with the club, as did Haytham Azhari from Open Sky.

Abboud has been president of the club and an

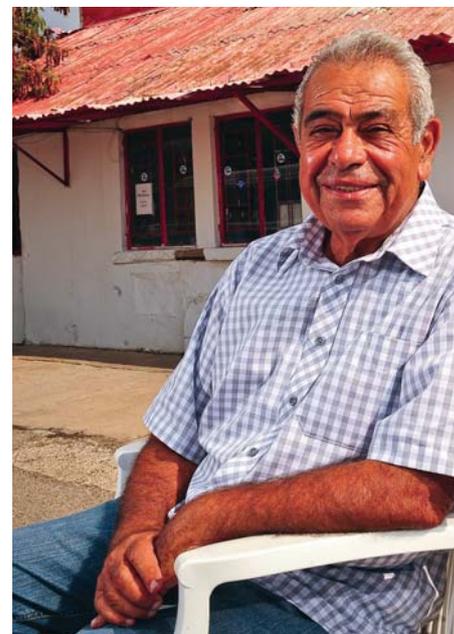
instructor and has seen many of the aviation community come through its doors. He has also seen the bad times, as the club was again suspended during the civil war.

"We had had six aircraft and were getting a subsidy from the government of \$50,000 and were flying 3,000 hours a year. Then the civil war came and everything stopped," Abboud said.

In 1995, with relative peace in the country, the club started again, bringing a pair of Cessna 150s and a 172 out of storage and adding a Cessna 206 and a 310 to the fleet.

Without the subsidies, the club has battled to continue but it has done so. With 85 members and 15 students, the club is fighting to stay alive. "We have the passion but it is curtailed by cost," said Abboud. "Avgas is \$3.15 a litre. We reckon on it costing around \$13,000 to get a PPL now. "We want people to continue enjoying flying after they get their PPL," said Abboud. "We do a route check for new PPLs taking them to Turkey or the Greek islands. There are also some great places you can fly to around Lebanon."

The Aero Club also welcomes PPL holders from other clubs around the region. "Documents need to be sent ahead of time," said Abboud, "We then work with the authority to get a 'recreational licence' and then it is a question of understanding the particular restrictions of flying in Lebanese air space."



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Lebanon's cargo flag carrier has been rescued and is looking at new opportunities. Alan Peaford meets the man behind TMA's rising.

Pharmacist finds the chemistry for success

When young pharmacist Mazen Bissat looked out at the skies over Beirut and day-dreamed of flying he could never have believed that, within ten years, he would own Lebanon's second airline – the cargo carrier TMA – and control a charter operation with the potential to give the country its first low-cost carrier.

"Aviation is like a hobby to me," Bissat said. "I am still a pharmacist and own a chain of pharmacies, but aviation is my passion."

Outside the window of his newly-decorated office on Beirut's Rafic Hariri Airport there is a newly painted Airbus A300-600 with barely 2600 cycles on the clock being prepared for its weekly flight to Paris CdG.

Trans Mediterranean Airways (TMA) was the second AOC awarded by Lebanon back in the 1950s and, in its heyday, had a fleet of 11 Boeing 707s and two 747s.

Ravaged by the effects of the Lebanese civil war, when it had to move operations to Larnaca and Sharjah, and was then the subject of a management buy-out, the airline faltered and finally suspended flying operations and survived only by providing maintenance and engineering services for private owners using the Beirut airfield.

As the company floundered, one of those customers stepped up to rescue the business. That customer was Bissat.

The pharmacist's dream was to fly. He learned in Beirut and, in 2000, bought his own Piper Cherokee. With friends, he would fly around his country and make occasional vacation flights to Cyprus or the Greek islands. But he listened to others and realised there was a niche market just waiting to be filled.

"If groups of people wanted to go anywhere, they could get a Citation with six seats but that was about it. But if there were nine people or more, they had to go elsewhere," he explained.

Bissat researched the aviation world, bought a second-hand Metroliner and took the third AOC from the Lebanese Civil Aviation Authority under the name of Flying Carpet.

"Business started to develop after the invasion

of Iraq and we started to fly to Iraq frequently. People wouldn't fly there; it was dangerous and nobody was interested. Of course now they are, and because of the regulation on the Middle East Airlines (MEA) monopoly we had to stop.

"That is an unfair regulation and wouldn't happen anywhere else in the world. Lebanon is losing a lot from this regulation. MEA is trying to show that this regulation is good for Lebanon and MEA. It is not, it is bad for Lebanon," Bissat said.

"Whoever wants to fly economy, they are looking for cheapest – not the full service like you would get in business class.

"Now the low-cost carriers are here. Flydubai has 189 seats and operates two full flights a day. MEA has full business class but that is it.

"Open sky should not be just for in-bound. How many jobs are we losing because of this regulation?"

Flying Carpet colours

At the end of 2005, Bissat bought a Boeing 737-200 and began painting it in the Flying Carpet colours. Iraqi Airways came in to lease it.

A year later he bought a second 737-200 and began to replace the Metroliner on the Iraq routes and even opened routes to Stockholm, Berlin and Hanover – places that MEA was not going.

In 2008 Flying Carpet bought a Bombardier CRJ-200 50-seater to supplement the routes with the support of the Mediterranean Bank and changed the airline's name to Med Airways. Later the same year he bought the cargo carrier and began the restructuring which led to the scrapping of the old fleet, which will be complete by the end of this year.

The Airbus A300-600, formerly with Galaxy in Japan, was leased and flights to CdG began flying in July. TMA is the cargo carrier of Lebanon and so bilaterals are in place. "It is not an easy job to revive TMA but it is not impossible," said Bissat.

Meanwhile, the Boeing 737-200 type is banned from Lebanon and so the two aircraft in the Med Airways fleet are being sold.

The company has ambitions to begin low-cost operations.

"We applied to fly to Alexandria in Egypt but, because of the MEA monopoly, we were stopped. Ironically, soon afterwards Air Arabia began its flights from Alexandria to here," said Bissat.

"I want to put TMA back on the map as a leading cargo airline. The old concept will not work but we are going to connect continents.

"We have already applied for traffic rights to Iraq. The transition is on. They are making it difficult for people flying to Iraq. They want people to contact RAS Aviation in the UAE. We cannot contact a third-party as a national carrier and the Lebanese Civil Aviation directorate has sent a letter. A month has passed by without an answer.

"There are so many markets available but I am concentrating on one at a time. We have a logistics company at CdG with cargo for Syria and Lebanon from all over Europe.

"We used to operate to Amsterdam and Milan. Our target is to have four flights a week – two to Paris and one each to Amsterdam and Milan. In this region we will serve the Gulf and some African countries. In the future we will be buying more aircraft."

Bissat said he is pleased with performance of the Airbus so far but is watching its operating costs. "TMA was always a Boeing company but we took the Airbus because of an opportunity. It is working well. We have no surprises or maintenance issues."

Maintenance on the TMA and Med Airways fleet is managed by Lufthansa Technik, which has been providing a training programme for the TMA maintenance staff. Lufthansa Consulting is also helped plan the restructuring.

"For Med Airways I don't see a profitable business from now until 2012. We have had to lay off employees," explained Bissat. "We had 95 and now have 35. But hopefully we will go back to profitability.

"We will not operate long-haul. We will be operating in the region of two to four-hour flights and then maybe we can go further – the Gulf and Europe. We will not be competing with MEA and I am sure they will not lose business from us."





MEA Ground Handling enjoys the lion's share of the airline business at Beirut International. But the company is hungry for more and is casting its eyes further afield.

Brendan Gallagher reports.

Step by step to the top flight

We make our living from passenger traffic into Lebanon, explained Richard Mujais, general manager of Middle East Airlines Ground Handling (MEAG).

"Two years ago we handled 14,000 airline turn-rounds – we expect this to grow to 24,000 this year. It's a reflection of the growth of the national economy and of increasing interest in business and leisure travel to this country."

Mujais and his 1,400 staff supply the full range of handling services to airlines and business/VIP operators passing through Beirut's Rafik Hariri International Airport. Owned by the parent carrier, MEAG currently claims an 80 per cent share in the market in airline handling – up from 76 per cent last year – plus around 35 per cent of the movements at the airport's general aviation terminal. Principal competitors are Lebanese Air Transport on the scheduled side, and Executive Aircraft Services in the business/VIP sector.

"Our share of the airline business has been growing steadily for the past five to ten years – it was 66 per cent at the beginning of the decade," said Mujais. "And there's still plenty of potential for growth in the size of the market itself. No North American airlines operate into Beirut and there's only one – Malaysian Airlines – from Asia-Pacific."

But first, Mujais acknowledges, there will have to be a significant expansion of terminal capacity at Beirut International and that may not prove easy at a site shoehorned between densely populated hills to the east and the Mediterranean

to the west. "The existing terminal is now operating at its maximum capacity of six million passengers a year. There's a plan to triple that by building on the existing parking area – but when it will be realised I don't know."

So far the capacity conundrum has proved to be no bar to continued growth in MEAG's airline customer base. Apart from parent MEA, the list includes Europe's Air France, Alitalia and Lufthansa, all the big names in the Middle East, low-fare operators Jazeera and Air Arabia, Kuwaiti premium operation Wataniya, and cargo specialist Cargolux.

Four newcomers

There have been four newcomers this summer – Berlin-based Germania, Latvian low-fare operator Air Baltic, Icelandic charter carrier Primera and Turkish low-fare Pegasus. "Pegasus is the third Turkish carrier to launch operations to Lebanon this year," Mujais commented. "The recent waiving of the visa requirement between Turkey and Lebanon has led to significant growth in business and leisure traffic."

The greater part of the airline traffic through Rafik Hariri International is composed of visiting friends and relations. "There are big Lebanese expatriate communities in Africa, the USA, Canada, Australia, France, Germany and Sweden," observed Mujais. Business and tourism make up the balance.

MEAG's business/VIP clients, handled by its Cedar Jet Centre operation at the GA terminal,

include both corporations and high-net-worth individuals. "Some are foreigners, some are Lebanese citizens with their own aircraft," said Mujais. "They fly typically between Beirut and the Gulf – a lot of people there own property in Lebanon – as well as Europe and Africa. And, as in the air transport market, travel patterns are also influenced by the location of the Lebanese diaspora around the world."

Despite recent successes, Mujais is making sure that the company doesn't rest on its laurels. "The way ahead is a combination of the scientific method – measurement and standardisation – along with creativity in developing new solutions," he declared.

In common with many other Lebanese aviation companies, MEAG takes international standards very seriously. "We continue to raise our game in this respect," said Mujais. "We've had an ISO certificate since 2005 and are now in the process of upgrading it. This is the mother of all certifications – if you've got ISO, you're in a position to get all the rest."

The rest include the IATA Safety Audit for Ground Operations (ISAGO). "We've had this since 2008 and we think it's particularly important to our business," he said. "Before long non-ISAGO handlers will be barred in Lebanon and I think other countries could follow suit."

When it comes to creativity, MEAG has recently developed and implemented IT systems designed to improve performance, as well as investing heavily in new equipment and staff

GROUND HANDLING

‘Our share of the airline business has been growing steadily for the past five to ten years. And there’s still plenty of potential for growth in the size of the market itself.’

Richard Mujais

training. “If you don’t stay focused on these three things, very soon your customers will be dissatisfied and you won’t be profitable,” cautioned Mujais.

With additional passenger terminal capacity at Beirut still to be assured, the MEAG boss is looking elsewhere for short-term expansion opportunities. “We definitely want to operate in other national markets – it’s an objective of ours,” he said. “We’re making a start by helping another Middle Eastern provider to obtain ISAGO certification.”

Cargo could also provide an opening. The company currently handles 70,000 tons of cargo and mail a year. “But we’re ultimately limited by the existing 5,000sq m facility, which is owned by Lebanese Customs,” said Mujais. “We plan to get round this bottleneck by building our own 20,000sq m warehouse. We’re looking at exactly how much space is available; then we’ll launch the project. Customs will still be present, of course, but the warehouse will be ours.”

Attend any Middle Eastern aviation industry gathering and it doesn’t take long before complaints of market-bending government interference will be heard – but they won’t come from Richard Mujais. “The Lebanese CAA regulates us as far as safety and security go, but the business decisions are all in our hands,” he declared. “There’s an ‘open skies’ environment here and I think it’s responsible for the very healthy growth in air traffic that we have experienced over the last few years.”



Former Flying Carpet gives VIPs a real lift

Med Airways officially started in 2001 under its former name, Flying Carpet, and was the first private company in Lebanon to receive an Air Operator Certificate. Located at the general aviation terminal where all VIP aircraft to Beirut arrive, the service begins once the aircraft has touched down.

"We handle a VIP aircraft from the moment it lands to the moment it takes off," said Nazih Sabeh, ground-handling operation manager. "We provide all kinds of services from fuelling, aircraft maintenance, visa-processing, hotel reservations, transportation, porter services, and basically anything at all a VIP requires. We will make sure the needs are met."

Depending on the season, the company looks after approximately five VIP flights a day.

"When an aircraft comes in we take care of the VIP first and process his or her visa into Lebanon. We unload their luggage and put it in either their own vehicle or one we have arranged for them. We also walk the VIP through immigration to the car, where we have arranged its access into the terminal.

"We then ask the captain what the aircraft needs on the flight out, such as fuel, water, and catering service, or if there are any technical problems, as we have a technical team through our sister company GMA providing support. After

we have done with the aircraft we move it to VIP departures and then process the flight plan. It might just be here for an hour, so we process this quickly and file it through to the Lebanese Civil Aviation briefing room and make sure everything is in order for them. We provide the weather conditions for the trip and set up the aircraft in the VIP departures spot in time for the VIP to arrive and be ready to leave.

"We have 13 operational staff on hand, as well as drivers and marshals," said Sabeh.

All VIP flights are met by Sabeh, himself, who has been at the helm for a year.

He explained: "We cater for businessmen; celebrities; royal family members; sheiks; and families. This week, alone, we have had three heads of state fly in. I want to show VIPs how important they are to us. If I greet them, I can sort out any issues or needs straight away and they feel secure knowing the manager is on site to attend to them.

"We form a personal relationship with our VIPs and after a short period we know exactly what they want. If they want us to go to the supermarket for them, we will do that. We are a 24-hour operation and will provide over and beyond what both the VIP and the aircraft needs."

Customers tend to be from the Gulf and Arab countries and use Beirut as a main gathering and meeting point for meetings, conferences and exhibitions.

Aircraft can stay for as long as is needed, from an hour to a month or more, for a charge by the Civil Aviation Authority.

"This is our operating hub and we are progressing each year and intend for that to carry on," said Sabeh. "We have a lot of competition in the market here but if you have good planning and exceptional service it is a case of balancing it up with the pricing and this will make a big difference. Some companies lower their costs to receive more aircraft but the service is not of a high standard. We have an exceptional standard of service, and this is what matters.

"We have learnt to grow significantly over the past seven years and continue to do so today, not forgetting to always update our offerings and services with all kinds of innovations and new solutions that take place in the world of aviation."

Nazih Sabeh: "I want to show VIPs how important they are to us."





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BOMBARDIER

Being served lunch on board a flight is a simple process but not many passengers realise the amount of work that goes on behind the scenes to make sure food is delivered fresh to such high standards. Marcelle Nethersole reports.

Thought for food...

Lebanese Beirut Airport Catering Company (LBACC) currently monopolises the aviation catering sector in the country.

Previously located at the old airport in Beirut, it is now minutes from the tarmac at Rafic Hariri International Airport and runs a 24/7 operation.

"We started up in Beirut Airport in 1969 and now the company is 78 per cent owned by Middle East Airlines (MEA), our biggest customer," said Elias Roufail, general manager.

The company is separated into two parts, in-flight services and ground services.

It caters for around 24 airlines, including Qatar, Emirates, Etihad, Gulf Air, Royal Air Maroc, Lufthansa, Air France, and Malaysian Airlines, as well as charter and VIP flights.

"We have around 280 staff working in in-flight services in production and operation. We're a 24-hour operation and work over three shifts to make sure we serve fresh meals directly to the aircraft during the day and night. We serve between 5,000 and 12,000 meals a day, depending on seasons. Peak periods are August and September," said Roufail.

All catering requirements are met at the facility, including vegetarian meals, religious dietary requirements such as Hindu meals and Islamic meals, as well as low-fat meals.

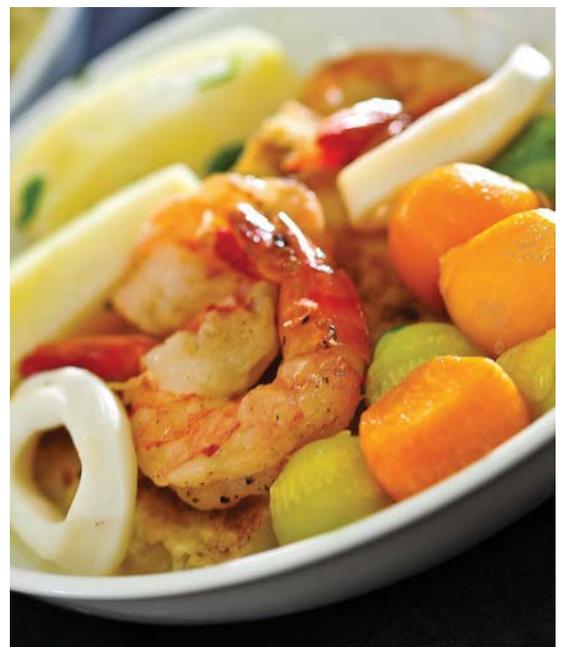
Roufail explained: "Airlines present us with their policy and what they require, as well as their budget. We listen to their ideas and then we decide on a menu and present them with it, which they can then decide upon. Menus change cycles. MEA alters every two weeks; Emirates has four cycles and changes every month, while Lufthansa has five cycles and changes every week.

"Great lengths are taken to make sure food is to the highest standard in terms of freshness and hygiene. All food is served within 24 hours for freshness. We give hygiene training to staff before their full-time employment and refresher courses while in employment. We also give safety and security training, with a reminder every three years, which is a requirement by the CAA," said Roufail.

Food handlers are certainly put through the mill with regards to medical checks, which include blood and faecal tests to check for anyone who may have a virus, infection or be carrying a parasite. Random hand swabs are also taken to make sure everyone is clean. Two doctors are at the facility on a daily basis and, if anyone is taken ill at work, they are looked at straight away by one of the medical team.

The food is then put through various tests to make sure it's fresh enough to be delivered and consumed.

"We have an in-house laboratory for micro-biology to test the production line and control all food activities, as well as test the water and ice. We also do cleaning swabs on all equipment. There is more to the plate than just food – a big process takes place," said Roufail.



Once food is complete, it is refrigerated until it is required on the aircraft and sent by one of five chilled high-loaders.

"We adopted HACCP, which stands for Hazard Analysis Critical Control Point, an English system adopted by the ITCA organisation. The HACCP system is strictly implemented at LBACC, to serve safe and healthy food. We also have a fleet of small cars used for last-minute orders," said Roufail.

LBACC gets audited by all the airlines, a right within the contract.

Roufail, who has been general manager since 1997, explained: "We are audited with regards to hygiene and operation. For instance, if a plate of food is slightly over the specified weight, we are penalised. Weight plays a very important factor. For short-hall flights we provide smaller meals. Long-haul flights the weight increases as we provide more meals for that particular flight."

Ground services are also handled by the company. It holds a monopoly at the Beirut airport, which ends in five years.

"We also operate all restaurants, snack bars and VIP lounges at the main airport building. We have around 120 staff at seven outlets."

A large laundry department also runs at its facility supplying a laundry and ironing service to all the airlines, for all materials onboard the aircraft including staff uniforms. There is also a cleaning section with cleaners on hand 24/7, and a pest control service.



Christian Dukers - head chef from Belgium: "We make meals appetising by taste and make sure they're with colourful ingredients, so pleasing to the eye."

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Abdulla Abulhoul: "The Dubai Helishow 2010 will help meet the critical needs of various organisations."



Helis in good health

The Middle East remains a focal point for future growth in the helicopter industry. The fourth Dubai Helishow from November 2-4 will provide a useful barometer of the sector's recovery from a difficult two years. Paul Derby reports.

Rotary wing manufacturers have not been immune to the global economic crisis but the innate flexibility of the helicopter, and its ability to operate in sectors as diverse as search and rescue and offshore oil, has cushioned the industry from an orders meltdown.

With analysts predicting a strong recovery in 2011, the Middle East market will play an important role as its use of helicopters continues to expand at a rapid rate.

The biennial Dubai Helishow, held at the Dubai Airport Expo Centre, will attract manufacturers and technology providers as well as some of the region's most influential figures, including delegations from the Gulf Co-operation Council (GCC) countries. The show aims to cater for a wide range of sectors including civil, military, aero-medical and search and rescue.

While the backbone of the industry in the region will remain the offshore oil market, the use

of helicopters for other missions, such as emergency medical services (EMS) is growing, alongside the established VIP and passenger transport markets.

Abdulla Abulhoul, CEO of event organiser Mediac Communications & Exhibitions, explained why the show is ideally placed from a geographic standpoint: "In a report on the UAE's health sector, the World Health Organisation points out that the rapid growth in the UAE has been mirrored in the local healthcare sector.

"This, in turn, has spurred the evolution of the air medical and rescue services. With development taking place across the mainland and coastal areas, there is a growing dependence on helicopters for transportation of passengers and equipment, as well as the transportation of patients and supplies during emergencies.

"The Dubai Helishow 2010 will

Continued
on Page 90



CONTINUED FROM PAGE 89

help meet the critical needs of various organisations and play a vital role in the strategic development of the region.”

The event will also host the first Military & Homeland Security Exhibition. The exhibition, which will be complemented by the Defense & Paramilitary Conference, will draw senior speakers from both the military and industry and outline the technological developments taking place within military and paramilitary helicopter communities.

Deals continue to flow:

In the months leading up to the show, manufacturers have sealed a number of important deals in the region, underlining the Middle East’s position as a key market for helicopters.

During the Farnborough International Airshow in July, Sikorsky announced a deal to sell 12 S-76D helicopters to Saudi Arabia’s Ministry of Interior (MOI). The contract includes options to acquire eight additional S-76Ds. The aircraft will perform security, transport and other missions, with first deliveries scheduled for early 2012.

Saudi’s MOI is also the launch customer for the international version of Sikorsky’s Black Hawk, the S-70i. The manufacturer will deliver

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three aircraft initially with Saudi Arabia taking options for 12 more. The first aircraft will enter service early next year, performing missions including transport and border protection.

Elsewhere Sikorsky Aerospace Services (SAS) announced the signing of a Basic Ordering Agreement with the Royal Jordanian Air Force (RJAF). The one-year \$8 million agreement will support the RJAF fleet of 13 S-70A Black Hawk helicopters. SAS has also launched a joint venture with Abu Dhabi Aircraft Technologies to provide military maintenance repair and overhaul services to the UAE armed forces and other operators in the Middle East and North Africa.

Eurocopter will be participating in Dubai Helishow and continues to strengthen its position in the region, with more than 650 aircraft now in operation. Recent deals include the sale of two EC145 helicopters to the Turkish State Airport Administration, a subsidiary of the Turkish

Ministry of Transport. The helicopters will be delivered towards the end of 2010.

The AW139's capabilities in the offshore sector are helping AgustaWestland to secure orders in the Middle East.

The manufacturer handed over three AW139s to Saudi Aramco in June. The aircraft will be used to support oil and gas operations in Saudi Arabia.

AgustaWestland is also a 25 per cent shareholder in the Libyan Italian Advanced Technology Company (LIATEC), which opened a new facility at Abou Aisha airport, 60km south of Tripoli, earlier this year.

The company has recently sold more than 20 helicopters in Libya, including AW109 Power light twins for border patrol duties, AW119Ke single-engine aircraft for emergency medical service missions and AW139 medium twins for general security.

AgustaWestland signed a joint venture

agreement with Abu Dhabi Aviation at the end of 2009 to form a maintenance and training business in the Emirate. The manufacturer is also in the midst of deliveries of 18 AW139s to the Qatar Armed Forces, which joins the UAE Armed Forces as an operator of the type in the region.

One of the largest contracts currently under competition in the Middle East is the Turkish Utility Helicopter Programme (TUHP), which covers more than 200 aircraft.

The two competing types – the AgustaWestland AW149 and the Sikorsky S-70 – expect a decision on the delayed programme before the end of this year.

It is against this backdrop of recovery and renewed optimism for 2011 that the helicopter community will descend on Dubai at the start of November to debate the technologies and platforms that will keep the Middle East at the forefront of the rotary wing industry.

Timken highlights new expansion

Helishow Dubai will be attracting a lot of international support this year. One company making the trip is Arizona-based Timken whose aerospace aftermarket solutions business is upgrading and expanding its facilities at Mesa, near Phoenix, Arizona with the acquisition and conversion of a building next to its existing facilities.

The company is also moving its engine overhaul business from Tucson to the new, purpose-designed building.

When the process is complete, the original Timken facility will be responsible for parts manufacturing, while the new building will be the overhaul centre.

Siegmar Keiner, Timken's aerospace business manager for Europe, the Middle East and Africa, said this meant that the company would be able "to handle more of our customers' needs at one location, thereby reducing downtime and providing greater convenience and value to the customer".

The Arizona facility has received ISO9001/AS9100 certification and already operates under the authority of a FAA Air Agency Certificate, FAA PMA and Approval Certificates from the US Air Force, the European Aviation

Safety Agency and other international agencies. It is also an authorised repair centre for Goodrich Pump and Engine Control Systems.

These new developments will be highlighted at Helishow Dubai, providing what James Peck, UK and Middle East sales manager, called: "an excellent opportunity for new customers to learn about all that Timken has to offer".

And the company, which has served the aerospace industry for more than 75 years, does offer an extraordinary array of services and products, providing precision-engineered components and assemblies for both OEM and aftermarket customers, as well as a full range of MRO capabilities for a diverse array of aircraft fleets, from military helicopters to fixed-wing commercial aircraft.

Timken services Bell UH-1 Huey, and AH-1 Cobra military helicopters, as well as the civil Models 204, 205 and 212. The company also services an array of engines, including the Model 250, PT6, T53, and T56/501, as well as a variety of auxiliary power units.



EVENTS

Key issues on the agenda at Doha summit

The Doha Aviation Summit is putting itself very much at the top of the "must attend" list for anybody involved at the serious end of the aviation industry in the Middle East.

Following last year's successful first summit the organiser, Naseba, has built on the feedback from delegates and worked with the hosts, Qatar Civil Aviation Authority, to create a programme that will address the key issues affecting the industry and bring in some of the biggest names.

Under the theme of 'vision for limitless skies', the summit will host more than 200 influential leaders and representatives from international airports, airlines, civil aviation authorities, and government bodies discussing the key challenges facing the industry and strategies for unified growth and development.

Key issues to be discussed at the summit, which takes place from October 30-November 1, include:

- Investigation of the volcanic ash disruption and its impact on aviation organisations outside of Europe;
- The formulation and implementation of

a sustainable regulatory framework as COP16 approaches;

- ATC route management in sync with the Middle East airport expansion projects through hub growth;
- The human resource challenge in the Arab world;
- Financial risks and management challenges;
- Effective integration of alternative fuel research and implementation for mass transport in line with the international reforms and rising fuel costs.

One highlight of last year's event was the question and answer session with a group of chief executives chaired by *Arabian Aerospace* editor Alan Peaford, who will be back this year to draw out answers to difficult questions.

Speakers invited to participate in the session include Akbar Al Baker, CEO, Qatar Airways; Willie Walsh, CEO, British Airways; Adel Ali, CEO, Air Arabia; His Excellency Khaled Al Mohlem, director general, Saudi Arabian Airlines; Herbert Kaufmann, CEO, Vienna International Airport and Monhla Hlahla, CEO, Airports Company South Africa.



Doha speakers: Akbar Al Baker, top, and Willie Walsh.

Top manufacturers heading for AVEX

The final touches are being put together for AVEX – the key show for North Africa – which takes place in Sharm El Sheikh from November 7-10.

With many of the leading manufacturers including Boeing, Airbus, Cessna, Gulfstream and Bombardier all bringing aircraft, there will plenty to see over the four days. There is a large emphasis on business and private aviation and running alongside AVEX is an event for people who want their aircraft to be just a little bit different.

The Custom Jet Show is the region's ultimate exhibition for customised aircraft. As demand for private aircraft increases in the region, so does the demand for designer interiors, personalised liveries, in-flight entertainment, and other means of refurbishing aircraft according to the owners' requirements and tastes.

The show brings some of the region's most advanced, luxurious and aesthetically customised aircraft to Sharm El Sheikh International Airport and this year will feature the Aircraft Livery Prize in partnership with Happy Design Studios. Winners will receive free livery consultation services by Happy Design Studios' design experts.

The awards ceremony takes place on November 8 2010 at the Grand Rotana Hotel.

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Alan Peaford and Jon Lake *report from the biggest air show of the year, where there was great optimism with news of new aircraft, new players and new orders.*



Farnborough goes like a Dream...

Boeing turned up at Farnborough with a clear message that it was not seeking headlines through orders – it didn't need to.

The international debut of the American company's much-delayed Boeing 787 Dreamliner meant global media were scurrying to get a shot as it made its first appearance away from its test grounds in the USA.

It left the show on the second day with a guard of honour from two World War II Spitfires, an ideal image reflecting just what the world's second biggest aerospace event is all about – looking at heritage and the future.

With record numbers exhibiting and hundreds of thousands of visitors attending the public days, the Farnborough International Airshow 2010 gave a clear signal that affection for the aerospace industry is as strong as ever and that the business is firmly back on track.

Despite its protestations about orders, Boeing was happy to report commitments for more than 200 aircraft during the week with 30 Boeing 777s, worth more than \$9bn to Emirates, as the highlight.

Airbus was even more bullish. It recorded more than 250 orders, worth \$28bn, with the company rapidly re-evaluating its sales targets and production rates.

At the centre of the surge lay the leasing companies, headed by the former ILFC founder Steven Udvar-Hazy, who launched his own new

leasing company, Air Lease, with a raft of Airbus and Boeing orders – but also added Embraer regional jets and even ATR turboprops to his shopping list.

The show was a success for the Brazilians with 180 orders for E-jets. Sukhoi clocked up orders for more than 100 of its Superjets and ATR recorded sales of 72 aircraft.

Russia's new mainline jet, the MS-21, was represented by a cabin mock-up. Irkut showed an impressive wide economy seat in the planned interior, which will eventually take 150-210 passengers. Ilyushin Finance added credibility to the programme with firm orders for 28 and options for 22 more; these were followed up by orders from VEB-Lizing and new lessor Crecom, bringing the manufacturer close to its 100 aircraft target (see story page 23).

Of course the Dreamliner was the star. It was supposed to be at Farnborough two years ago but finally arrived on the eve of the show – marking the end of the carbon-fibre airliner's first transatlantic flight, which had begun 9h 31min earlier from Boeing Field, Seattle.

The Dreamliner ZA003 is one of four Rolls-Royce Trent 1000-powered 787s involved in the flight-test programme and was equipped with a partial cabin and test equipment.

"We've had flights that were this long before but this was the first time we've gone international and the first time we've not ended up back at

Boeing Field on a flight of this length," said test director ZA003 Tom Sanderson, who was on board.

As well as impressive daily demonstrations from the A380, Airbus also had a couple of debut aircraft. The first was the A350-200F freighter. Launch customer Etihad Airways took delivery at the show, saying it will deploy the aircraft on routes to Africa and China from its Abu Dhabi base (see story page 26).

For many observers, however, there was concern about what wasn't being talked about – the Bombardier C-Series. Expectations that Qatar Airways would be announcing itself as a launch customer were dampened when the airline CEO, Akhbar al-Baker, said the cost of maintenance guarantees from engine-maker Pratt & Whitney were way too expensive.

But there was some good news for the Canadian manufacturer – al-Baker ordered two Global 5000 business jets for the Qatar Executive fleet and then stunned Bombardier by adding a further order on the spot for a Challenger 605 to be used for medevac. But, as the show started with the new, it ended with the old. Aircraft from the second World War and the Cold War paraded on the public days with Spitfires, Lancaster bombers and, of course, the spectacular Vulcan bomber performing. The message from Farnborough was simple. Aerospace good days are back!



Why show delegations

On the face of it, 2010 may not have seemed to be a 'classic' Farnborough year for the Defence aerospace sector. Recession meant that there were no major order announcements and most of the new types making their debut at Farnborough had already been seen at Berlin or Dubai. The exception was the Sino-Pakistani JF-17 fighter, and that was on static display only!

But behind the relative paucity of new-to-Farnborough aircraft at the show, business went on as usual, with plenty of high-powered delegations looking hard at potential new acquisitions, and quizzing their manufacturers about costs and capabilities.

And there were plenty of aircraft that were new to Farnborough, or that were demonstrating things that we had not seen before, and companies had a great deal to show in the halls and pavilions, or sometimes just via PowerPoint and slideshow.

Making its international airshow debut was the Sino-Pakistani Chengdu JF-17 Thunder, with the Pakistan Air Force (PAF) deploying two examples of the type from No.26 Squadron 'Black Spiders' at Peshawar. These aircraft flew into the show but thereafter remained on the ground, forming part of the static display but not mounting any demonstration flights.

Jointly developed by Chengdu and the Pakistan Aeronautical Complex, the Thunder (known as the FC-1 in China) was primarily developed to meet Pakistani requirements, but is also expected to carve a niche for itself in the export market. First flown in 2001, the first of eight Chinese-built aircraft was handed over to the PAF in 2007, with the first of 42 locally-assembled aircraft following in November last year.

The PAF has a firm requirement for 150 JF-17s, and China is believed to have offered the jet to Sudan, Azerbaijan, the Democratic Republic of Congo, Nigeria, the Philippines, Sri Lanka, Venezuela and Zimbabwe, while Pakistan is understood to have held discussions with Egypt and Turkey.

Revised landing gear

Another Farnborough debutante was Saab's demonstrator for the new Gripen NG variant, with a more powerful F414G engine, modified engine intakes, and a revised landing gear that allows increased fuel capacity, as well as advanced avionics and displays.

The Gripen NG will carry a heavier war-load than the original JAS 39 Gripen, and will be integrated with the latest air-to-air and air-to-ground weapons. The aircraft has already flown with a new Selex AESA radar, which features that company's 'swashplate' repositioner, giving much

better azimuth coverage and longer range at higher off-boresight angles. The Gripen NG is being offered to meet India's medium multi-role combat aircraft (MMRCA) requirement, and will compete with aircraft like the F-15, F-16, Rafale, Typhoon and F-35 Joint Strike Fighter in a number of forthcoming fighter competitions and evaluations.

Although the wars in Iraq and Afghanistan have re-opened debate as to the merits and usefulness of cheaper, lighter, turboprop-powered close air support (CAS), counter insurgency (COIN) and light attack aircraft, major air forces have thus far refrained from putting armed versions of existing turboprop trainers into their inventories. Aircraft like the Hawker Beechcraft AT-6 (shown at Farnborough) and Embraer Super Tucano have attracted more interest from developing air forces. Thus, while the US Forces are still extensively evaluating these types of aircraft, the AT-6 is in service in Iraq and Greece, with further regional orders likely.

Alongside the various fast jets and trainers, the Airbus A400M proved to be an unlikely star of the flying display, reprising the impressive performances it had earlier given at both Berlin and Fairford. Airbus sent the second prototype to Farnborough, where its agility and take-off and landing performance proved impressive. Occupying a niche between the C-130 and the C-



Farnborough Highlights
 (Clockwise from top left)
 The C295 growing sales;
 Steven Udvar-Hazy on an aircraft shopping spree;
 The A400M in an impressive display;
 Turkey's Peace Eagle;
 The Hawker Beechcraft AT-6 with bite;
 Sino-Pak fighter Thunder;
 Sweden's new-look Gripen.



are sitting on defence

17, the A400M is still very much a tactical transport, but has a cabin cross-section better suited to 21st Century military loads than that of the C-130, where the fuselage design dates back more than 50 years to a time when armies used Jeeps rather than Humvees and Bell 47s rather than Blackhawks!

Once certificated (expected in 2012) and in service, it is widely expected that the A400M will attract orders in the Middle East region.

With the growing emphasis on net centric warfare, command and control and surveillance aircraft are attracting a great deal of interest as air forces seek to modernise and to improve and enhance their capabilities in this vital area.

The 737 AEW&C is Boeing's offering in the airborne early warning and control marketplace, and combines a 737-700 airframe with a powerful Northrop Grumman multi-role electronically scanned array (MESA) radar, with a fixed 'top hat' antenna mounted above the fuselage. The aircraft shown at Farnborough was a Boeing 737-7ES for the Turkish Air Force, and these are usually referred to by their 'Peace Eagle' ('Baris Kartali') programme name.

The Turkish Peace Eagle contract was signed in November 2006 and Boeing modified the first aircraft at Seattle, where it made its first post-conversion flight on September 6 2007. This aircraft was subsequently displayed at the Dubai

Air Show in the United Arab Emirates in November 2007. The three remaining aircraft were converted to AEW & C standards by Turkish Aerospace Industries in Ankara.

Delivery of the first aircraft to the Turkish Air Force is now expected in 2011. The type is already in service in Australia, as the Wedgetail, and is one of the aircraft under consideration to meet UAE requirements.

Smaller scale

On a rather smaller scale, the venerable Britten-Norman Islander was also being promoted at Farnborough. The company Airborne Surveillance, associated with, but not owned by, Britten-Norman offers a paid-for surveillance service on a 'pay-by-the-hour' basis, using a BN-2T. This has been operating in Australia, but a second aircraft (the former Red Devils 'jump ship' G-ORED) was displayed in surveillance fit, in the company's colours, at Farnborough.

The company hopes to offer a surveillance-on-demand service to UK law enforcement agencies, operating under its own air operator's certificate and using its own aircrew. The company is also believed to be looking to the Middle East as a potential new market for its services.

Middle Eastern air forces are increasingly looking to strengthen and enhance their maritime patrol and

anti-submarine warfare (ASW) roles, and the EADS CASA C-295 anti-submarine warfare aircraft – unsuccessful contender to meet the UAE's maritime requirement, was on show at Farnborough. The aircraft on display was the first of two C-295s fitted out for the ASW role for the Chilean Navy.

The aircraft has a fully-integrated tactical mission suite with four operator stations, search radar, a magnetic anomaly detector boom, a sonobuoy dispenser system, as well as a forward-looking infrared (FLIR) systems electro-optical/infrared camera turret, and provision to carry torpedoes under-wing.

A rival ASW/patrol solution was displayed by ATR, in the shape of the second of two ATR-42-400MP Surveyor aircraft ordered by Nigeria. The Surveyor is already in service in Italy with the Guardia Costiera and with the Guardia di Finanza, and in Libya. It has radar, FLIR and electronic support measures (ESM) equipment, but lacks an attack capability.

There were also military rotorcraft debutantes at Farnborough, including AgustaWestland's AW159 Lynx Wildcat, the Bell UH-1Y and Sikorsky's MH-60R, and any or all of these could attract sales in the broader Arabian region.

Thus, while it may have superficially appeared to be a less than vintage Farnborough year, there was a great deal to interest regional customers.

Mubadala has achieved its goal of being a major force in aerospace. Alan Peaford met Homaïd Al Shemarri, who heads the company's aerospace business, to find where it goes next.

The Mubadala chalet at the Farnborough International Airshow had little more than a discrete sign showing its name – but the visitors' list read like a who's who in the aerospace industry. And not surprising either. Mubadala – the industrial investment arm of the Abu Dhabi government – has been steadily increasing its profile, and its reach, across various sectors in the aerospace industry.

That there is serious money behind the company is not surprising, but the passion and deep sense of purpose that lies at the heart of the company's investments, perhaps is.

Behind the success story is Homaïd Al Shemarri.

Shemarri breezes into the room where we have planned the interview. He is just a few minutes late but apologises profusely. Everybody who is anybody wants a few moments with this quietly unassuming man, whose eyes are almost alight with a passion as he outlines the strategy for Mubadala Aerospace.

"It's all about targeting sectors in the aerospace arena that are energy intensive, capital intensive and technology intensive," he said. "We looked at composite manufacturing; we looked at maintenance and repair of both commercial and military aircraft; we are looking at original equipment manufacturing. We are also looking at the training and the education around the industry. So, we have been working very diligently since 2006, developing this strategy and delivering on it.

"Today, if you look at what we have in the maintenance repair of a commercial aircraft, we have SR Technic, located in Europe, second largest aviation market in the world, and we have Abu Dhabi Aircraft Technologies (ADAT) in the Middle East, also the fastest growing aviation market in the world.

"You are looking at 20 per cent of the future orders for wide-bodies and narrow-bodies coming from the Middle East. And look at military MRO – we have some of the biggest operational military aircraft in the world."

Mubadala took a giant step into that arena, announcing at the show a joint venture between ADAT and Sikorsky to set up a MRO facility – called the Advanced Military Maintenance Repair and Overhaul Center (AMMROC) – which will employ more than 1,000 people in its first five years of operation, with staff based both in Abu Dhabi and on-site at UAE military bases.

Shemarri schools the future talent for Mubadala

It is education and the opportunity to create meaningful careers for UAE nationals that lies behind the Mubadala foray into aerospace.

"There are multiple initiatives we are doing right now around raising the awareness of the aerospace industry," Shemarri said. "There is a buzz about the career opportunities we have for UAE nationals; the way we encourage the youth to go into science and technology disciplines, rather than the other disciplines that don't benefit our industry.

Education programmes

"We are working very closely with local and federal government to create education programmes. A lot of people are interested in aerospace – there's a buzz about it. But the deficiency has been always that: 'I don't see a career. I am excited, I'm interested in aviation, I want to be on planes, but where am I going to work at the end of the day?' So it becomes a hobby. What we are trying to do is to create that pull, build the careers, build the future for the youth of UAE, and then work with the education system to raise the awareness. And we have been very successful with that."

Stratos, the composite manufacturing plant that will be building aerostructures for Airbus before the end of this year, is used as an example by Shemarri.

"Stratos is going to employ 600 people towards

2012. We are aiming to have 300 of them – 50 per cent – as UAE nationals. Our original target by the end of this year was to have 50 nationals as part of the training programme. By July, however, I had signed contract number 65. Now, 45 of them are UAE national females.

"Locating in Al Ain brings the work to the population instead of pulling the population to work in Abu Dhabi or migrating to Dubai."

Shemarri is already looking at the long-term future – and it is not just the university graduates he is focused on.

"We are going to capture the talent and the interest of the young people. Because a lot of studies indicate that kids are interested in science at seven to 10 years old, that's how far we need to go. Right now we need to be realistic; there is an immediate need. Going after the graduates, colleges and universities is the first step for our industry. Then, longer term, we go to high schools, go down to the junior, then to elementary; there are a lot of initiatives in Abu Dhabi getting people and kids excited."

And it's not just about kids; it's about the parents as well. "We are tackling the parents because they are the most influential drivers of the kids' decisions," said Shemarri. "We are trying to do all of that at the same time. It's a challenging task but it's a wonderful task to be challenged with."

Shemarri believes that Abu Dhabi – and Al Ain in particular – will develop into a true OEM



LEADERSHIP

Homaïd Al Shemarri:
fusing vision and passion.

location. “Our 31 per cent ownership of Piaggio has been a great learning curve for us and has enabled us to say that, in 2018, we are going to be building and integrating a full business aviation aircraft in Abu Dhabi.

“Again, if you and I are talking and you ask can I buy a plane in Abu Dhabi? – Well, not today. But definitely, when you look at what we are trying to do, building and manufacturing capabilities, building the service capabilities, building the engineering researching capabilities, then we will be all right to do that.”

Mubadala’s plan is to become an industry hub and it is doing this with the involvement of partners such as Goodrich and Honeywell.

“These deals are very important to us,” said Shemarri. “They signify the total solution, that Mubadala is trying to bring to this industry. We are trying to help airlines, as well as OEMs, to take a piece of equipment, help them to finance it, sell it to an airline and take over the planning of the maintenance, the location, the supply chain management of that piece of equipment and, once it has a failure, then we go and maintain it and bring it back to a serviceable shape.

Cater for our customer needs

“That is a great value proposition because we are helping our customers get the liquidity they need so they can focus that capability on their core business. We take the headache of all that management out of their heads and outsource it to us. That’s what we are trying to do. Build everything to cater for our customer needs.”

Mubadala is working with other great names like Boeing, Rolls-Royce, GE and with Airbus in the huge challenge of the aerostructure plant.

“Airbus has been impressed at how we have delivered. A lot of people did not believe that we could actually build something, produce it, and have capable people working that plant as quickly as we said we were going to do it. Today, the reality is proof of how credible Abu Dhabi is. Now Goodrich, Honeywell, Sikorsky all believe that Mubadala is the right partner and when we say we are going to do something, we deliver on it. Its been an amazing, fulfilling achievement on a personal level, that we went out there in the industry where a lot of people said: ‘Yeah you are good in MRO but you are not going to do it in manufacturing.’ Today we can stand very tall and say: ‘You know what, we are building composite parts in Abu Dhabi.’”



The wings of change create new prospects for Etihad and Gulf Air

The changes in attitude and approach to training for aerospace careers are nowhere more obvious than with Etihad, the UAE's national airline and Gulf Air, the Bahraini national carrier.

Etihad, like the other Gulf carriers, has been developing its own academy and training schools and has made huge investment into encouraging UAE nationals to look at the industry for a career rather than a job.

In September Etihad's largest-ever group of Emiratis graduated and included for the first time a female aerospace engineer. This followed an historic announcement weeks earlier by Manama-based Gulf Air that the first all-Bahraini group of female cabin crew had received their wings.

The women were the first group to graduate from a joint-initiative run by the airline and Bahrain's employment department, Tamkeen, to encourage more Bahrainis, particularly females, to join the national carrier in key customer-facing positions such as flight crew.

Tamkeen, in line with its goals to open new career opportunities for Bahrainis, has been actively supporting Gulf Air's efforts to open new doors in the civil aviation industry.

The initiative to qualify Bahraini female cabin crew is part of a larger effort, which has already seen Tamkeen supporting the training of aeronautical engineers and aviation pilots.

Gulf Air chief executive officer Samer Majali said: "The country has eight new ambassadors and the airline has eight new cabin crew. Cabin crew are the face of Gulf Air as they hold one of

the most important positions in the company that set the standards of service we offer our customers.

"The induction of Bahraini cabin crew underpins one of the key components of our strategy of providing passengers with warm and friendly traditional Arabian hospitality, on which Gulf Air's reputation is built. And who could be better at this than our national workforce, who intrinsically understand our core values and ethos?"

Recruitment drive

Gulf Air is the first airline in the GCC to come up with such a recruitment drive designed for nationals. It is part of a wider initiative the company has launched demonstrating its commitment to provide career opportunities to Bahrainis in co-operation with Tamkeen. This includes ongoing two-year on-the-job training for engineering graduates, recruitment and training of Bahrainis in Gulf Air's worldwide call centre programme, as well as training company employees within Tamkeen's career progression programme and providing training facilities to the aeronautics maintenance engineering programme, just to name a few.

For Etihad, bringing the first woman through to an engineering qualification is seen as a breakthrough. Speaking at the graduation ceremony at the Al Raha Beach Hotel in Abu Dhabi, James Hogan, Etihad's chief executive said: "It is a proud day for all of us at Etihad to see so many of our Emirati trainees graduate.

As well as the 38 cadet pilots, 19 graduate

managers and six engineer graduates from the UAE, an additional 26 graduating cadet pilots of other nationalities were recognised during the ceremony.

"It is vital for our airline to invest in training 'home grown' Emirati talent, ensuring they are ready and fully equipped to move into our staff ranks," Hogan said. "As the national airline of the United Arab Emirates, we are committed to having talented Emiratis, both men and women, working in all fields – not only in the UAE, but in our outstations across the Etihad network."

The cadet pilots, who have completed an 18-month training course, have now joined the airline as second officers.

The engineering graduates – each of whom has been awarded a Diploma of Aircraft Maintenance Engineering – commenced their training in December 2007 in the UAE and continued on to Brisbane, Australia, where they completed theory training at Aviation Australia.

It was from this group that Fatima Bafaraj became the first female Emirati to qualify as a trainee engineer with the airline.

She said: "It feels very special. I am very proud of my achievement. It has been a tough journey and I am relieved to be coming towards the end of my studies. I am looking forward to getting on with the practical side of the job.

"I never really dreamed of becoming an engineer; it was just something that kind of grew on me. My family has been very supportive and my fellow male students have not been too bad with me – they know I could beat them in an engineering competition!"

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EIAST satting pretty with digital mosaics

The Emirates Institution for Advanced Science and Technology (EIAST) has released a mosaic image of the UAE to celebrate the first anniversary of the launch of DubaiSat-1. It is also moving ahead with plans for DubaiSat-2 and DubaiSat-3.

The image is a collection of more than 40 scenes taken by DubaiSat-1 throughout the year. They have been integrated using advanced image processing and fusion techniques to create a spectacular mosaic of the UAE, as observed from space.

The mosaic shows more than 150 kilometres of the coastal area of the UAE from Umm Al Quwain up to Abu Dhabi and 70 kilometres of the inland areas, such as Al Madam and Al Lisali.

Ahmed Al Mansoori, director general, EIAST said: "The achievements by EIAST highlights the UAE's success in leveraging the advanced technology sector, and underscores the capabilities of young Emiratis to actively participate in new and advanced realms of technology."

"The success of DubaiSat-1 during the first operational year is testament to EIAST's ability to translate the strategic direction and overall development plans to drive the knowledge-based economy. We will continue to develop EIAST as an internationally-recognised institution and a national icon in science and innovation."

Strategic initiative

EIAST is a strategic initiative, funded by the UAE Government, and was launched to promote scientific innovation and advanced technology in the UAE and the MENA region.

It now has 60 staff and plans to launch DubaiSat-2 in the last quarter of 2012 or the first quarter of 2013, depending on the launch opportunities and the rocket launcher chosen.

By 2013 its new facilities, which will include bay/clean room as well as test equipment, should also be complete.

Plans for DubaiSat-3 are also under discussion. Al Mansoori said EIAST would start the programme before the completion of DubaiSat-2 to keep the momentum of its space programme going.

He added: "We have not yet completed the critical design review (CDR) phase of DubaiSat-2, but we hope to build one of the best satellites in its weight class in terms of capability and quality."

DubaiSat-2 will be slightly heavier than its predecessor at around 250kg. It will also be much larger, at nearly two metres high. EIAST is also aiming at much faster data acquisition and download timings, as well as better image quality and resolution.

"This is a 50-50 joint development between EIAST and Korean satellite manufacturer Satrec Initiative (SI), so the level of participation from our engineers on the project this time around is massive," said Al Mansoori. "We are also co-operating with JAXA from Japan on our propulsion sub-system."

EIAST plans to use DubaiSat-2 in much in the same way as DS-1, concentrating on environmental, disaster management and urban planning applications, with a priority for the UAE government and private organisations in the Emirates.



The UAE picture mosaic and, below, Ahmed Al Mansoori.



"We are also looking at commercialisation and will aim at selling a certain percentage of data to regional and international customers as the data capacity and downlinking on the satellite will be dramatically increased from that of DS-1," said Al Mansoori.

He also thinks valuable lessons have been learned from the DubaiSat-1 project. "The most important is that international co-operation in space is paramount to our advancement. Joint projects and partnerships are very important – without them it would be very difficult for a developing space nation such as the UAE to advance in this field."

Al Mansoori also confirmed discussions on a new space agency for the UAE are ongoing and he hopes to have some positive news in the near future.

"Having a federal space agency will certainly improve our credibility on the world stage. More importantly, it will encourage more young Emiratis to get involved in space policy, space travel, space research, and its commercialisation."

"A federal space agency is also a critical step in making the UAE self-sufficient in the space sector – in the next five years, we should be able to start building our own satellite right here."

The United Arab Emirates Air Force and Air Defence has been an early and enthusiastic adaptor of UAV technology and the UAE has mounted a sustained effort to establish indigenous design, development and production capabilities. ADCOM Systems is at the forefront of these efforts. Jon Lake reports.

The UAE's armed forces have operated the South African Denel Seeker fixed-wing UAV since the early 1990s and opened a UAV Research and Technology Centre in Abu Dhabi in 2004, with the Gulf Aircraft Maintenance Company (Gamco) providing some facilities and expertise.

The centre oversaw the introduction of two new rotary-wing UAVs – the Austrian Schiebel Camcopter S-100 (known locally as the Al Sber), and the Swedish Cybaero Apid 55 – as well as a common ground station developed in association with South Korea's Uconsystem.

The first Al Sber was delivered in October 2005 and 60 were ordered, with options on 20 more. The UAE has deployed the type to quietly support NATO operations in Afghanistan, according to the UK's chief of the air staff, Air Marshal Sir Stephen Dalton, speaking at the Dubai Air Chiefs Conference in November 2009.

The nascent UAV programme enjoyed heavyweight support, not least from Crown Prince General Sheikh Mohammed Bin Zayed Al-Nahyan, deputy supreme commander of the armed forces, who publicly stated: "UAVs are an integral part of any efficient combat force," highlighting their importance for homeland security, early-warning, surveillance, data gathering and targeting, and underlining their importance for a small wealthy UAE sandwiched between larger and militarily powerful neighbours.

Indigenous unmanned vehicle development in the UAE started even before the air force began testing the Seeker in 1992. That was the year that the Mussafah-based ADCOM Group established its advanced target system division.

Valuable export orders

Since then, ADCOM has developed a succession of highly successful unmanned target drones, winning valuable export orders and building the foundations for a family of operational UAVs.

The most successful product in ADCOM's range of targets is the SAT-400, a fully-programmable 85-kg drone with a 2.75 metre wingspan, used by the armed forces of the UAE and Canada. The drone has a flying body configuration, with an aft-mounted wing mounting endplate fins, and with a pusher propeller. The drone has a two-hour endurance, can reach speeds of up to 420km/h and can carry a range of payloads, including flares, smoke generators or radar reflectors/augmenters.

The turbine-powered Yabhon-HM is of broadly similar configuration to the SAT-400, but enjoys superior performance, reaching up to 550km/h,

In the Drone Zone

while the twin-turbine Yabhon-HMD is 20 per cent larger, has longer endurance than the HM (up to 72 minutes), can exceed 650km/h, and carries miss distance indicator equipment. The HMD is capable of low altitude, sea-skimming flight and of making simulated diving attacks, allowing it to replicate a wide range of threats, including tactical ballistic missile threats such as the 'Scud' surface-to-surface missile.

With its extensive experience of unmanned target drones, ADCOM has naturally turned its attention to the design and development of more advanced UAVs for operational roles, and has produced a staggering array of designs, some of which have been revealed at successive trades shows amid great ceremony, only to subsequently disappear. Others seem to have led to longer-term development programmes.

Confusingly, many of these use the same Yabhon name, with different designation suffixes.

At the Dubai air show in November 2005, for example, ADCOM unveiled an experimental medium-altitude, long-endurance (MALE) UAV called the Yabhon Excellency, with a 16 metre (52ft) wingspan and a 500-kg payload. The company announced that it was intending to fly a prototype in April 2006, though nothing further was heard of the programme. At the same event, ADCOM also revealed the Yabhon – VTOL, a

tactical extended endurance UAV with coaxial rotors, to be powered by a Rotax 912ULS engine. This was also expected to fly in 2006, and also disappeared.

ADCOM's more modest, less ambitious UAV projects seem to have made greater progress. The 3.28 metre wingspan Yabhon-H began life as a target drone, in broadly the same category as the SAT-400, but was soon adapted for reconnaissance use with the addition of a nose-mounted electro optical sensor turret.

New aerodynamic layout

Powered by a single piston engine driving a pusher propeller, the Yabhon-H has a new aerodynamic layout, with canard foreplanes and a high aspect-ratio double delta wing with highly efficient laminar flow airfoils optimized for long-range/extended endurance cruise. The airframe was built from fibre-epoxy material completely vacuum-bagged for maximum strength.

The Yabhon-H boasts an eight-hour endurance and excellent 'hands off' stability and good turbulence resistance, together with docile stalling characteristics. The aircraft is designed to take off using a simple launcher, and then to be recovered by parachute.

The Yabhon-M is a scaled up UAV using a broadly similar aerodynamic configuration, with



Ali Al Dhaheri, general designer and chief executive of ADCOM (inset), says the Smart Eye medium-altitude UAV will be a competitor to the Predator.

a 5.7 metre span wing, and able to carry a 30-kg payload, with thermal imagers, EO and IR sensors, or even a Laser Designator & Range Finder, as payload options.

The aircraft has a UHF and 2.4GHz line-of-sight (LOS) video/data link and is claimed to have a 12-hour endurance (30 hours according to some sources), and a maximum speed of 240 km/h. The vehicle still has an integral emergency recovery parachute system, but is primarily intended to take off and land on its own retractable tricycle landing gear. The aircraft is controlled via an ADCOM-developed integrated digital fly-by-wire flight control system, and features a laser terrain avoidance system.

The Yabhon-R could be considered as the third and largest member in a family of UAVs with the Yabhon-M and Yabhon-H. It shares the same basic configuration as the others but has a 6.56 metre span, a 50-kg payload, and a claimed 30-hour endurance. Like the Yabhon-M, the R has a retractable tricycle undercarriage, and is intended to be operated from prepared strips. Payloads could include a synthetic-aperture radar, and a commercial Ku-band satellite link.

Classed as a MALE UAV, the Yabhon-R is optimized for real-time day and night reconnaissance and surveillance, search-and-rescue, border surveillance and patrol and the

monitoring of remote areas. The Yabhon-R is built under licence in Malaysia by Unmanned Systems Technology (UST) Sdn Bhd, a subsidiary of Composite Technology Research Malaysia, as the Yabhon Aludra.

ADCOM's Advanced Targeting Systems (ATS) division has made great efforts to expand the scope of its activities beyond the mere production of unmanned vehicles, and has developed and marketed launcher systems (including a highly-portable pneumatic launcher) and UAV control systems.

Digital processing techniques

The ADCOM-3D flying control unit (FCU) makes use of the latest digital processing techniques and can provide monitoring, stabilisation and control of the UAV's heading, altitude and angular movements using a strap-down inertial measurement unit with GPS and three-axis magnetometer input, and with measurement of both static and dynamic pressure.

Flight data is recorded and the system provides comprehensive fault identification and an automatic navigation capability, and pre-programmed flight plans can be changed at any stage of the flight.

But ADCOM's core business remains the

development of UAV and target drone platforms. ADCOM moved away from the canard configuration used by the Yabhon-H, -M and -R, and embraced a more conventional layout for subsequent reconnaissance UAVs.

The piston-engined Yabhon RX-6 tactical UAV had a conventional fuselage and high aspect ratio six-metre (19.7ft) wing, and had a horizontal stabilizer carried on twin tailbooms. The aircraft had a glider-type single mainwheel mounted in the belly. The new configuration was adopted in order to give improved controllability at high altitude. A prototype first flew in September 2006 and formed the basis of a Yabhon RX-18 MALE derivative, which was said to be under development in 2005, with a 1.2-1.3 tonne MTOW and a 16 metre (later 18 metre) wingspan.

The currently-offered Yabhon RX is of similar configuration, but with a 9.68m wing and a 60-kg payload and a claimed endurance of 42 hours. Such endurance would require the aircraft to soar like a glider, with the engine shut down, and many doubt that this is feasible, let alone practical under operational conditions or with an operational task to fulfil.

A similar concept of operations underpins ADCOM's new Smart Eye high-altitude, long-endurance, or HALE, UAVs, which are intended to offer an alternative to UAVs like the Predator.

Iran President unveils 'ambassador of death'

Iran has been stepping up its capabilities with unmanned air systems (UAS) and, at the country's "defence industry day" celebrations, the country's president, Mahmoud Ahmadinejad, unveiled its first long-range bomber drone – a weapon he described as an "ambassador of death".

Ahmadinejad unveiled the new unmanned aerial vehicle (UAV) in front of an audience of military officials at a ceremony in Tehran in August and sent defence specialists in countries around the world scurrying to find information about the bomber and its capabilities.

The global unmanned vehicle industry was meeting in Denver, Colorado on the day that Ahmadinejad made his announcement and its name – Karar (which means 'striker' in Farsi) was on everybody's lips. Equally so was President Ahmadinejad's assertion that the UAV is a deterrent to "keep the enemy paralyzed in his bases".

Iranian Defence Minister Brigadier General Ahmad Vahidi told *Arabian Aerospace* that Karar has a flight radius of 1000km, adding that Iran has other unmanned aerial vehicles (UAVs) that can fly the same distance.

This suggests that the drone could reach Israeli borders if fired from the nearest Iranian border. It is well within reach of the Gulf States and Saudi Arabia.

Vahidi said: "The Karar bomber drone has numerous capabilities, mostly having a long operational radius. It is jet-propelled and is able to work at high altitude."

It is understood the UAV will have a payload potential to carry two 250-pound bombs, or a precision bomb of 500 pounds.

At the Defence Industry Day event President Ahmadinejad said: "This jet is a messenger of honour and human generosity and a saviour of mankind, before being a messenger of death for enemies of mankind.

"The key message is friendship," he added. "We must make efforts to render all the enemy's weapons useless with our defence potential."

Sources in the region say that Iran's defence industries have made significant progress in the last year, launching numerous domestically-built armaments, including aerial and sea-borne military vehicles such as submarines, combat frigates and various types of missiles.

The experts at the Association for Unmanned Vehicle



Systems International (AUVSI) conference determined that the Karar is largely based on the South African Skua target drone made by Denel. Analysts say the Iranians have changed the location of the wing and engine but the basic design is of the target drone.

Images at the event showed the drone carrying a 226.8kg (500lb) bomb. In another image it was shown armed with four Iranian-made Kosar anti-ship missiles, a copy of a Chinese missile. It is also said to be capable of carrying two 250lb bombs. They believe the UAV is powered by a Tulu jet engine – probably a copy of an old TRI-60 French jet engine.

In the images shown on Iranian television, there is no sign of a satellite communications system and, therefore, the aircraft would not be capable of real-time intelligence missions. Iranian TV also reported the drone has a maximum speed of 486kts (900 km/h). It is equipped with a recovery chute. The South African Skua is known to be able to be launched and recovered up to 20 times. The Skua also only has line-of-sight communications capabilities.

Vahidi said intelligence was a key factor in the country's UAV programme of new UAVs. "They can not only record and transmit images, but possess operational capabilities as well," he said.

Iran has also test-fired a new surface-to-surface missile called the Qiam – which means "rising" in Farsi.

In July the Deputy Lieutenant Commander of Army's Air Force for Operations, General Majid Pirhadi, told *Arabian Aerospace* that UAVs would cover all the country's border regions in the near future.

"We are seeking to equip all the country's central air bases with long-range UAVs but, for now, equipping bases along borders sets a priority," Pirhadi said.

Arabian Aerospace reported in February that Iran had inaugurated the production line of two home-made UAVs with bombing and reconnaissance capabilities. The two hi-tech drones named Ra'd (thunder) and Nazir (harbinger) are both capable of conducting long-range reconnaissance, patrolling, assault and bombing missions with the capability to destroy specified targets with high pinpoint precision.

Iran's president, Mahmoud Ahmadinejad, unveils the Karar in Tehran.



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Unmanned aerial vehicles (UAVs), also commonly referred to as drones, are becoming a significant part of most military repertoires.

At least 32 countries are known to be developing UAVs, with the US being the operator of the largest fleet; the US military's inventory of unmanned aircraft has increased from 50 to 7,000 in the last ten years.

These UAVs provide vital missions for military operations and, given the volatile nature of security in the Middle East, they are playing an integral role within the military forces. This is particularly the case in Iraq, Afghanistan and Pakistan, where drones are commonly used for intelligence, surveillance and reconnaissance (ISR) missions in support of counter-insurgency operations on the ground.

These UAVs are small compared to an airliner and most are designed by nature to be undetectable; they don't always show up on radar and are not fitted with traffic collision avoidance systems (TCAS). All in all, they are the commercial pilots' worst nightmare; a pilotless aircraft that his instruments cannot detect and which he can hardly see, if he's looking out of the window to see one in the first place.

Prime position

The Middle East and the GCC in particular have a vibrant aviation industry with some of the fastest growing airlines in the world. The Middle East is in prime position to both serve the East and the West, as well as attracting air travellers to the region for business and for pleasure.

Furthermore, Al Maktoum International Airport, currently still in construction in the Jebel Ali area of Dubai, opened for cargo carriers at the end of June 2010, with passenger services expected to start in spring 2011. When complete, the airport is projected to have an annual cargo capacity of 12 million tons and a passenger capacity of more than 120 million.

Studies by the International Air Transport Association have found that Middle Eastern air traffic has grown 18 per cent since the summer of 2009.

INEGMA's Laura Dunn and non-resident scholar and research associate Ayat Toufeeq, look at the risk of unmanned aerial systems operating in our airspace.

'Invisible killers' that could bring down an airliner

The indigenous UAV industry in the Middle East has also been growing in parallel to the commercial aviation industry. Finmeccanica announced a joint venture with Abu Dhabi Autonomous System Investments (ADASI) for developing medium altitude UAVs at the Paris Air Show last year. Turkish Aerospace Industries (TAI) recently revealed its own locally designed and manufactured drone, the Anka, at the Farnborough Airshow this year; which is expected to be fully operation by the end of 2012.

With such heavy commercial traffic and military operation of UAVs in the region, there is cause for concern raised by local officials. This has been highlighted by a near miss incident where an airliner departing Baghdad airport was required to take measures to avoid a UAV as well as other rumoured incidents. A mid-air collision between these aircraft would be a major aviation accident, and could not only cause significant civilian loss of life but, given sensitivities within the region, could also inflame societies and breed speculation.

The Iran Air incident springs to mind, where a US Navy guided missile mistakenly shot down a

civilian airliner carrying 290 people in 1988, causing much controversy and souring relationships. It has also been reported by the US Customs and Border Protection agency that UAVs, which the agency uses for border surveillance, have an accident rate that is more than seven times greater than that of manned aircraft.

Generally speaking, it is also important to bear in mind that the relatively low cost of developing UAVs, as opposed to manned aircraft, has led to excessive availability flooding international airspace, and not all of these vehicles are equipped with sufficient safety and detection capabilities. Additionally strategic UAVs, designed for longer missions, are growing larger in size – some reaching the wingspan of a commercial passenger jet – increasing the potential lethality of a collision.

UAVs and commercial aviation sharing airspace poses many issues for airline pilots. Drones involved in surveillance operate at altitudes of around 20,000ft and above. Airliners cruise at around 30,000ft and will, therefore, encounter these UAVs



during climb and descent; periods of increased workload for the pilots. This fact becomes a human factors issue. During these periods the ability to process information is reduced and judgement and decision-making are also affected. Statistics from the last 50 years of commercial aviation show that 92 per cent of aircraft accidents take place at these strenuous times.

Today's commercial aircraft have highly developed flight management systems and automation. Although commercial airline pilots do have 'line of sight' observation obligations, during the climb and descent the pilots will be engaged in configuring the flight management systems. Pilots' attention will be focused on these systems and their heads will be down looking at the displays, not looking out of the window. Given the fact that the UAVs don't always show up on radar and don't have TCAS, the pilots are unlikely to spot them, let alone avoid them.

Pre-set flight paths

Some UAVs have pre-set flight paths and others are operated remotely with limited visual command; it is likely that the ground operator would have forward or upwards facing cameras capable of only seeing oncoming air traffic, and even this is limited by weather conditions. Presently, no technology has been developed that can fully substitute for human spatial awareness, and for this reason, the responsibility is, currently, really on the pilot to avoid the UAV.

The use of UAVs and associated collision hazards in the Middle East may be growing as the region becomes more commercially busy and border and sea surveillance increases.

How can the risk of collision be avoided? Firstly, it would be beneficial for both sides to be aware of the risk, particularly commercial aviation operators. The aviation industry can start taking measures to deal with this issue; to begin with by recognizing and identifying the risk.

Pilot workload evaluations can assess how the pilots are dealing with this scenario during a simulation. This can lead to procedural changes and training interventions to improve pilots' abilities to deal with this emerging problem.

Most military missions are secret for obvious reasons; however a notice to airlines that drones may be operating in certain commercial airspace would be helpful, although this may not always be possible in cases of covert operations.

It may also be beneficial, though somewhat disruptive, for the military to book blocks of 'segregated' airspace for drones, controlling and restricting access by civilian aircraft to this space.

Another option would be to gather and transmit cooperative air traffic information directly to the UAV operators. This information can be obtained either from military ground-based radars, which can detect all airborne vehicles, or from air traffic control from cooperative airports in the vicinity of the UAV's flight path.

Integrate accurate TCAS capabilities

'Sense and avoid' technologies are currently being developed by militaries and defence contractors in order to integrate accurate TCAS capabilities into UAVS without compromising their payloads.

In July 2010, the US Air Force Research Laboratory (AFRL) announced that algorithms are being designed to allow UAVs to integrate with manned air traffic and calculate 'intended' flight paths of other vehicles.

They would allow the UAVs to automatically process air traffic information and make 'accurate and reliable' assessments on whether or not a collision is possible.

Overall, developing collision avoidance techniques and technologies is becoming increasingly important, especially for the military as it is projected that in the near future the number of UAVs available will far outnumber the number of trained operators qualified to pilot them.

Additionally, it is also expected that in the foreseeable future unmanned aircraft will be increasingly utilized for commercial cargo transport, crowding international airspace even further. It is therefore imperative that, in addition to creating and spreading awareness, technological research and development currently focuses on creating collision avoidance capabilities that may evade possible major catastrophes in the future.

UAVs key role in protecting pipelines

Unmanned Aerial Systems (UAS) could soon be regularly monitoring pipelines and the first steps will happen in Africa or the Middle East. But, according to the American engineers who have developed the technology, it won't happen in their own back yard for some time to come.

"The FAA is not allowing us to fly in national airspace here in the US but the technology is more than capable of doing the work and doing it much better than any manned system by a long ways," said Brian Whiteside, EVP for Evergreen Unmanned Systems.

Oregon-based Evergreen Aviation's broad portfolio now includes commercial UAS operations, marking the first flights not under military or government control. They're eager to serve the 100,000 miles of pipeline built each year to bring natural gas, crude oil and a medley of petroleum and hydrocarbon products around the world. Less than five per cent of those pipelines are in the Middle East, but Whiteside sees great potential here. "We would certainly love to work with some of the companies over there in Iraq or Saudi Arabia, but we haven't had an opportunity to do it." What's needed, he added, is "figuring out who's interested, making contact and connecting the dots".

Stigma is an obstacle, Whiteside notes, with images of Predator drones and Hellfire missiles strong in many minds. But the technology is ready to go. "We do ice flow monitoring for the petroleum industry up in the arctic," he said. "If we wanted to, really, we could go fly anywhere in Africa. There aren't a lot of rules. Over there, it's making sure we get the contracts and build it from a business standpoint."

Equipment attached to manned aircraft also



Evergreen systems packed to go.

attaches to UAS, such as radio transceivers, which read pressure measurements from sensors along the pipeline. "One of the reasons people want to use UAS to patrol pipelines is you can fly over the pipeline and map it out and get a really good resolution and coordinates in great detail," Whiteside said. Comparing that data against live measurements on each flight reveals potential dangers over, under or around the pipelines, which are often underground. "Automatically, now, it can tell you if there's a change in what you previously knew, like if somebody's building a house or if there's a landslide. They've got to make sure nobody is digging or preparing to dig along a pipeline."

"Also, if you've got a security manager or a safety manager, he could be sitting in his home and give a real-time report. In Iraq, or Afghanistan, where there's a threat of getting shot at, this technology is great because you don't risk any loss of human life."

No specific UAS is best for pipeline monitoring, Whiteside said. "We're not really pushing the system. We're pushing the capability."

JEFFREY DECKER

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Airlines from the region are setting the pace with their implementation of new in-flight entertainment (IFE) and connectivity technologies.

Brendan Gallagher reports from the APEX/Aircraft Interiors show in Long Beach, California.



Middle East carriers are stars of the screen

Some people take industry awards with a big pinch of salt, seeing them as little more than popularity contests. But the year's biggest IFE and connectivity event, held in September by the Airline Passenger Experience Association (APEX, formerly WAEA) and Reed Exhibitions, was the scene of an accolade that could signal an important change in the way the IFE system suppliers do business.

The winner was Etihad Airways and the Abu Dhabi-headquartered carrier wasn't the only Middle Eastern star at the show.

Qatar Airways was hailed by IFE system manufacturer Thales for its energetic encouragement of the development of new passenger-pleasing capabilities. Connectivity provider OnAir revealed details of the world's largest Airbus A380 passenger communications programme, by Emirates of Dubai. And the supplier of a potentially revolutionary new IFE system talked about the start of installations with launch customer Royal Jordanian Airlines. Etihad took the 'Best Single Achievement in IFE' honour for its new E-BOX content package, which began to enter service across the fleet just over 12 months ago.

With its elegant treatment of Arabic in parallel with English, exceptional ease of navigation and array of novel features, it was a worthy winner on the grounds of aesthetics and user-friendliness



Etihad's Albert de Wet receives the 'best single achievement in IFE' award from industry sweetheart, Mary "Runway Girl" Kirby.

alone. But, ultimately, it was something under the skin that swayed the judges – the ease and flexibility with which the graphical user interface can be modified to incorporate new functions, accommodate the needs of different passenger demographics, and discreetly manage system outages.

The airlines have traditionally depended completely on their IFE system providers for any significant change to the graphical user interface (GUI) – the cost is significant and the lead times can run into months. "We developed E-BOX to reflect the capabilities of the Panasonic eX2 and Thales i-5000 systems on our aircraft," said Etihad IFE manager Albert de Wet. "We wanted a solution that would be easy for passengers to use and that would help our cabin staff to give good service. But we also wanted one that our IFE department could modify without having to go back to the manufacturer."

The result, according to de Wet, is a GUI that is uniquely open to manipulation by an airline IT team using industry-standard software tools. "We can readily change the labelling of buttons, and if a function is removed or suspended, the neighbouring buttons expand to fill the gap," he said. "There's even a facility that allows the cabin crew to isolate and disable a failed function in-flight and provide a message informing passengers that

Continued
on Page 110

CONTINUED FROM PAGE 109

it's no longer available. These things are either brand-new or used to take months and months to implement."

Etihaad's achievement is to have persuaded the two top IFE system suppliers to start leaving behind an industry-standard way of working that has long been resented by the airlines, with the least change to the GUI usually requiring a full software release. "There's nothing proprietary about what we have done," said de Wet. "We just encouraged the system manufacturers to do the maximum possible to meet our requirement for increased flexibility."

Qatar Airways is set in 2012 to be the launch user of the latest version of Thales' TopSeries, which will feature a passenger control unit (PCU) that looks like an iPhone on a wire, and for the TopConnect integration of Inmarsat SwiftBroadband satellite connectivity with TopSeries. "This is a very substantial evolution," commented Alan Pellegrini, the manufacturer's managing director for IFE and communications. "And Qatar has been a real forcing function in its development, very forward-looking."

Due to be commercially available for existing aircraft types from the second half of 2012 and for the Airbus A350 from 2013, the new TopSeries is

expected to be 20-30 per cent lighter than today's system and to draw around 20 per cent less power. Its key elements are the Gen 4 screen with up to 256Gb of local storage, a new solid-state server and the touch passenger media unit (TouchPMU), all linked by 1Gb ethernet.

Capable of running Google App Store open applications on the Android operating system, the iPhone-a-like TouchPMU will render today's PCUs instantly obsolete when it debuts on a Qatar Airways Boeing 787 a couple of years from now. As well as providing touch-screen control of content on the in-seat monitor, it will allow the passenger to run a secondary application – moving-map, food ordering, a game, seat-to-seat chat – at the same time on its own smaller screen.

One of the strengths of the Gen 4 seatback screen is the fact that its shroud is now the location for the various ports that are scattered randomly and awkwardly in earlier systems. On the example on show in Long Beach the neat row of ports along the lower edge included a barcode reader, the key to a capability that could make a big difference to the passenger experience.

Thales is proposing to its airline customers that they give passengers the ability to indicate their preferences in IFE, food and other amenities at the same time as they book their tickets online.

The information captured would be incorporated into the boarding pass printed by the passenger or sent to his mobile phone. On taking his seat, he would hold the barcode to the reader, which would lodge the information with the cabin network.

Pellegrini explained: "The system would then automatically present his preferred categories of entertainment, for instance, and inform the cabin crew of his food preferences. It could be a powerful way of personalising the passenger experience." Earlier this year Emirates announced its selection of Geneva-based OnAir to provide mobile phone and internet services on its A380s. The airline switched to OnAir when incumbent provider AeroMobile – which retains the contract for the rest of the fleet – ran into problems with line-fit offerability on the Airbus double-decker. Emirates plans to introduce the WiFi-based internet OnAir service on its existing A380 fleet by end-year, with mobile internet GSM/GPRS capability to follow from September 2011.

The Emirates A380 installations will be a mix of retrofits on in-service aircraft and, from June 2012, line fits on new-builds. Emirates' in-service A380s – the airline has about a dozen in operation – already have a basic level of provision for the

Blazing saddles! It's vertical seats

Experts at the Californian Aircraft Interiors event in Long Beach say design has changed totally from two decades ago and predict travellers will see more radical changes in the next two as well.

Altitude Aerospace Interiors head of commercial airlines, Baden Smith, said: "The evolution of on-board products has transformed greatly over time, with today's business class product far exceeding what first class was just 20 years ago."

Airbus believes that airframers, airlines and lavatory and seat makers need to take into account the demographic changes of passengers, including the increasing overweight, the growing elderly population and the gender balance – with 50 per cent of travellers now being female as opposed to 10 per cent in 1980.

And, of course, there are more and more people travelling by air, so cutting costs is always a focus.

At the show, seats were high on the agenda when it came to cutting costs, with much buzz going around the global media for one Italian company that has designed a new kind of seat to certainly raise a few eyebrows.

Design firm Aviointeriors Group has come up with a 'standing seat' concept aimed at filling the aircraft with more passengers on to budget flights.

The new seat, named the 'SkyRider', is inspired by saddles used by cowboys.

Passengers sit on the 'saddle' at an angle, with their weight taken on by their legs. It allows seats to be overlapped. It offers passengers 23 inches of legroom between them and the seat in front, which is seven inches less than the current average seat pitch of around 30 inches.

The new seat design promises to attract plenty of attention from airlines looking to increase the number



of seats in the economy class sections of planes, and passengers would pay less to sit in an area of the cabin installed with the seats.

Dominique Menoud, director general of Aviointeriors Group said: "We feel extremely confident that this concept will have great appeal to airlines for economic purposes."

"For flight lengths from one to possibly up to three hours, this would be comfortable seating. The seat is like a saddle. Cowboys ride eight hours on their horses during the day and still feel comfortable in the saddle. It's intended as a new basic class seat."

Whether the seats will get the green light is another question. In July this year, Ryanair's Michael O'Leary said his airline would offer vertical seats for as little as £5 each way. O'Leary said he would remove the back ten rows of seats from 250 planes and replace them with 15 rows of so-called 'vertical seating'.

But the latest idea of such seats has already been dismissed by safety officials of the European Aviation Safety Agency, in Cologne, Germany. A representative said: "These plans are highly unlikely to meet stringent safety approval. To our knowledge, no airlines or other operators have made an application for stand-up seats."

Gaetano Perugini, Aviointeriors' director of research and development, who created the seat, said at no point was the company suggesting passengers' stand. "Even though the distance between seats is extremely narrow, we are talking about seats, not about having passengers simply standing on the floor." He added: "You are sitting on a special seat, but it is a seat."

Another new product launched at the show was an ultra lightweight ducting used in aircraft environmental systems, which is also featured on the Boeing 787 and the Learjet 85. First-time exhibitor Arrowhead has already clinched a deal with China's Comac to supply the new lightweight ducting for the new 150-170-seat C919.

As ever, galley companies are keen to design lightweight items, too, and the interiors shows are great launching pads for products as proven by Norduyn. After winning the Crystal Cabin Award for its Quantum lightweight trolley, launched in Hamburg, Germany, earlier this year, it has since sealed a deal with LSG Sky Chefs and produced 1,500 trolleys for its partner and main customer.

"The trolley market is 840,000 strong, with 147,000 added each year," said Patrick Phillips, director of business development. "Using our proprietary composite technology contributes to a 10-year design life verses eight years for traditional aluminium trolleys, while dry ice consumption is up to four times less."

OnAir hardware. “We’re now talking about a higher level of provision for the 70-plus aircraft still to be delivered,” said OnAir chief executive Ian Dawkins. “This should be implemented from early next year to reduce the downtime for the retrofits that will take place between now and 2012.”

Emirates has proved to be a catalyst for another aspect of the OnAir business. “We’re talking with them and other airlines about how best to keep the service continuously available to their customers,” said Dawkins. “From the end of this year we plan to use a dedicated area of the global command centre operated by our co-owner, SITA, to monitor the fleet of OnAir-equipped aircraft – we’ll be able at all times to check that the system on each aircraft is connected and working. We’re aiming to emulate the 24x7 support that the big IFE system providers offer to their airline customers.”

Launch customer Royal Jordanian Airlines is engaged in a high-speed campaign to get the new SiT seat-centric IFE system from Zodiac Aerospace installed in its four Airbus A340-200s. Work on the first installation was scheduled to begin as *Arabian Aerospace* was going to press and the aircraft was due to return to service at the beginning of November.

“The rest of the installations should be done by mid-December,” said Eric Cornilleau, director of the Zodiac Aerospace business unit responsible for the system’s development. “Conventional audio/video-on-demand (AVOD) systems typically take a month to retrofit – SiT’s simplified architecture enables us to move much faster.”

The secret of SiT is the way it puts all of the available content into every seat, storing it right under the passenger’s fingertips in the smart display unit (SDU). Capable of being mounted in the seatback or on a fold-out arm, the SDU is essentially a stand-alone PC with a high-resolution 10in screen, a 1GHz processor, 1Gb of RAM and a 250Gb hard drive – enough for 85 typical films.

For the Royal Jordanian aircraft, the system comes ready-installed in new Sicma economy seats and will be retrofitted into the existing Sogerma seats in business class. “We can supply SiT pre-installed in seats from Zodiac Aerospace companies like Sicma and Weber or retrofit it into seats from any of the other leading suppliers,” noted Cornilleau.

Entry into service with Royal Jordanian will be supported by a team from Zodiac Services Dubai. “We plan to have our people aboard the first half-dozen flights of each installation,” said

Cornilleau. “We’re talking to a number of other airlines which are waiting to see how the first entry into service goes – there’s a particularly high level of interest in the Middle East.”

When it came to new connectivity options, Ka-band satellite was the biggest talking point at Long Beach. But global availability won’t be on offer until 2014-15 at the earliest, and until then L-band and, to a lesser extent, Ku-band will rule the roost. On the eve of the show it was learned that L-band incumbents Inmarsat and Iridium would soon be joined by Middle Eastern mobile satellite operator Thuraya.

According to a source close to the project, Thuraya plans soon to unveil an offering that will be directly competitive with the aeronautical services currently supported by Inmarsat.

If Thuraya’s present maximum data rate can be delivered in the air, the nascent offering would stack up well against SwiftBroadband and would outgun KiteLine World.

For years Emirates and its Panasonic-based ICE in-flight entertainment offering set the standard for the international air transport industry. If the latest APEX/Aircraft Interiors show is anything to go by, the Dubai carrier has just acquired some serious regional rivals for the title of global IFE trendsetter.

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This CFM56-3C on a Boeing 737 is being prepared for an on-wing core upgrade.

New lease of life for engines helps control costs

The engine is the single most expensive element of an aircraft.

Geoff Thomas looks at how ongoing costs can be contained.

It may sound obvious, but one of the ways that successful airlines around the world have been weathering the global financial storm is through expediently trimming their costs. Many shrewd airline financial directors have been looking at innovative ways of maintaining service quality and reliability while reducing the amount of capital tied-up in spares – including engines.

Based in Shannon, Ireland, Engine Lease Finance Corporation (ELF) is the world's leading independent spare engine financing and leasing company and – according to its UK-based senior VP sales and marketing for Europe, the Middle East, India and Africa, Julian Jordan – the Middle East is growing in importance for ELF as the region's airlines endeavour to keep their costs in check.

He explains that while airlines need to have ready access to spare engines to prevent unforeseen 'aircraft on ground' (AOG) situations, with today's high reliability levels it no longer makes financial sense to buy spares and then keep them in a maintenance facility 'just in case'. New engines cost from around \$10-million each – a considerable sum to have tied-up and sitting around in a maintenance shop.

According to Jordan, some forward-looking airlines have been selling their spare engines to ELF and then leasing them back, thus freeing-up capital for other purposes and improving cash-flow. Airlines have also found that lease deals mean that they no longer have to worry about the future value of engines (residual value), which can fall over the life of an engine/airframe combination.

"With our lease deals," said Jordan, "our airline clients are encouraged to use our leased engines as if they own them. Engines usually represent a high proportion of the value of an aircraft/engine combination and we always calculate our lease deals on the basis of thrust rating, operating environment (including average sector length) and the reliability history of each engine type. We often know more about a particular engine type than the potential operator, so we're able to help our clients to make their final airframe/engine choice.

"And, if circumstance means that one of 'our' airlines has a short-term AOG problem, we always try to help as unscheduled engine removals in a small fleet can be devastating."

For seven consecutive years, ELF has earned the title of Global Engine Leasing Company at the annual awards organised by the Institute of Transport Management – an accolade resulting from an extensive survey among the institute's members.

Two decades ago ELF began operations with a single Pratt & Whitney JT9D-7J for the ubiquitous Boeing 747 jumbo jet – and the lessor subsequently wrote 12 engine lease deals in its first year. It now has around 200 engines – worth more than US\$1.6bn – the majority of which are modern 'stage 3' power-plants from OEMs like CFM, IAE, P&W, Rolls-Royce and GE. Most of the engines are for today's narrow-body fleets and there are no turboprops.

Owned by BTMU Capital Corporation of Boston, USA, ELF is a wholly-owned subsidiary of The Bank of Tokyo Mitsubishi UFJ, one of the world's largest financial institutions. As well as some of the world's most established airlines, its client base includes engine and airframe overhaul service providers, aircraft leasing companies and even OEMs.

The company is independent of any engine OEM, enabling it to provide spare engine support either from its own portfolio – or to source new or used engines.

ELF's activities also extend to asset management and engine marketing. The former includes lease placement and management for other engine owners; maximisation of assets; engine package syndication; technical consulting; sales representation; and venture partner portfolio management. In the field of engine marketing, ELF can call on its global connections and deep market knowledge to facilitate trading, buying and selling. With around 40 employees worldwide, in addition to its Shannon, Ireland, HQ, ELF has personnel based in Massachusetts and Oklahoma, USA, Dublin, the UK, Spain, Singapore and Hong Kong.



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Forget 'When Harry met Sally'. This is Airline Meets Airport and Alan Peaford was in Vancouver to spot the perfect match.

Why many potential suitors find Canada dry

For anyone walking into the World Route Development Forum for the very first time, it must feel a little like having gatecrashed a speed-dating event.

Hundreds of desks are spread around two large halls and behind them sit the route planners and airline managers.

For 15-minute slots, airports then "perform" on a one-to-one basis, trying to persuade the carrier that their airport or city is the place to go to.

These days, tourist boards and governments also pitch, showing just what an impact a new route can add to the economy.

In September it was Vancouver's turn to host the annual event, which attracted almost 3,000 delegates representing an incredible 250 airlines.

In 2012 it will be Abu Dhabi's chance to host, following Berlin next year.

All of the major airlines were there, with Emirates having probably the largest pavilion as airports virtually queued to get in to see the company.

Ironically, one nation keeping well away was the host country, Canada – not because airports like Vancouver and Toronto would not welcome airlines such as Qatar and Emirates, but because their government won't let them.

The Canada-UAE bilateral, which was last expanded in June 2003, allows just three weekly flights each from Dubai and Abu Dhabi. Transport Canada has turned down multiple requests to give UAE carriers more rights, claiming the current rights are sufficient to meet the demand of travellers whose origin or destination is either Canada or the UAE.

The impact is not just on passenger traffic. The bilaterals

combine the passenger and cargo flights, so if Etihad Crystal Cargo, for example, was to fly a cargo flight into Canada, a passenger service would be suspended.

This is not something that impresses Emirates senior vice president of cargo Ran Menen. He used the Air Cargo Conference, which runs alongside the Routes event, to call on Canada's government to look again, describing it as "pennywise pound foolish".

Emirates is now operating Airbus A380s on the Dubai-Toronto flights with load factors exceeding 90 per cent.

Menen said: "Protecting

a few dollars for a national carrier makes no sense when you have billions of dollars in opportunities with commerce.

"Some countries tend to protect the national carrier and miss out on greater opportunities – whether it is tourism or cargo."

According to Air Transport Intelligence, Qatar Airways is also interested in launching a service to Toronto but has said it will not open the route unless it can serve the market daily. The current Canada-Qatar bilateral only allows two-weekly frequencies.

One airline that did make some headway was Ethiopian Airlines, which is planning to launch services to Toronto next year, and is evaluating several potential new destinations in the USA.

Ethiopian chief executive Girma Wake, who used Routes to announce his retirement from the industry, said the Addis Ababa-Toronto route would be launched using new Boeing 777-200Lrs.

Washington is currently Ethiopian's only North American destination. "We're looking at other points in the US but haven't finalised the study," said Wake, adding the study includes New York, which the carrier served several years ago, Atlanta and Houston.

Ethiopian named chief operating officer Tewolde Gebremariam as its new chief executive to succeed Wake at the beginning of next year.

Qatar Airways said at Routes that it was continuing to investigate new destinations in the Americas following its successful launch of service to Sao Paulo and Buenos Aires earlier this year.

According to reports from Qatar, about two thirds of the country's passengers on the route are heading to or from Brazil but the carrier has been able to keep the Sao Paulo-Buenos Aires leg full as it has pick-up rights between Brazil and Argentina.

With much development underway in the MENA region, it was no surprise that a number of the leading airports were present, including Abu Dhabi Airports Company (ADAC), Queen Alia Airport from Jordan and Egyptian Airports.

"This is an important event for us," said Mohammed El Sioufi, head of commercial development sector for Egyptian Airports. "We get the chance to meet so many airlines which have an interest in coming to Egypt for tourism or business."

Egyptian Airports used Routes to unveil details of the master plan for an expansion of Sharm el Sheikh.

"We are planning to add a ten million passenger terminal and a cargo facility," Sioufi said.

Egypt believes there are more opportunities for leisure-based charter flights to use belly cargo capacity to take fresh produce from the rapidly-expanding Egyptian agricultural business.

"This has been very well received," Sioufi said.

Ran Menen: "Protecting a few dollars for a national carrier makes no sense when you have billions of dollars in opportunities with commerce."



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Yves Rossy outperforms most single-engine piston aircraft thanks to the jet engine strapped to his back.

Is it a bird...is it a plane... no it's jetpack man

Jeffrey Decker
looks at the latest idea for an aviation extreme sport and finds no shortage of interest from Arab enthusiasts.

Soaring solo with a jetpack is flying out of our dreams and into reality – but not as quickly as the world would like.

The first Martin Jetpacks may be delivered by the end of this year, said company founder Glenn Martin, and interest is already strong in the Middle East. “We have two or three individuals over there who are quite interested in purchasing serial number 001,” he said. “Whoever can turn up with the most money can get it.”

The jetpack’s 200hp (150kW) Martin V4 ducted fan was developed to provide 600lb of thrust (2.7kN) to twin blades of the torque-neutral fan system, which draw petrol from a 140litre tank over a potential range of 50km. Test flights have climbed to 10 meters, surpassing the earlier limit of three meters on its way to a 2,440m service ceiling.

Altitude restrictions will ease once an airframe reaches 100 flight hours, Martin said, but that limit hasn’t stopped 1,500 people from saying they want to buy one. An unnamed aerospace company is the new 51 per cent owner of Martin Jetpacks. “Our joint venture partner wants to keep the details of that quiet until it’s gone through all the appropriate approvals, patenting, branding and things in their country,” Martin said.

Multiple configurations are possible under plans for 500 units each year, he added, with the first deliveries for search and rescue. After two weeks of training, each \$100,000 unit can fly away at 87kt.

Yves Rossy attains speeds of

130kt as Jet-Man, strapped under a collapsible wing and propelled by Jetcat engines designed for toy airplanes. His prototype is years away from commercial production, he said. “I would really like to share my passion with my friends and others skydivers. To fly with other ‘Jet-Men’ all together is my aim. It will be fun!”

Fun is the idea, the Swiss airline pilot confirmed, not transportation. “It will probably become an extreme sport,” he predicted, and only skilled skydivers will be qualified. The trick of using one’s own body as control surfaces can be learned in a few weeks, he said. Rossy starts each flight by leaping from an airplane and landing with a parachute.

A catapult or any high-speed boost could allow ground take-off, he said.

He’s already flown across the English Channel in nine minutes and plans another attempt at winning the Webtel.mobi Intercontinental Challenge by flying from Morocco to Spain. “I’ve never thought before to fly over a desert, but it could be great! Any suggestions?”

Contorting your body can be tiring but is especially rough

on Visa Parviainen, “BirdMan” from Finland, who uses a wing suit and small jets on his boots to achieve level flight, and even to climb. For level flight, he said: “The best recorded result was 1meter/second for 30 seconds.”

Parviainen usually launches from a hot-air balloon but has started jumping from piston aircraft. “Our next target is to fly together with the plane I exit from,” he said.



Glenn Martin: His jetpack number one is on offer.

JONES IS NEW AL BATEEN GM

The new general manager of Al Bateen executive airport in Abu Dhabi has been named as Steve Jones. He is currently managing director of London Oxford Airport. He will take up his new position on November 17. He brings 36 years of aviation experience to his new role, including ten at Oxford, one of Europe's fastest growing business aviation airports.



Boeing predicts 75K jobs shortfall

The Middle East will need 32,700 pilots and 44,500 maintenance personnel if it is to meet growing commercial transport needs over the next 20 years.

That was the startling figure to emerge from the first ever crew assessment forecast from Boeing.

Globally, the commercial aviation industry will require 466,650 pilots and 596,500 maintenance personnel over the next 20 years to accommodate the strong demand for new and replacement aircraft, according to the Boeing forecast.

Airlines will need an average of 23,300 new pilots and 30,000 new

maintenance personnel per year from 2010 to 2029.

The crew assessment forecast is based on Boeing's Current Market Outlook. "When you add up all the numbers, you quickly understand the issues facing this industry," said Roei Ganzarski, chief customer officer, Boeing training & flight services. "Our challenge is adapting our training to engage the future generation of people who will fly and maintain the more than 30,000 airplanes that will be delivered by 2029."

Plumb job with Hawker

Hawker Beechcraft Corporation (HBC) has appointed Scott Plumb as vice president, Hawker jet sales for Europe, the

Middle East and Africa (EMEA) region.

In this position, Plumb is responsible for all Hawker jet sales for the EMEA region. He joins the company's sales leadership team alongside Peter Walker, the recently appointed vice president of Beechcraft sales for the EMEA region.

Plumb has more than 20 years of aerospace sales and marketing management experience gained in a variety of roles at Gulfstream Aerospace, Airbus Industrie and British Aerospace. Most recently, he worked for VistaJet, where he was chief commercial officer and a board member, responsible for all sales and marketing activities in Europe, the Middle East and Asia.

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ASC's new regional sales manager

Airline Services Components Ltd (ASC) has appointed a new regional sales manager to oversee existing customers and develop new business in Europe, Africa and the Middle East. French-born Lilya LeCoq joins the company from Messier-Bugatti in France, where she previously held sales and customer service roles.

Boeing Commercial comms manager

Boeing has named Saffana Michael as the communications manager for its commercial airplanes unit in the Middle East, India and Central Asia.

Michael will support Boeing's growing presence and business objectives across the region and will work closely with Marty Bentrott, Boeing Commercial Airplanes' vice president – sales for the Middle East, India and Central Asia.

ARINC chooses Hubbard for EMEA

ARINC has appointed Andy Hubbard as managing director for its Europe Middle East and Africa region (EMEA). He will head the company's EMEA Division based in London.

Hubbard will also work closely with the new ARINC International Division to identify market opportunities, and to launch and support new ARINC products and services.

ETIHAD PILOT QUALIFIES TO BECOME FIRST FEMALE CAPTAIN

Etihad Airways has appointed its first female captain. Sophie Blanchard, a French national, joined the airline in 2007 as a first officer after initially flying for Etihad Crystal Cargo with Air Atlanta.

Captain Richard Hill, Etihad Airways' chief operations officer, said: "We congratulate Sophie. It's a great achievement and well deserved as she has shown tremendous dedication to achieve the rank of captain."

Captain Blanchard started her aviation training after graduating from high school. She gained her commercial licence at 18 in the US and began flying cargo aircraft for a Belgium-based company.

Another Etihad high-flyer is Judith Crompton, who has joined the airline as head of global accounts sales, replacing Jean-Marc Crescent, who has become regional general manager Europe.

The airline has also appointed Hareb Al Muhairi to the new position of vice president of UAE sales.



Etihad signs brand ambassador

Etihad Airways has announced the signing of internationally acclaimed, multi-award winning actress from India, Katrina Kaif, as the airline's new brand ambassador.

The airline has filmed an internet video with Kaif dancing in the airline's first class lounge in Abu Dhabi, under the direction of award-winning Indian film director and choreographer, Farah Khan.

The video, which has been distributed online across YouTube and various social networking

sites, will be used to promote the partnership between Katrina and Etihad throughout the campaign.

Gulfstream's Tarek Ragheb's global role

Gulfstream's Tarek Ragheb has been promoted to regional senior vice president, international sales.

Ragheb has served for 16 years as Gulfstream's division vice president for Europe, Africa and the Middle East (EMEA). He will continue to oversee that region and the team of sales professionals he has put in place.



Experienced Cullen joins Spatial

Spatial Composite Solutions, the Dubai-based manufacturer of aircraft cabin simulators, has appointed Kevin Cullen as its business development manager.

Cullen will support Spatial's development and growth plans in the cabin crew training equipment market globally.

Cullen brings more than 20 years of experience in the cabin crew training industry from start-up to full market penetration at Raytheon, Atlantic Cabins and EDM Ltd.

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PEOPLE

CLAUS FISCHER

Marcelle Nethersole speaks to Safi Airways' chief commercial officer



1

■ What is your aviation background?

I had 20 years on the commercial side with German regional carriers, then the turnaround of dba (former Deutsche BA) after privatisation until sold to Air Berlin; thereafter the start-up of nas air in Riyadh.

2

■ What's it like to be at the helm of the first Afghan airline to provide non-stop flights to Kabul?

It is quite different from anything experienced before. The operation is more difficult as we provide western standard safety and reliability. However, it is also rewarding. As a lot of traffic is triggered by aid organisations working in Afghanistan, the business requirements are a bit more complex due to the "fly America act" and, as Afghanistan is a land-locked country, fuel is especially expensive there.

3

■ Do you feel safe in Kabul? How can you reassure non-Afghani nationals as to the safety of travelling to Kabul?

I have never felt threatened in Kabul – on the contrary, I have met plenty of warm-hearted Afghans. The travel part to Kabul is safe – our passengers know that we take ultimate care of safety issues, like maintenance, training of pilots etc.

4

■ What does a typical day for you involve?

Ten surprises every day... lots of emails with customers and partners to develop new ideas. Working for a small airline means a lot of day-to-day business and educating young Afghans how to run an airline at high-quality level.

5

■ Why have you chosen Dubai as a second office?

Dubai is the most important gateway for passengers to Afghanistan. And for many experts needed in an airline, it is easier to employ them in the UAE rather than in Afghanistan.

6

■ What is the infrastructure at Kabul Airport like? Are there any safety issues?

With the opening of the new international terminal in Kabul, a new safety concept was introduced. Kabul has safety which is just as in any other airport in the UAE – 100 per cent baggage screening and passenger screening is at high standards. That was the reason why Safi Airways got permission to fly non-stop to Frankfurt in Germany. But the infrastructure needs improvement. During peak season there are not enough check-in-counters, which causes delays. The airport would need an instrument landing system (ILS) for both ends of the runway (currently only on one end). Also, the taxiways need to be renewed. There is a lot to do.

7

■ What are your plans and hopes for Safi's future?

In November Safi Airways will go through the IOSA audit, which is the safety audit for airlines from IATA. With this we can prove that we operate according to the highest safety standards. It will also allow us to start code-sharing with other airlines. We then look forward to a slow expansion with more Airbus 320 and Airbus 340s joining the fleet to provide more seats to and from Afghanistan. We believe there is no more need for charter flights to Afghanistan – it is easier and cheaper for all to use scheduled flights.

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