



ARABIAN AEROSPACE

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

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Could Alsalam's partnership with MAZ hold the key to a new completions future?

The first Middle Eastern venture to claim a complete VIP completions capability has shown its hand.

This is Saudi Arabia's Alsalam Aircraft Company, which at MEBA announced that it would work with influential design agency and consultancy MAZ Aviation to bid for the regional VIP completions work that, until now, has been the preserve of a handful of top providers in Europe and the USA.

A giant share of the world market for VVIP completions comes from Middle Eastern customers and it has long been a grumble of owners and operators that all of this work needs to be done in the USA, Switzerland and Germany.

Historically, the completions centres have argued that the skills required from master craftsmen have taken generations to develop and is the very reason why there are so few clusters of completion centres around the world.

But Alsalam has developed an impressive back-shop capability in the last couple of years and is intent on making itself as self-sufficient as possible.

Meanwhile Lufthansa Technik has proven itself more than capable of developing partnerships in the region; Jet Aviation has a good track record with Middle Eastern owners and, of course, Associated Air Center in the States is now a subsidiary of Dubai's DAE.

We should now see more of the supply chain moving to the region if the Alsalam and MAZ initiative takes off.

These companies would find welcome homes in most of the countries in the region. Al Ain and Bahrain are working hard to persuade aerospace companies of their respective merits – but, as you will see in our special country focus this month, so is Saudi Arabia.

The kingdom, for so many years seen as a closed community, is proving attractive to organisations that are ready to operate there.

The Arabian Aerospace team was given, not only a wonderful welcome by the aviation community, but also a taste of what is in store for companies prepared to invest in a market and a population that has discovered the passion for our industry.

ALAN PEAFORD, EDITOR-IN-CHIEF

COVER: Eurofighter Typhoon over Palm Island, Dubai.

PICTURE: COURTESY EUROFIGHTER GmbH

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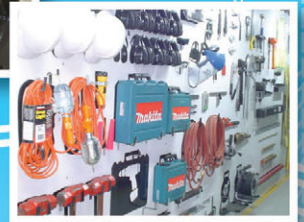
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Airlines need all the help they can get and ancillary revenues – linked with passenger loyalty – is all the rage. We look at what's changing in this part of the business and ask are the days of miles slipping away.

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29 Re-equipping Iraq

As the US and its allied forces withdraw from Iraq, Baghdad needs to re-equip its air force. We find out about why the Lockheed Martin F-16 appears to be leading the race.

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32 Breaking the silence of old England

The quiet of England's western most country famed for its rocky shores and rich cream is now the home for Algerian helicopter pilots learning their skills in the gusty Atlantic breezes.

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Once again the issue of security has topped the industry agenda. We look at three key areas in this eight-page special.

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New Doha arrivals boost for Qatar

Doha International Airport opened its new arrivals terminal to passengers last month.

The 13,500sqm facility includes a dedicated arrivals lounge for Qatar Airways' first and business class passengers, based on the airline's premium terminal. The new lounge features all-day dining, business centre, showers and other amenities to allow premium travellers to freshen up or prepare for important business meetings before leaving the airport.

Qatar Airways Group chief executive officer Akbar Al Baker said: "Our growth in 2010 has been phenomenal and we expect to continue in this vein through 2011 and beyond. The new Doha arrivals facility will greatly assist the airline's expansion plans between now and the opening of New Doha International Airport in 2012."

EgyptAir begins codeshare with SAS

EgyptAir and Scandinavia's SAS airline have agreed a codeshare partnership on flights from the northern Europe countries and Africa.

Customers are now able to fly between Copenhagen and Stockholm, Oslo, Gothenburg, Brussels and from Athens to Copenhagen on board SAS when booking with EgyptAir.

In return, SAS customers now can fly Cairo to Copenhagen, Cairo to Athens and from Brussels to Cairo.

"Our customers now can fly within Northern Europe without exerting more effort," said EgyptAir airlines chairman Captain Alaa Ashour.

"EgyptAir is always



Mohammed Al Zeer: "Our complementary relationship can only be good for the industry".

looking to provide its customers with the best travel options in co-ordination with our co-member carriers in Star Alliance."

Turkish Teknik's interior delights

Turkish MRO specialist Turkish Teknik is to venture into the world of cabin interiors with a new joint venture with its parent company airline, Turkish Airlines, and the country's main manufacturing business Turkish Aerospace Industries (TAI).

The company plans to produce seat parts, galleys and crew rest areas as the first stage of developing a whole cabin completions business.

The new business is named Turkish Cabin Interior Systems and will be 49 per cent owned by

TAI with 30 per cent ownership from the Airline and the remainder by Turkish Teknik, with the MRO taking responsibility for the production and development of the skills base at the TAI facility in Ankara.

Speaking at the official launch Turkish Airlines chairman Hamdi Topcu said: "We would like to prove how aircraft cabin interior products can be produced at high quality under a 100 per cent-Turkish brand. Turkey will be a maintenance, repair and manufacturing hub that should be taken seriously in the near future."

There has been speculation for some time that Turkey is considering developing its own airliner in the future, making use of the skills and workforce it has developed as a first-tier and risk sharing supplier.

Middle East takes up the completions challenge

The first VIP completions centre in the Middle East is to open its doors to customers in the region – creating a challenge to the US and European specialists that have dominated the market for decades.

Saudi Arabian business aviation consultants MAZ Aviation were at the Middle East Business Aviation show (MEBA) in December to announce an agreement with MRO provider Alsalam Aircraft that is designed to propel the latter to the forefront of the global VIP completions business and give owners in the Middle East a real alternative to the providers in Europe and the USA.

"We design interiors for our VIP customers and have achieved a high level of penetration in that market," said MAZ chairman Mohammed Al Zeer. "Alsalam Aircraft's range of interiors capabilities is unique in this region. Our complementary relationship can only be good for the industry and for customers in the Middle East."

MAZ carries out an average of six VIP interior design projects a year, according to Al Zeer, and currently suggests completions centres from outside the region to its customers. "From now on we will strongly recommend our new partner to clients – we believe in Alsalam Aircraft," he declared.

Alsalam has already delivered one luxury C-130 completion to the Saudi government and is due to deliver to the same customer in March.

The company carried out its first VIP completion, a Lockheed TriStar, in 2001-2 and since then has completed seven or eight major projects for Saudi customers. It is now in talks with a couple of potential customers about a Boeing 757 and another C-130.

■ See special feature on Alsalam completions on page 112.

Binladin to build new Jeddah terminal

Saudi Arabia's General Authority of Civil Aviation has awarded Saudi Binladin Group a \$7.2bn contract to build a new terminal and infrastructure at Jeddah International Airport.

The three-year project will see the addition of a 670,000sqm terminal with 94 aircraft bays to replace the two existing facilities currently handling airport traffic. There will also be the world's tallest airport control tower, at 133 metres, and infrastructure linking the terminal with roads and the planned high-speed railway that will join Jeddah with Mecca and Medina.

The expansion project is aimed at raising the capacity of the King Abdul Aziz International Airport to 30m passengers per year

from the current traffic of 17m passengers.

Boeing deal with Saudi Arabian

Saudi Arabian Airlines has placed an order for 12 Boeing 777-300ER (extended range) aeroplanes, with an option for 10 more. The order is valued at \$3.3bn at average list prices.

The airline has also ordered eight Boeing 787 Dreamliners for its long-haul fleet.

"Our decision to go for the 777-300ER is part of a long-term growth strategy to expand and modernise our fleet with newer, more fuel-efficient airplanes, and is based on proven efficiencies," said HE Eng Khaled Al-Mulhim, director general of Saudi Arabian Airlines.

RAK Airways adds Cairo to network

Ras Al Khaimah carrier, RAK Airways, has added a fifth destination to its growing route network, with flights to Cairo.

The airline will offer three flights a week to the Egyptian capital.

Chairman Sheikh Omar Bin Saqr Al Qassimi said: "With new destinations to Cairo, Dhaka and Chittagong in December, RAK Airways will be able to further enhance our high-value offering.

"With our competitive fares, load factors on our inaugural routes have been extremely positive and we are optimistic that we will be able to replicate this success with our Egypt and Bangladesh routes."



Pilatus flies on anniversary of defence deal

The first flight of the first Pilatus PC-21 for the United Arab Emirates Air Force & Air Defence took place on November 22, one year to the day after the contract was signed... and now the first aircraft is close to delivery to Al Ain.

The schedule agreed within the contract was always considered very aggressive but Pilatus said that supreme effort from all involved parties meant this key milestone has been achieved exactly as planned.

Prior to first flight the aircraft was rolled out and presented to the UAE Air Force & Air Defence by Oscar Schwenk, chairman & CEO of Pilatus Aircraft Limited, in a ceremony attended by members of the Pilatus executive management and project teams from both parties.

After the roll-out the aircraft transitioned to the Buochs airfield and the first flight was performed by the Pilatus chief test pilot. This serves as the final check for quality control and performance.

After flight, the data was examined and the aircraft prepared for the remaining production flight test. A post flight debriefing was undertaken with the UAE Air Force represented by Brigadier General Sami Saeed Al Nuaimi. Delivery of the 25 PC-21 aircraft are scheduled to begin during this first quarter of 2011, paving the way for UAE Air Force & Air Defence pilots to undertake basic and advanced flying training at Khalifa bin Zayed Air College, Al Ain.

A tale of four cities for flydubai

It was a busy month in December for flydubai as it touched down in four new destinations in a fortnight.

The network expansion began with Yerevan, the capital of Armenia, followed by Abha, in Saudi Arabia, Sulaimaniyah, in Iraq and, finally, the Turkmen capital Ashgabat.

Chief executive Ghaith Al Ghaith, said: "It was a busy time for us with the start of flights to four new cities. Now we are announcing another destination – Yanbu in Saudi Arabia – which will be our 29th. These services perfectly illustrate what flydubai is all about; opening up new markets for passengers in Dubai, while also offering affordable travel to the UAE for people in the region."

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Etihad-Virgin Blue alliance backing

Australia's Competition and Consumer Commission (ACCC) has produced its draft determination proposing to grant authorisation for an alliance between Etihad and Virgin Blue.

The alliance offers customers a combined global flight network of more than 100 destinations, connecting passengers between Australia and Europe, the Middle East, Asia, and North America.

James Hogan, Etihad Airways' CEO, said: "Partnering with Virgin Blue enables us to offer customers 45 new destinations across Australia, New Zealand and the Pacific Islands, and opens a host of new connections and routings to Australian travellers via Abu Dhabi."

Lebanon Aero Club destroyed by storms

The Aero Club of Lebanon was devastated in December when heavy winter storms destroyed or seriously damaged the few remaining aircraft stationed at the 80-year-old club headquarters at Beirut International Airport.

Heavy rain and strong winds seriously damaged four light aircraft. News agency photographs showed a Cessna 172 Skyhawk flipped over, while another had been rammed into a power pylon.

For years the Aero Club has been the sole source of private training and aviation in the country.

Lufthansa launches bio-fuel flights

Lufthansa is launching the world's first scheduled commercial passenger



Comlux and MedAire 24/7 health deal

VIP passengers and crew on Comlux aircraft will have round-the-clock access to specialised medical care – both in flight and on the ground – thanks to a new agreement between the Comlux group and the international SOS company MedAire.

Bahrain-based Comlux now offers a standard, fleet-wide MedAire medical offering, including 24/7 access to emergency care doctors, on-board medical kits and aviation medical training for 125 pilots and flight attendants.

"As a premium brand in the charter market, Comlux is further defining its safety standards for customers and crew," said MedAire chief executive Grant Jeffery. "Their investment in medical care on board all Comlux aircraft aligns with standards provided by MedAire on leading commercial airlines around the globe."

MedAire's regulatory compliant crew medical training and on-board medical equipment will help Comlux leverage best practices for medical safety and meet the

company's safety management system requirements.

"Every year our Comlux crew will be taught by medical professionals with in-flight medical experience through the management of our in-flight illness and injury programme," explained Daniel Staub, Comlux's head of in-flight product and services.

"MedAire's initial and recurrent courses will ensure we're delivering the highest standard of medical care – giving our crew the confidence, knowledge and resources to prepare for and manage unexpected medical situations."

During unexpected situations, the crew has 24/7 access to emergency care doctors via MedAire's MedLink Global Response Centre. MedLink doctors, who manage more than 18,000 in-flight medical cases a year, will remotely assess the health of the passenger or crew member and make recommendations using medications and supplies from the on-board aircraft first aid kit or emergency medical kit.

flights using bio-fuel in the first half of 2011, using an Airbus A321 aircraft powered by International Aero Engines (IAE).

The daily flights between Hamburg and Frankfurt will begin in April 2011 and use a bio-fuel blend made from 50 per cent hydrotreated vegetable oil (HVO).

Flights will initially continue for six months as part of the 'Burn Fair' R&T

project to study the long-term impact of sustainable bio-fuels on aircraft performance. Airbus's role is to provide technical assistance and to monitor the fuel properties.

Avolon financing deal with flydubai

Sale and leaseback agreements on four Boeing 737-800 NG aircraft, worth \$320m at list prices,

have been announced by flydubai.

Ghaith Al Ghaith, chief executive officer of flydubai, said: "We are delighted to be able to enter into this partnership with aircraft leasing group Avolon. This deal comes after our announcement of sale and leaseback agreements for nine aircraft with GECAS and BBAM and takes the total value of the financing we

have secured during that period to more than \$1bn.

"Our next 13 aircraft are now completely financed, which takes us through to December of next year."

Successful first flight for HondaJet

Honda Aircraft Company has successfully completed the first flight of its FAA-conforming HondaJet advanced light business jet.

The event is a significant step in Honda's aerospace programme, leading to delivery of aircraft in 2012.

The aircraft remained aloft for 51 minutes, during which time its flight characteristics and performance were analysed and systems checks were conducted. Various test data gathered during the flight was transmitted real-time to Honda's flight test telemetry operations base within the company's world headquarters facility in east coast USA.

Jordan Aviation selects P&W

Jordan Aviation has chosen Pratt & Whitney Global Service Partners (GSP) for a three-year engine management programme agreement.

Through the agreement, Pratt & Whitney GSP will use its web-based advanced diagnostics & engine management (ADEM) tools to provide engine performance monitoring services. Pratt & Whitney's team of engine performance analysts will also analyse the data to forecast engine health and maintenance.

"The programme offers tools and provides expert analysis of data to help us optimise our engine maintenance schedule," said Jordan Aviation chairman and president deputy Zuhair Al-Khashman.

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Bahrain breakthrough for TAG Aviation

Bahrain is to get a new business aviation operator. TAG Aviation signed the papers with the Bahrain Civil Aviation Authority at MEBA for its Bahraini Air Operator's Certificate (AOC).

Robert Wells, TAG's CEO said: "We are extremely pleased to take this important next step in TAG Aviation's future growth. The Kingdom of Bahrain's historic dedication to civil aviation and its gateway position to the Gulf region makes it an ideal venue for this new AOC."

The papers were signed by TAG president Graham Williamson and the deputy undersecretary for civil aviation Ahmed Nemat Ali.

The kingdom's "open skies" approach to developing civil air transportation services was the clincher for the Swiss company, along with the fact that Bahrain has become a leading financial centre for the Middle East.

Indeed, it will play host to the Bahrain International Air Show to be held in January 2012.

Nemat Ali said: "This move further strengthens the position of Bahrain as a leading aviation

centre in the region. CAA welcomes TAG Aviation as its new partner and is fully committed to provide all assistance to make the operations successful."

TAG will be operating a Challenger 604 from Bahrain and Williamson said the company is looking at MRO and bringing other aircraft to the region.

In further expansion within the group, TAG Aviation Europe has doubled the size of its hangarage space at Geneva Airport, and said it will co-operate with SR Technics on maintenance, interior completion, and refurbishment for Boeing and Airbus business jets. The agreement covers full support maintenance services, technical consultancy, and aircraft completion services.

The companies have signed an initial five-year contract for full maintenance support for a VVIP Airbus A319, which TAG says underlines the mutual commitment to the future co-operation. The aircraft will arrive with SR Technics in spring 2011.



Graham Williamson and Ahmed Nemat Ali at the signing.

Etihad launches 'all Economy' service

Etihad Airways started flying its first 'all Economy' class in November. The 'all Economy' aircraft operates to Alexandria, Colombo, Damascus, Thiruvananthapuram, Calicut and Peshawar.

Hareb Mubarak Al Muhairi, Etihad Airways' vice president sales, UAE, said: "Customers travelling on the new 'all Economy' aircraft will receive the same world class service and product for which we are renowned, such as seat-back in-flight entertainment screens and hot and cold meals and beverages, as well as a 32 inch seat pitch."

Air Arabia takes first new A320

Low-cost carrier Air Arabia took delivery of the first of its 44 Airbus A320 aircraft in October.

The addition of the new aircraft to Air Arabia's existing fleet of 23 leased A320s, will make the carrier one of the region's largest A320 operators and equip it with one of the region's

most modern fleets.

"Our aim to become one of the world's leading airlines in terms of profit margin, innovation, reputation and operational excellence," said chairman, Sheikh Abdullah Bin Mohammed Al Thani. "As we receive more aircraft, we will expand our network and operations in Europe, the Middle East and North Africa."

Middle East JetCard boost

Business jet customers are, for the first time, able to use JetCard services for travel within the Middle East.

Private jet provider Air Partner has launched a third service area to its JetCard product.

The new 25 hour Air Partner Middle East JetCard follows on from last year's introduction of the company's European and Continental US service area cards to GCC-originating travellers flying within these continents.

The Middle East JetCard is aimed at local business and leisure travellers wishing to fly within their home region, as well as



Yemen awards heli deal to Bell

Bell Helicopter has been awarded a \$27m contract to provide the Yemen government with a comprehensive mission package to support military requirements.

The package includes: four commercially designated Huey II aircraft, pilot and maintenance training, spares, special tooling and dedicated service representatives.

"This contract is the result of a true team effort," said John L Garrison, Bell Helicopter president and chief executive officer. "We are delighted to partner with AMCOM, DCAA and DCMA to provide the Yemen Government with aircraft and support that not only add value to their mission, but are expected to be delivered ahead of schedule."

overseas visitors to the Middle East (including European and USA JetCard holders) who need or want to undertake multi-centre trips.

Dassault boosted by 3D design approval

Middle Eastern customers of Dassault's Falcon jets can now get a realistic feel of what the aircraft will look like inside following FAA approval of the use of 3D data for type design in the completions process.

The approval applies to completions for production aircraft, including the Falcon 900 and 2000 series, as well as the 7X.

Dassault previously received approval for 3D data on the basic design of the Falcon 7X, when it was jointly certified by the FAA and the EASA in 2007.

Nesma looks to EgyptAir for MRO

Nesma Airlines, owned by the Nesma conglomerate of Heddah, is lining up operations for a fleet of modern Airbus 320 aircraft to run from its commercial hub in the Red Sea resort

town of Sharm El Sheikh. The airline announced it has selected EgyptAir Maintenance & Engineering to deliver the vital MRO services for the company's fleet.

Nesma operates flights from cities in several European countries. It also plans to offer flights from Jeddah to Sharm El Sheikh and Hurghada in the near future, possibly as early as summer 2011.

UAE confirms BlackHawk deal

The UAE has announced at the end of last year it will take delivery of 60 BlackHawk utility helicopters, with a direct order from Sikorsky for 20 UH-60L BlackHawks worth \$300m.

Joseph Gigantelli, Sikorsky VP for Europe, Middle East, Turkey and Africa, said: "The new 40 UH-60M aircraft will be released in February 2011 with deliveries running through 2013. We have already sold into Saudi Arabia, the UAE, Jordan, Egypt, Bahrain and we will be looking at Kuwait and Qatar as well in the future."

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Boeing increases 777 production rate

Boeing is to increase its production rate for the 777 programme to 8.3 aeroplanes per month in the first quarter 2013.

"We are increasing our yearly production to a hundred 777s in response to strong customer demand globally," said Boeing Commercial Airplanes president and CEO Jim Albaugh.

"The 777 is the twin-aisle market leader because of its superior operating economics, unmatched range and preference among travellers."

The 777 has a large installed operator base and a track record of proven performance, including 1,163 orders, 907 deliveries and a backlog of more than 250 airplanes.

Northrop Grumman's Maktoum airport deal

Northrop Grumman's air traffic management subsidiary, Park Air Systems, has won the contract for the supply of communication, navigation and surveillance systems for Al Maktoum International Airport in Jebel Ali.

"The contracts for Al Maktoum International have consolidated our position in the Gulf region as the premier supplier of communications, navigation and surveillance systems and services," said Eldar Hauge, managing director, Northrop Grumman Park Air Systems Norway. "We congratulate Dubai on the opening of Al Maktoum and look forward to continuing our successful co-operation as the airport expands towards becoming the largest in the world."

Northrop Grumman Park Air Systems has supplied a range of communication, navigation



Oman strengthens Hercules preparations

Oman is expected to place a logistics support and training order for the first of the three Lockheed Martin C-130J Hercules it has on order. The first of these, a C-130J-30, was ordered in July 2009 for delivery during 2012. Two standard C-130Js were then ordered for delivery in 2013 and 2014.

The aircraft are being procured under a direct commercial sale, whereas the proposed \$76m support and training package is being acquired under US foreign military sale arrangements.

This package will also include the supply of a comprehensive defensive aids system for one of the new Hercules, including an AN/AAQ-24(V) large aircraft infrared countermeasures system, seven AN/AAR-54 missile approach warning systems, two AN/ALR-56M radar warning receivers, and two AN/ALE-47 countermeasure dispenser sets, plus communications and navigation equipment.

The Royal Air Force of Oman (known as the Sultan of Oman's Air Force – SOAF until 1990) currently operates a fleet of three C-130Hs with No16 Squadron at Muscat/Seeb International Airport.

These were purchased in the early 1980s and they have been intensively used, primarily in the tactical transport role, exploiting the Hercules' ability to operate out of remote, semi-prepared austere airstrips. But, although many analysts predicted that the new C-130Js would be direct replacements for the older Hercules, the US Defense Security Cooperation Agency notification to Congress for the proposed support package seemed to indicate that the first aircraft at least, (a stretched C-130J-30) would actually be operated by the Royal Flight of Oman, which currently operates two Boeing 747s and one Airbus A320.

and surveillance products to Al Maktoum International valued at more than \$16m, including ground movement radar, voice communication control system, VHF radios and instrument landing systems (ILS).

The company has provided daily on-site support over the last 24-months to ensure that all necessary electrical and electronic infrastructure has been implemented in the control tower and associated technical buildings and to meet design and schedule requirements.

Park has also been performing the role of air traffic control tower integrator with responsibility for planning, designing, delivering and installing a structured cabling infrastructure to support all ATC systems.

French launch first night-time missile

Sagem (Safran group) and French defence procurement agency DGA have successfully performed the first night-time launch of the 250kg AASM modular air-to-ground weapon with infrared terminal guidance, as part of export evaluation tests.

The test was carried out by French armed forces using a Rafale multirole fighter deployed at the DGA missile test centre in Biscarosse, southwest France.

The weapon was launched at a range of more than 50km from the target, with a vertical terminal trajectory.

Operating at night, the AASM's infrared imager identified its target several seconds before impact, and its image processing algorithms enabled it to hit the target within one metre.



GAA and Gulf Air training deal

Gulf Air and Gulf Aviation Academy (GAA) have signed a comprehensive training agreement marking a major milestone in the co-operation between the two subsidiaries of investors Mumtalakat.

In a ceremony held at Gulf Air headquarters in Muharraq, chief executive Samer Majali (left) and GAA chief Tim Shattock signed the deal, under which GAA will provide a wide range of training services to Gulf Air personnel – pilots, aircraft maintenance engineers, cabin crew, and ground staff on its facilities.

"GAA has very good facilities that cover most aspects of the airline operations, in addition to its Airbus simulators and soon-to-be-installed Embraer simulator," Majali said. "This is an advantage for Gulf Air as we operate both Airbus and Embraer fleets and will be able to get our pilots and engineers trained right here in Bahrain at the comprehensive GAA campus."

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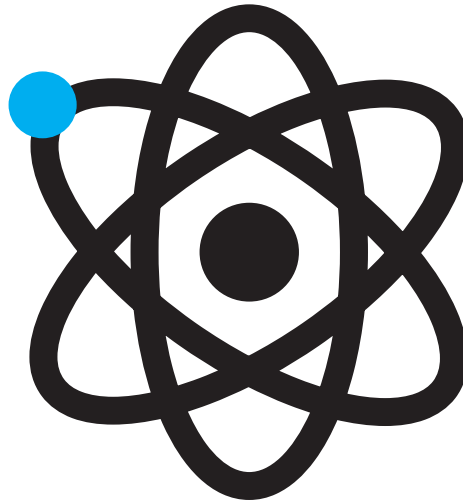
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Libya's two international airlines are due to join forces. But when? The timetable for the long-planned merger between Libyan Airlines and Afriqiyah Airways continues to drag, with no clear indication of precisely when the two Tripoli-based carriers will become one.

Keith Mwanalushi and Alan Dron have been looking at the airlines.



ANATOMY OF A MERGER

Libya's booming oil and gas-driven economy, coupled with the construction of new airports, is attracting lucrative business and leisure opportunities. Assisting to drive that growth are the country's two national carriers, now bracing to enjoy the tailwind.

When the Libyan government granted approval for the merger of Afriqiyah Airways and Libyan Airlines, it was not quite clear as to what direction the merger would take. Taking into account the complexities involved in airline mergers, question marks are still hanging over the deal.

Industry experts in Libya have been quoted as saying that the intention is to have one carrier; but with different functions, similar to that of Qantas, which operates both the mainline and Jetstar Airways.

Combining the two airlines' strengths would transform them from moderately-sized operators to a much more substantial entity. This would not only give them improved

economies of scale but also greatly enlarge their route network, giving far more travel options to passengers.

Bringing the two airlines together has been mooted for several years and, in 2007, a move towards this goal was put in place with the creation of a new state-owned entity, Libya Afriqiyah Aviation Holding Company (LAAHC). This became the parent body for both carriers, as well as to several other related companies covering such fields as aircraft maintenance and catering.

Ultimately, the aim is to privatise these various component companies, although no timescale has been publicly announced for privatising the two carriers.

At the Arab Air Carriers Organisation (AACO) annual meeting in Cairo last October, Afriqiyah chairman Sabri Shadi was quoted as saying the airlines were on the verge of merging, a process that was likely to happen within weeks rather than months.

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However, other senior Afriqiyah officials have since told *Arabian Aerospace* that no timetable for combining the two carriers has yet been set.

"Discussions are going on but the date has not been decided," said CEO Rammah Ettir. He suggested the end of 2011 was a likely timescale but admitted: "That's only a guess – there's a lot to be done."

Similarly, commercial director Khaled Sawese admitted he was not sure when the merger would be consummated. Among details to be thrashed out was the name under which the companies will operate. It was possible that both names and liveries would be retained, but with a single management team, said Sawese.

However, links between the two airlines are already increasing, he said. Co-operation is under way in the fields of planning and pricing, and code-sharing has been adopted on several routes.

Both companies have joined Arabesk, the informal 'network co-operation project' created under AACO's aegis. Arabesk, whose membership now consists of 11 carriers, including major players such as Etihad, Gulf Air and Egyptair, aims to co-ordinate schedules, reduce duplication of effort and link members' destinations.

"The benefits will amount to, at least a three to five per cent increase in revenue," said Sawese. "We will codeshare with many airlines to destinations where we don't operate."

Apart from their Arabesk venture, 2011 will see both carriers aiming to increase their passenger numbers, said Ettir.

The two carriers have different passenger profiles. Analysts indicate that Libyan nationals are more inclined to fly with Libyan Airlines, whereas Afriqiyah has a broader clientele of African and European passengers travelling from north to south.

Libyan Airlines currently serves domestic and regional routes, while Afriqiyah is strong in the African and long-haul sector. Libyan Airlines – simply known as LN by its employees – dates back to its establishment in 1964 and was previously known as Libyan Arab Airlines. The company faced the full brunt of UN sanctions; the political landscape made it difficult to maintain normal commercial operations.

"Aviation in Libya suffered damage but we kept working while the embargo was on," said Captain Fauzi Zaghonni, assistant commercial director for planning and development at Libyan Airlines.

Libya's isolation meant that there was a ban on all flights to and from the country and the supply of aviation equipment was prohibited. By 1992, all international operations came to a halt.

Prior to the sanctions, the fleet consisted of some 35 aircraft – this was reduced to just two, a Fokker F28 and a Boeing 727 by 1999.

For a little more than 10 years, the company was forced to fly only domestic routes with ageing equipment. Reportedly, there were some days that not a single aircraft was in the air with some 450 pilots sitting idle.

Over-employment was also an issue; Captain



"The market is growing very fast in Libya...you can see this by the demand in flights to Tripoli. All the main airlines fly in at least once daily, even twice daily during the summer season."

Captain Fauzi Zaghonni

Zaghonni confirmed that Libyan Arab had 6,500 employees, a drastic reduction to the current workforce of 2,100.

A US embargo continued for four years after UN sanctions were lifted, placing Boeing as a supplier out of range, so the airline turned to Airbus to equip its fleet. A letter of intent was signed in 1999 but the backlog of orders meant that LN had to wait until 2006 to receive its new fleet. Lease agreements were signed in the interim.

After the establishment of Afriqiyah, there was a general restructuring of the airline industry in Libya that led to a change in name from Libyan Arab to Libyan Airlines.

In recent times Libya has embarked on reforms aimed at rationalising its public and private sectors and promoting trade and foreign investment. The opening up of the economy has triggered the interest of opportunity seekers attracted by the lucrative energy, construction

and promising new tourism sectors. In Tripoli, alone, at least 10 five-star hotels are under construction with a similar number of four and three-star hotels already complete.

Captain Zaghonni said: "The market is growing very fast in Libya, with the development of new airports, construction and oil exploration. You can see this by the demand in flights to Tripoli. All the main airlines fly in at least once daily, even twice daily during the summer season."

The latest newcomer on the scene is British Midlands (bmi), which announced the start of Heathrow-Tripoli services from February 2011. The new flights are in addition to those already offered by Libyan and British Airways.

LN hopes to offer a competitive product to counter competition. An MOU signed with Airbus covered the purchase of 15 new aircraft, including four A350s, four A330s and seven A320s. The first new A320 was delivered in September 2010 and the A330s are expected by the end of 2011. The older leased A320s are expected to be phased out gradually.

With the arrival of the new A320s, LN is keen to showcase a modern side to Libya. The new Airbus deliveries are equipped with Internet connectivity supplied by OnAir – a trend that is sweeping the airline industry.

The airline also operates the CRJ-900, including the next generation versions fitted with all leather interiors. "We have configured the CRJs with six business class seats in addition to economy, which is unique – you don't see a premium offering in Europe with this type of aircraft," boasted Captain Zaghonni.

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In addition to the five CRJ-900s already in service, the airline recently placed an additional order for three CRJ-900 Next Gens plus three options. The order is valued at \$131.5m and if all options are exercised it could rise to \$267.8m.

Captain Zaghonni is keen to have on-board connectivity on the CRJs too. He said that LN has asked Bombardier and OnAir to study the possibility of retrofitting the CRJs. "It is an option – we are trying to get a compromised deal from both parties. With regards to the CRJs, the OnAir certification was done after the aircraft was built so, at the time of the order, the OnAir application was not available for this fleet," he explained.

The CRJs are deployed domestically and on a number of European routes such as Kiev, London, Milan and Malta. Zaghonni noted that, ideally, the plan is to assign sectors of more than two hours to the A320s.

In 2007 LN began to issue electronic tickets. "We started to catch up on industry practices that had passed us by; some are already done and others are still to follow," admitted Zaghonni.

He was also quick to point out that the one area of the business that people do not see is the change in distribution philosophy at the airline.

"We came from a very closed environment. We now have billing and settlement plans (BSP) connections in every country we operate. Older global distribution systems (GDS) are connected, or are being connected, to our host Amadeus – basically opening up to travel agencies around the globe. Five to ten years ago this was unseen, especially at our airline," he added.

Developing an airline from a closed environment to having a modern distribution system is a substantial achievement. A comparison of passenger reviews on websites such as Skytrax over the past couple of years somewhat backs up LN's claims of transforming its operations into a professional airline service. Despite a mixed bag of opinions, the general theme seems to be in support of the changes taking place at the airline – especially fleet wise.

With the backdrop of A350s on order, LN was unable to confirm at this stage how long-haul prospects will blend in with Afriqiyah's plans.

Afriqiyah (meaning African in Arabic) took to the skies on December 2, 2001; the first flight was

a 737-400 that carried 75 passengers from Tripoli to Khartoum.

The airline was established within the framework of linking Africa to Europe and the rest of the world, and providing year-round cheaper fares. In fact, the airline is popular with adventure-seeking backpackers and independent travellers between Europe and Africa.

The airline's goal is to improve accessibility to major African cities through Tripoli with connections that make it possible for travellers to reach their final destination by evening of the same day.

Looking at the route network, the African strategy is quite clear; 17 out of the 29 destinations served are on the continent, nine in Europe and three in the Middle East and Asia.

Last year Afriqiyah added Lyon and Milan to the portfolio of European destinations with strategic connection to several African cities.

The Afriqiyah fleet consists of A319s, A320s and A330s. The LAAHC is spending a reported \$5.4bn on new aircraft for both carriers. It was not immediately clear if changes will be made to the fleet strategy once the merger is complete.

"That will be revised and decided by the strategy of the merged company," said Ettir. "However, I don't expect much of a change in the current fleet on order for both companies.

"The fleet orders were co-ordinated from the time the two airlines' ownership was moved to LAAHC," clarified Ettir.

The airlines operate to some common destinations such as London – LN operates out of Heathrow while Afriqiyah uses Gatwick. Both carriers insist that they have a different set of passengers and there is little in the way of competition. "In my opinion Libyan and Afriqiyah were never competing, although operating from the same airport to a few common destinations," Ettir said. "However, we complement each other's network; that is the way I see the merger – bringing together two sets of routes and products that can be further aligned and marketed better."

Afriqiyah has continued with its expansion in the long-haul market with the launch of a recently inaugurated service to Beijing.

The twice-weekly service, using A330-200s, began in November 2010 and is the first direct

route from Tripoli to the Far East.

As expected, the new flights are carefully planned to connect with several African cities such as Abidjan, Accra, Bamako, Lagos and Niamey.

Additional capacity has been added on the Tripoli-Cairo route that is now served six-times per week. Also, the airline rescheduled its flights to Amsterdam, adding a fourth weekly flight that took effect from January 2011.

Ettir is determined to see more long-haul operations over time: "We started flights to China and further Asian destinations may be introduced, but the major expansion will happen when the new airport is complete," he said. "Services to North America will be launched and further frequencies to China, India and the Far East will be introduced in addition to more destinations and frequencies to Africa."

In 2007, the Libyan government announced a project to upgrade and expand Tripoli International Airport to increase passenger capacity to 20m annually. The monumental project consist of two new terminal buildings, each having an area of 175,000sqm, with 48 lifts, 26 elevators, 160 check-in counters, 12 baggage-handling carousels and 32 fixed and 64 mobile passenger boarding bridges.

However, construction work has caused some problems; at Libyan Airlines on-time performance was slightly down due to works taking place. The airline said it is making preparations for the new airport and is working out measures to address on-time performance.

Ettir pointed out that Afriqiyah had suffered a lot due to the shortage of proper facilities at Tripoli International Airport. "Our expansion plans were, to a large extent, slowed down by the lack of proper transit services and, hence, the impact on the number of passengers carried, the number of destinations served and the frequencies to each of these destinations," he said.

"The new airport, when completed, will bring with it better passenger services and better transit facilities. In addition, the facility will provide more efficient passenger services and economical operations for the airlines using Tripoli. The new airport will enhance the picture of Libya and Tripoli as a modern transit hub that connects the world."



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Airline loyalty systems have been around for years but now some may need to be dusted down or completely revamped. Phil Nasskau reports.

Why airlines need to be... **MILES** **BETTER**

Loylogic can revamp an airline's frequent flyer programme with its technology and merchant connections, according to general manager, Middle East, Mamoun Masarweh.

According to Masarweh, 2010 was a great year for the company. Not only did it deliver extra services to existing clients, but also it won a new, but as yet undisclosed, Middle Eastern airline customer.

Perhaps the company's most recognised work is with Etihad Airways' Etihad Guest frequent flyer programme (FFP).

Masarweh said the key for airlines looking to fully utilise loyalty programmes is to re-evaluate the way they look at them. "We have to change the mind-set of the airlines," he said. "At the moment it tends to be seen as a database that can be used for some tactical campaigns. What airlines need to do is look at it as a profit centre."

Masarweh believes an airline should invest in its currency – its miles or points – by creating partnerships for non-air rewards. By then selling its currency to partners at a premium, which are then redeemed at a lower cost, it can generate the first line of revenue.

He added that it is much better for a programme to offer anytime redemption of miles over the current favoured method of limited availability, due to the large number of miles issued and the fact that, historically, airlines have been unable to increase the number of reward seats available. This has led to blackouts and non-redemption periods.

He explained: "Opening the inventory of seats available is a must. Typically, perhaps 10 per cent of seats are reward seats and let's say these cost 25,000 miles; if an airline converts a revenue-generating seat into miles, then the mileage cost will go up for the redeemer but the passenger

Wi-fi carrot to sell travel insurance

Since November 2009 airlines have had to make travel insurance an opt-in selection and the number of customers opting for it has dropped from between 20 and 25 per cent to less than five per cent, said Airsavings' chief executive Raphael Bejar.

In the Middle East the current conversion rate is around two per cent.

What Airsavings has done to try to turn this rate round is to merge travel insurance with Wi-Fi access. "Airlines were asking us to do something about the low conversions and we thought about this," explained Bejar.

"We realised that with the number of devices like laptops and smartphones emerging, merging Wi-Fi access with travel insurance could be a winner."

Now customers can get 30 minutes free Wi-Fi access with per-second deductions, meaning it can be used before departure, at the destination and at the returning airport at over 140,000 hotspots the world over. Passengers can simply copy and paste their policy number to log in at one of the partner hotspots. It is this that Bejar believes will help boost sales in the Middle East.

"This is a practical product that gives the customer some perceived value. Travel insurance is something that customers don't expect to have to use. And now at least they are actually getting something.

"In the Middle East people are very down to Earth and really want to perceive the value of what they are purchasing. The region has a great Wi-Fi network, so we see this as a region for growth."

probably won't care because he or she already has lots of miles as they are already flying frequently."

And this, he said, ties in with research studies on collecting miles. He said that if collection is compared between those who redeem and those

who don't, there is a trend whereby redeemers are between three and six times more aggressive when it comes to collecting miles. He explained that the figure is a range as it varied between the high, medium and low total points. "It's this aggressive collection that pays back for the rewards," he added.

However, the ideal for the airlines is the redemption of non-air rewards. Masarweh said: "There is typically a 50/50 split between redemption of non-air and air rewards. However, air rewards represent 85 per cent of the miles redeemed and this is a cost incurred by the airline, albeit at a lower cost-per-mile for the seat. But, the other 50 per cent of customers taking non-air rewards are happy and at a very low cost – only 15 per cent of the miles.

"Travel rewards or airline tickets are the most sought-after rewards for any customer but they probably already travel a lot and maybe redeem their miles for family holidays, yet they still have many miles. If an airline can let a customer buy, for example, an iPod or hotel stays; it can engage its customers more. More engagement is crucial," he said.

What Loylogic does is provide the back-end technology that can integrate seamlessly with the airline's existing systems to operate the loyalty programme. Masarweh said that the company can develop a system from scratch, as it did with Etihad Guest, or merge into an existing loyalty programme.

"Rewards are the most important part of any loyalty programme, and that's where we come in. Airlines have to deliver rewards to the members, and it has to be hassle-free. Customers need to be given all the options; maybe that's a case of living like James Bond for a week or simply receiving an iPod Touch," he said.



Links with hotels and even a lounge spa are among benefits for Etihad's Guests. Left: Etihad's Guest programme includes golf deals for members. Etihad Golf Club's first member, Henry Tombe is pictured with European Ryder Cup star, Sergio Garcia and Etihad Head of Sponsorship, Nick Cottage.



To that extent, Loylogic has a merchant network that stretches across the globe and can deliver to 225 countries. "An airline's customers are scattered all over the world; our system knows where a customer is based on their profile and then displays rewards available to them in their location," he explained.

He added that with its 'earn and burn' packages, one of the key aspects is the miles booster shop, because this "connects" the customer. The customer is able to collect airline currency by shopping at the airlines' partners, or even directly from the shop. "We speak to suppliers all over the world and look for the very best deal. For example, we might have secured a deal to get iPod Touches at a 40 per cent discount – the airline can then sell this through its loyalty programme and award members miles in addition to the profit it makes from selling at the retail price. This gives the airline revenue and makes members happy. A member is still paying the same price, but now they're getting several thousand miles too.

"Elsewhere on the redemption side, when a member gets a reward the right side of the brain reacts to it – 'Hey I got this for free!' And if it's something like an iPhone, members are naturally going to tell people 'I got this for free because of my loyalty programme at airline x'," he explained. "Engaging the members is key."

At present Loylogic's airline customers include Etihad Airways, SAS, Air Baltic and the new Middle Eastern airline. And Masarweh is bullish about the prospects for the region's airlines. "Other airlines have seen Etihad Guest, and they want to be like Etihad Guest. They want to have non-air rewards, flexible payments and engage their members more and it is because of this that we sense great potential in the region," he added.

But are the days of airmiles over?

New research commissioned by ancillary revenue provider, Collinson Latitude, in conjunction with Airline Information, shows that 90 per cent of airlines are being forced to find new, more profitable ways for customers to redeem their frequent flier currency.

These include partner offers such as hotels and insurance, with less than 50 per cent of Airmiles programmes reported to be profitable.

Respondents cited accounting pressures, such as the need to record loyalty currency on balance sheets as a taxable liability, rising operational costs and shrinking seat capacity as a combination of factors causing the majority of airline brands to lose money on every seat they give away.

This shift to airlines seeking a broader range of redemption platforms is reflective of a wider trend in airlines' ancillary revenue and loyalty activities.

Consumers today demand more choice of how they redeem loyalty currency, and airlines are increasingly able to offer additional products and services from partner brands, seamlessly and securely, via their own sites. This allows airline brands to both enhance the customer value proposition and deliver enough revenue for redemption programmes to be, at the very least, self-funding.

Janet Titterton, business planning director, Collinson Latitude said: "Airline brands are clearly being forced to continually adapt their loyalty programmes in what is still an incredibly tough business environment. New models demand high levels of customer engagement, with tailored reward and recognition content that drives loyalty from a wider customer base.

"While broadening their redemption offering to consumers, it will be crucial for airlines to add value by using their customer data, developing genuine insight and applying it, to offer customers more relevant benefits, products and services. Airlines are uniquely placed to leverage their customer data, as they not only have a large volume of data collected about their customers but, more importantly, they have permission to use it."

The consultancy said offering memberships via unique bundling of, for example, travel insurance or Wi-Fi and airport lounge access, provides a platform for airline brands to build a relationship with customers. "It's by focusing on the relationship instead of the revenue that the airline industry will be able to develop additional sustainable streams of income," Titterton said.



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Aerobatic tales of the Arabian Knights...

The UAE's new Al Fursan (The Knights) aerobatic team has started to receive its upgraded Alenia Aermacchi MB-339A (NAT) aircraft, and all ten are expected to be delivered by the end of the year.

The ten aircraft are being upgraded by Alenia at its Vegonzo factory and comprise six legacy MB-339As that were already in the UAE Air Force and Air Defence inventory, together with four ex-Italian Air Force examples.

The upgrade brings the aircraft to a similar standard to those used by the Italian national aerobatic display team, the Freccie Tricolore.

The wingtip fuel tanks will usually be replaced by underwing dye tanks and smoke generators that will allow the team to produce smoke trails in the red, white, green and black colours of the UAE flag.

The aircraft are painted in a distinctive black and gold livery, with red leading edges and green, white, black and red chevrons under-wing.

Following the success of the Saudi Hawks team, the UAE

Air Force and Air Defence decided to form its own formation aerobatic display team, to 'wave the flag' and to demonstrate the skills of its pilots. Six pilots formed the team initially, flying four or six camouflaged MB339s. The team made its debut in January 2010 with a fly-by at the graduation ceremony for pilots and air-traffic control students at the Khalifa Bin Zayed Air College, and later participated in the Al Ain Air Show.

From July 2010 a larger group of eight pilots underwent a dedicated training course at Udine-Rivolto air base in Italy, under the supervision of the Italian Air Force's Freccie Tricolore team. This training is expected to conclude in January 2011, after which the team will undertake further training in the UAE.

The team is expected to fly as a seven-ship, with one acting as a solo. The Al Fursan display team is expected to become operational in mid 2011, according to Brigadier General Khaled Omar saleh Bahussain, the Al Fursan team director and director of training for the UAE Air Force and Air Defence.



UAE Falcons finally fly home

The UAE Air Force and Air Defence is finally drawing to a close its 12-year long deployment at Tucson International Airport.

Some 13 of the Emirati F-16Es and F-16Fs had been based there alongside the Arizona Air National Guard's (ANG) 148th Fighter Squadron (part of the 162nd Fighter Wing) since 2004 for pilot and engineer training.

Before that, the Emiratis trained in USAF-owned F-16s at the same base.

Lt Col Dan Grimwood, an F-16 instructor pilot and the Arizona ANG's UAE programme manager described the relationship between the UAE Air Force, the USAF, the Air National Guard, and Lockheed Martin and General Electric as having been "Outstanding".

"With that team we put together a great programme and we trained more than 100 UAE pilots in the process," he said.

The UAE F-16s are the most advanced ever built. "The F-16E block 60 is a generation 4.5 fighter. Basically it's an airplane that was custom-made for the UAE.

"It has the biggest engine in any F-16.

"It has a glass cockpit and an avionics set-up that is



a real joy to fly. I've flown many blocks of the F-16 and this is by far my favourite version," said Col Grimwood.

The first five of the UAE F-16s left Tucson on October 20, flying back to the UAE with USAF KC-10 tanker

support. The remainder were scheduled to be home by the end of December.

All UAE Air Force F-16 training will now be conducted within the UAE itself, probably at Al Dhafra with a newly reactivated Shaheen 3 Squadron.

The Saudi decision to buy Boeing F-15 Strike Eagles put an end to the hopes for the Eurofighter Typhoon... or is there more going on behind the scenes? JON LAKE investigates.

PHOON A FRIEND?

When the US Department of Defense notified Congress that its proposed \$60bn arms deal with Saudi Arabia included 84 F-15SA Strike Eagles, many analysts and observers assumed that spelled the end for the long-expected second order for the Eurofighter Typhoon.

It was assumed that the Saudis had become disillusioned with the aircraft, or with their relationship with the UK, or both.

Saudi Arabia had originally turned to the Eurofighter Typhoon to form the centrepiece of its plan to modernise the Royal Saudi Air Force, by giving the RSAF the most modern and most capable fighter in the region.

It also cemented the kingdom's strategic alliance with the UK, building on the two-part, £43bn Al Yamamah oil-for-arms programme, under which Saudi Arabia had received 120 Tornados, 50 Hawks, 50 PC-9s and two Jetstream 31 trainers. These had been Britain's biggest-ever Defence export deals.

When the Kingdom of Saudi Arabia publicly confirmed its order for 72 Eurofighter Typhoons on September 17 2007, a second order for the type was widely expected. In 2005, even before the first order had been confirmed, Crown Prince Sultan, First Deputy Prime Minister of Saudi Arabia and Minister of Defence and Aviation since 1962, reportedly declared his intention for the RSAF to have "200 plus" Typhoons in RSAF service by 2015.

Under 'Project Salam' (originally referred to under the codename 'Rohan'), the UK Government agreed to supply 72 Typhoons to

Saudi Arabia, with BAE Systems acting as the UK Government's prime contractor. BAE Systems was to provide comprehensive support and the UK Royal Air Force was to train RSAF pilots and ground crew at RAF Coningsby, alongside its own personnel.

But, by August 2008, there were widespread reports that the UK Government was in talks with Saudi Arabia for a £4-5bn deal for a second batch of 48-72 additional Typhoons. Inevitably, when dealing with reports about Saudi Arabian military procurement, much reliance was placed on speculative and sometimes unattributed reports, and while there was no confirmation of a second Saudi Typhoon order, it was widely expected.

The reports of an impending order for 84 F-15SAs were, therefore, widely taken as evidence that Typhoon's further prospects in the kingdom had been torpedoed. It seemed as though the RSAF had placed an unexpected order for what is widely believed to be a less capable fighter-bomber, instead of ordering more Typhoons.

The question on everyone's lips was what had dislodged Britain as the RSAF's supplier of choice, and what had dimmed the Saudi fervour for the Typhoon?

Though only the most senior staff within Saudi Arabia's Ministry of Defence and Aviation (MODA) know exactly what, if anything, has blunted the kingdom's enthusiasm for the Typhoon, the obvious conclusions were drawn. It was assumed that there was a fundamental dissatisfaction with the aeroplane itself,

and/or there was a similar dissatisfaction with the relationship between Saudi Arabia and the UK.

Though the Saudis are said to be delighted with the performance, handling and agility of their Typhoons, they reportedly have some concerns about the aircraft. The Tranche 2 Typhoon still has minor problems and shortcomings, and these have not yet been completely solved.

The Saudis are believed to be frustrated by the delayed introduction of a full air-to-ground capability, by the delays to the aircraft's helmet sight (Helmet Equipment Assembly – HEA), and by the delayed introduction of the aircraft's PIRATE infra red search and track system – all of which mean they feel that the jets received are not the aircraft they were sold.

But, more important than these shortcomings with the aircraft (which are, after all, being rapidly addressed and solved), may be problems with the underlying relationship with the UK.

The Saudi Typhoon programme was always seen as being a means by which the development and growth of an indigenous Saudi aerospace and defence industry could be stimulated, with a high level of local industrial participation providing and sustaining thousands of local jobs.

Under the terms of the original 'Project Salam' contract, Saudi Arabia was promised substantial investment in its indigenous aerospace industry.

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It was intended that the first 24 Typhoons ordered for the Royal Saudi Air Force would be diverted from a UK RAF order, and would be taken from the BAE Systems' Warton plant, but that the remaining 48 aircraft would be finished on a Typhoon assembly line in Saudi Arabia. There was also to be a partnered support approach involving both BAE Systems and Saudi industry.

It was initially expected that the later Saudi Typhoons would be assembled at a new facility in Taif by the Riyadh-based Alsalam Aircraft Company, in an effort to take high value, high-technology jobs to under-developed areas of the kingdom.

However, Alsalam is a joint venture between Boeing, which has a majority stake, Saudi Arabian Airways and the Saudi Advanced Industries Company, and this complicated plans somewhat.

In an effort to overcome any problems posed by Boeing's part ownership of Alsalam, the decision was taken that the aircraft would be assembled in a dedicated 'Typhoon Technical Zone' within the new BAE Systems-built, RSAF-owned maintenance facility at King Abdulaziz Air Base, Dhahran.

Saudi assembly was scheduled to begin in the 'second quarter' of 2010, to ensure delivery of the first locally assembled Typhoon in 2011. But there is no evidence that this has happened, with reports of "repeated hold-ups by Saudi Arabia regarding the choice of a build site". Arrangements are not believed to have been finalised and, to meet RSAF schedules, at least some of the 48 Typhoons that were originally meant to have been assembled 'in-country' will now have to be built at BAE's Warton facility. It is also increasingly likely that any Typhoons assembled in the kingdom will be kit-built, 'finished' rather than 'built' in Saudi Arabia.

There have been reports that the UK may have tried to persuade Riyadh that its aspirations for full local assembly are unrealistic and that attempts have been made to convince the Saudis that local participation in through-life support for the aircraft would be a more realistic ambition, and one that would confer greater benefits than those that might accrue from a narrow focus on final assembly.

But the failure to establish full local assembly from the 25th Saudi Typhoon onwards is believed to have been the cause of great frustration, disappointment and even anger.

Fortunately, in August 2010 – a full year after the local line was originally due to have been completed – BAE Systems finally formally announced that a military aircraft assembling plant would shortly be established in the kingdom, according to Guy Griffiths, international managing director.

Griffiths confirmed that BAE Systems had started training Saudis on Typhoon aircraft assembly at Warton in preparation for the establishment of the Saudi assembly plant and said that the necessary agreements had been signed by the Saudi and British governments.

The Saudis had always placed great value on



The Saudis' "over-arching principal" was that they wanted to receive EXACTLY what the RAF received, with the same aircraft, the same training, and even the same technical publications.

building a relationship with the RAF's Typhoon force, and on the importance of receiving training and support from the RAF. According to one programme insider, the Saudis' "over-arching principal" was that they wanted to receive EXACTLY what the RAF received, with the same aircraft, the same training, and even the same technical publications. Urban legend has it that when BAE was preparing Saudi versions of the RAF's technical publications, the Saudis went as far as to politely decline the offer to correct some of the poor spelling and grammar in the RAF's originals!

An initial cadre of 22-24 Royal Saudi Air Force pilots and an unknown number of ground crew were expected to complete training with the RAF, the pilots undergoing conversion with No29 (Reserve) Squadron (the Typhoon operational conversion unit) at RAF Coningsby. Many more

were expected to follow over time.

In the event, though, just six Saudi pilots (Colonel Al Shahrani, Lt Colonel Al Ibrahim, Majors Al Amri, Al Hamad, and Al Qahtani, and Captain Al Tamimi) graduated from No29 (Reserve) Squadron before huge increases in the cost of training charged by the UK brought the training programme to a premature end.

Instead of simply paying the 'marginal cost' of training the Saudi pilots, covering the actual cost of operating the aircraft (including paying instructors and maintainers) the Treasury insisted that the second batch of Saudi trainees should be charged the 'real cost' of training, including a charge for the cost of purchasing relevant capital assets (including infrastructure, as well as aircraft). This reportedly pushed the rate charged for the use of RAF Typhoons at Coningsby from just under £10,000 per flying hour to more than £95,000 per flying hour. The Treasury also insisted that the Saudis should pay commercial insurance rates to cover the RAF Typhoons against loss or damage when they were being flown by RSAF pilots.

"Britain has lost its ability to do 'soft power', to project influence by providing training and support to allied air forces," one very senior RAF officer told *Arabian Aerospace*. "Other air forces can now routinely undercut our prices when offering training."

The Saudis soon appeared to have more Typhoons than trained pilots to fly them, and it became clear that alternative arrangements had been put in place. There were rumours that RSAF pilots were being trained by BAE Systems in-



country, but this was never confirmed, and then reports emerged that the Saudis had signed contracts with the German, Italian and Spanish air forces to train two Saudi pilots each to allow the RSAF to assess the alternatives.

When a Spanish Typhoon two-seater crashed into the ground moments after taking-off from the base at Moron, near Seville, on August 24 2010, it emerged that the student pilot (who was killed) was a Royal Saudi Air Force lieutenant colonel who was visiting Moron to mark the signing of a training contract between the two nations.

This brought the problem to the attention of Britain's new coalition government and the Treasury reversed its policy. Removal of the cost obstacle, coupled with language difficulties in Spain and a desire to maintain standardisation with the UK RAF, are believed to lie behind the RSAF's decision to return to Coningsby. Saudi pilots were expected to restart training at Coningsby before the end of 2010.

Saudi concerns about its relationship with the UK Government may be harder to address than those pertaining to its relations with BAE Systems and the RAF. Feathers may have been irreparably ruffled by the way in which the UK Government dealt with media allegations of bribery in the earlier Al Yamamah contract (the Tornado/Hawk purchase in the 1980s).

With the local production and training obstacles overcome, industry and air force sources in both countries seem sanguine about the Typhoon's long-term prospects in Saudi Arabia, and negotiations for a follow-on Typhoon buy seem to have been quietly re-started.

New Defence Secretary Liam Fox paid a brief visit to Saudi Arabia on September 24, meeting the King and senior officials and visiting the air base at Taif, where the RSAF's Typhoons are based – the single-seaters with No10 Squadron and the trainers with No3 Squadron.

"We weren't expecting an order for a second batch yet and we remain confident that such an order will eventually be forthcoming. Typhoon is far from dead in the kingdom," one very senior industry source told *Arabian Aerospace*.

Some believe that the apparent Saudi interest in the F-15SA represents little more than a bargaining ploy, intended to 'prove' to the UK Government, Eurofighter GmbH and BAE Systems that the RSAF does have other options, in order to extract the best possible terms and conditions for a follow-on Typhoon order.

Others point to the fact that the first batch of 72 multi-role Tranche 2 Saudi Typhoons are re-equipping units previously equipped with the Northrop F-5E Tiger II, and Tornado ADV, while the new multi-role F-15SAs will replace the RSAF's F-15C interceptors – if the deal goes ahead at all.

Many believe that the Typhoon, with its superior air-to-air performance and Meteor and IRIS-T missiles, is a better choice for the air-to-air role, and thus a better replacement for the F-15C.

The F-15SA will use the AIM-9X as its short-range weapon and will be limited to the AIM-120C-7 for medium-range use – a weapon with much less 'reach' than the more modern Meteor. There is little prospect of Israel's friends in the US Congress allowing any more advanced missiles to be supplied to Saudi Arabia.

Meanwhile, the air-to-ground capabilities of the Tranche 2 Typhoon are about to be released via the Expanded Operational Capabilities (EOC 1) package with the SRP12 software load in early 2012. This will give a full swing role capability, using Paveway IV, and will provide an expanded laser designation capability, allowing multiple targets to be engaged during a single pass.

A roadmap of further air-to-ground enhancements is now in place and the SRP14 software load will add StormShadow/Taurus and Brimstone stand-off weapons.

But, even if the F-15SA deal does go ahead, this will still leave a requirement for a replacement for the RSAF's TSP upgraded Tornado IDS aircraft (which provide the RSAF with its stand-off precision attack capability) from about 2020.

The US-supplied F-15SA cannot adequately replace these, since the US will not integrate the required stand-off weapons (like SLAM ER, AGM-130, and Harpoon) on aircraft it sells to Saudi Arabia. The Tranche 3 Typhoon should be ideally suited to fulfil this requirement.

Though no-one will talk about Typhoon's regional export prospects on the record, it is clear that there is considerable optimism that the aircraft may find further customers among the GCC nations.

Omani interest in the aircraft has been widely reported and looks increasingly likely to result in an order for 18-24 new Tranche 3 aircraft, while Qatar, Kuwait and the UAE are all viewed as strong prospects, notwithstanding the UAE's selection of Rafale – since this has yet to result in an actual signed contract.

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Iraq eyes F-16 to spearhead rebuild of fast-jet air force

With coalition forces progressively disengaging from Iraq, its own armed forces are increasingly taking over the responsibility for fighting the insurgency and ensuring the nation's security.
Jon Lake reports.

As part of the security process the Iraqi government is rebuilding an air force. Initially limited to intelligence, surveillance, target acquisition and reconnaissance (ISTAR) types, helicopters and transport aircraft, the New Iraqi Air Force aspires to a real combat capability.

In pursuit of this it has ordered 36 armed Beechcraft AT-6B Texan II aircraft and 26 Bell 407 Helicopters armed with rockets, gun pods and AGM-114 Hellfire guided missiles.

But, most vitally, Iraq has wanted to restore a fast-jet capability, preferably by acquiring a western interoperable fighter aircraft. This move would reduce its reliance on US airpower and would give the government a powerful new tool to use against the on-going insurgency, as well as a means of defending its own airspace, allowing the Iraqi Air Force to support coalition operations.

Tactical air power is becoming increasingly important in Iraq and USAF fast jets have expended increasing amounts of ordnance in their efforts to wipe out the remnants of Al Qaeda in Iraq and eradicate other militant groups. The supply of F-16s to the Iraqi Air Force would, thereby, allow the USA to withdraw further USAF units from the country.

The original Iraqi Air Force had about 700 combat aircraft before Operation Desert Storm, when it lost some 44 in air combat, 222 on the ground (plus 88 damaged) and 84 fled to Iran, never to be returned.

Most of the surviving aircraft were grounded as a result of post-war sanctions and allied operations over the no-fly zones, and were dismantled or buried prior to the 2003 invasion.

There were reports that Iraq was hoping to restore some 18 Mirage F1s to airworthy condition, or that it might receive ten MiG-23s and a similar number of MiG-21s that had been sent to Yugoslavia for servicing. But these would only ever have provided an interim solution, and the air force was always determined to re-equip with a more modern and more credible multi-role fighter.

The air force's fighter of choice is the Lockheed Martin F-16 Fighting Falcon, 96 of which are eventually required to equip five squadrons, with initial deliveries beginning from 2011.

Initial Iraqi requests were for the supply of 36 F-16s, with

the Iraqis requesting pricing and availability information on August 27 2009 and then, in March 2010, submitting a request to purchase 18 Block 52 F-16s.

Following this, on July 16 2010, it was announced that the Iraqi government had signed an agreement with the US government to train an initial cadre of ten selectively-chosen Iraqi Air Force pilots on the T-6A Texan II and T-38 Talon, including an 'introduction to fighter fundamentals' course and specialised English language training.

Upon graduating from their 12-17 month courses, these pilots will have completed all flight training necessary to allow them to immediately move into F-16 conversion training.

Finally, on September 13, the US Defense Security Cooperation Agency (DSCA) notified Congress of a possible foreign military sale to Iraq of 18 F-16IQ aircraft, together with associated equipment and services.

The total value of the deal, if all options were to be exercised, including site survey and construction, personnel training and training equipment, a ground-based flight simulator, tanker support and ferry services, publications and technical documentation, spares and repair parts, support equipment, modification kits, and US Government and contractor technical, engineering, and logistics support services, and other related elements of logistics support, could be as high as \$4.2 bn.

The F-16IQ is an export version of the current Block 50/52 F-16C, powered by a Pratt and Whitney F100-PW-229 or General Electric F110-GE-129 Increased Performance Engine, and equipped with Westinghouse (Northrop Grumman) APG-68(V)9 radar, as used on the Block 52 F-16s supplied to the air forces of Israeli, Turkey, Morocco, Greece, Pakistan and Poland.

The aircraft will be equipped with AN/APX-113 advanced identification friend or foe (AIFF) systems (without mode IV), and advanced countermeasures electronic systems, including the ALQ-187 electronic warfare system and AN/ALR-93 radar warning receivers, as well as AN/ALE-47 countermeasures dispensing systems (CMDS).

The US DSCA notification indicates that the aircraft will be supplied with AN/AAQ-33 Sniper or AN/AAQ-28 Litening Targeting Pods, and with four Goodrich DB-110 Reconnaissance Pods or BAE Systems F-9120 advanced airborne reconnaissance systems (AARS) pods, and may also be supplied with conformal fuel tanks.

The Congressional notification includes weapons, with 200 AIM-9L/M-8/9 Sidewinder IR-homing air-to-air missiles and 150 AIM-7M-F1/H Sparrow semi-active radar homing missiles for air-to-air use. Interestingly, no approval has been sought for the supply of more sophisticated and capable AMRAAM missile.

For air-to-ground use, the aircraft could be supplied with 50 AGM-65D/G/H/K Maverick short-range air-to-ground missiles, 200 500pound GBU-12 Paveway II laser-guided bomb units, 50 2,000pound GBU-10 Paveway II laser-guided bomb units and 50 2,000pound GBU-24 Paveway III laser-guided bomb units, but with no long-range stand-off precision-guided weapons.

A USAF (Montana ANG) F-16C is pictured over Iraq... and now the New Iraqi Air Force is looking for its own fast jet support.





Kuwait C-17 deal could delay Long Beach closure

The Defense Security Cooperation Agency (DSCA) has notified the US Congress of a planned sale of the Boeing C-17 strategic transport aircraft to Kuwait.

If the sale materialises, Kuwait will become the eighth customer for the airlifter and will join its Gulf Co-operation Council (GCC allies) Qatar and the United Arab Emirates as an operator of the big airlifter, beating GCC members Saudi Arabia and Oman (acknowledged by Boeing to be C-17 prospects) to the finishing line.

The DSCA notification outlined a Kuwaiti requirement for a single Boeing C-17; though a spare

engine, spare parts, crew training, a long-term global maintenance and support package and an on-the-spot repair scheme at bases across the world could take the total bill to around \$693m.

Though the DSCA notification stressed the C-17's "relief support, humanitarian disaster and peacekeeping missions", the Kuwaiti Air Force needs a strategic airlifter to augment its existing transport fleet, which currently consists of just three L-100-30 stretched Hercules, and which is due to receive eight KC-130J tanker-transports.

The Kuwaiti Air Force requirement calls for a fully

militarised C-17, with AN/AAR-47 Missile Approach Warning Systems and AN/ALE-47 chaff/flare dispensers, as well as full air-to-air refuelling receiver capability.

The DSCA notice said the proposed sale to Kuwait would contribute to the national security of the United States by "helping to improve the security of a major non-NATO ally which has been, and continues to be, an important force for political stability and economic progress in the Middle East".

Every foreign order for the type also helps to keep Boeing's Long Beach plant (the last remaining aircraft

Airbus celebrates as Egypt opts for three stretched C295s

The Egyptian Air Force (EAF) has signed a contract with Airbus Military for the delivery of three EADS-CASA C295 tactical transport aircraft. The aircraft are to begin delivery later this year.

It is unclear whether they will replace the ageing DHC-5D Buffalos of No2 Squadron (part of 516 Transport Brigade at Cairo-East/Almaza), or whether they will join the C-130s and the An-74TK-200As of Nos 4 and 16 Squadrons that equip the Transport Brigade at Cairo International.

The EADS CASA C295M is a stretched derivative of the successful Spanish-Indonesian CN-235 tactical transport aircraft, originally designed and developed by Construcciones Aeronáuticas SA (CASA) at San Pablo Airport, in Seville, Spain.

CASA is now an integral part of EADS and, thus, of Airbus Military.

The C295M retains the same basic high-wing, rear-ramp-equipped configuration as the CN-235. However, the new PW127G turboprop engines and fuselage plug confer 50 per cent more payload capability, while the new engines and avionics systems reduce costs of ownership.

CASA announced the C295 at the Paris Air Show in June 1997 and the first aircraft made its maiden flight in 1998. The aircraft gained Spanish Instituto Nacional de Técnica Aeroespacial (INTA) certification for military operations, and was granted French DGAG and Federal Aviation Administration (FAR part 25) certification in 1999.

The aircraft occupies a niche below the ubiquitous four engined C-130 Hercules in terms of capacity, but carrying a higher payload and/or more passengers than most of its twin-engined rivals.

The C295 has consistently outsold its rival. Some 85 C295s have been ordered by 13 military customers, and 64 of these are now in operational service in 11 countries.

Regional operators include the Algerian Air Force, which has received six C295Ms for transport and maritime patrol duties with the 2nd Tactical and Logistics Airlift Wing (2e Escadre de Transport Tactique et Logistique) at Boufarik.

More aircraft are understood to be on order by Algeria.

Another Middle Eastern operator is the Royal Jordanian Air Force, which received two aircraft to augment the C-130Hs of No3 Squadron at King Abdullah Air Base at Amman.

The C295M is particularly well suited to Middle Eastern operators, with its ease of maintenance and its proven ability to operate from semi-prepared runways in the most varied types of conditions. The aircraft has already been proven in Bosnia, Iraq and Afghanistan, where it has demonstrated its versatility and adaptability, as well as its ability to take off in 2,200ft (670m) and land within 1,050ft (320m).

It has a modern night vision-compatible glass cockpit with a fully integrated Thales TopDeck digital avionics suite with optional head-up displays. It also has a modern flight management system and comprehensive communications and navigation equipment.

The main cabin is fully air conditioned and pressurised and can be fitted with two or three rows of foldable seats to accommodate 48 fully-equipped paratroops or up to 75 troops.



Moroccan F-16 pilots gear up for training

The first four Moroccan students will begin F-16 pilot training in the USA in March. Morocco's long quest to find a new fighter, culminating in the selection and approval of the Block 52 variant of Lockheed Martin's F-16C/D, was detailed in the last issue of *Arabian Aerospace*.

The first example for Morocco, a single-seat F-16C (08-8001), was rolled out at Fort Worth in late September in the unique new sand-and-stone camouflage specified by the Royal Moroccan Air Force.

The aircraft flew for the first time on October 11.

Morocco ordered 24 block 52 aircraft in 2009 and will be the 25th nation to operate the type.

The Moroccan F-16s will be based at a 'new' base at Ben Guerir, near Marrakesh, where an ancient USAF Strategic Air Command airfield (and emergency Space Shuttle landing strip) is being rebuilt and recommissioned.

But the first Moroccan F-16s will initially be temporarily based in the USA. Some reports have suggested that the Moroccans will train at McEntire Joint National Guard Base in South Carolina, where the South Carolina Air National Guard's 157th Fighter Squadron (the 'Swamp Foxes'), also equipped with Block 52 F-16s, will help the first Moroccan pilots convert to the F-16.

But that's news to the Arizona Air National Guard's 162nd Fighter Wing at Tucson International Airport, where the Moroccans are expected, and where the "F-16 on a stick" gate guard already carries a mile marker for Marrakech, Morocco, marking it out as the latest partner nation to train with the Arizona Air National Guard.

factory) in business, and delays the currently-scheduled 2013 closure of the facility, following the delivery of the last C-17 in September 2012.

If approved, the single aircraft for Kuwait would be built between 2012-2013, and would extend the life of the C-17 production line by about five weeks.

Boeing is actively marketing the C-17 to a number of potential customer countries in the Middle East (including Egypt, Saudi Arabia, and Oman) and to Pakistan and South Africa. But the C-17 is an expensive aircraft, and closing deals for the type has traditionally been slow.

Cornwall laps up the cream of Algerian Navy pilot training

The former British RAF Coastal Command base at St Mawgan in Cornwall – now serving as Newquay Cornwall Airport – is currently playing host to Lynx and Merlin helicopters emblazoned with Arabic script and bearing an unfamiliar green, red and white star and crescent moon insignia.

These are aircraft that were purchased by the Algerian Naval Forces, which are now being used by a dedicated AgustaWestland training facility set up by the company's customer training division. The school is providing type conversion and SAR training for Algerian Navy pilots and aircrew on the Super Lynx and AW101, following Algeria's order for these types in November 2007.

Algeria ordered four Westland Super Lynx Mk 130s, which are versions of the Super Lynx 300, with LHTEC CTS800-4N engines, and fitted with advanced glass cockpits and avionics derived from those of the AW101.

In Algerian service, a three-man crew will operate the Lynx. Algeria also ordered six AgustaWestland AW101 Mk 610s, dedicated SAR versions of the Merlin, similar to the Mk 514 used by Portugal, with a 360-degree search radar and FLIR/EO turret under the nose, and powered by General Electric CT7-80 turboshaft engines.

The Algerian Merlins are fitted with the new uprated tail rotor developed for the type, which gives the aircraft improved control margins at higher all-up weights and allows the aircraft to hover in a 40 knot crosswind. They will be operated by a four-man crew.

The training for the Algerian aircrew includes under-slung load training, winching, cliff rescues and night vision goggles (NVG) operations. The school now occupies the hangar and accommodation previously used by No 203 (Reserve) Squadron, the RAF's Sea King SAR training squadron.

The first Algerian Lynx was flying from St Mawgan by February 2010 and the first Merlin began training operations in Cornwall in May. By the end of 2010, two Lynxes and two Merlins were operating from the Cornish

base. It is expected that the Lynx and Merlin aircrew training will continue for at least five years.

Two AgustaWestland AW109E Power helicopters were specially purchased in early 2009 for the express purpose of providing basic rotary-wing flying training (and especially instrument flying training) for the Algerian aircrew (together with the required ground school) under what is planned to be a three-year contract. The two aircraft wear UK military serials, and are operated by the UK Defence Helicopter Flying School at RAF Shawbury.

Once they have completed the basic rotary training phase on the AW109E, the Algerian trainees move to the RAF Search and Rescue Training Unit (SARTU) at RAF Valley on the island of Anglesey, where a dedicated flight operates a pair of AgustaWestland AW139s (RAF SAR aircrew train on the Bell 412). The two AW139s, painted in the RAF's black and yellow training colour scheme, were handed over in April and May 2009.

Though the deal has not been formally announced, due to Algerian requests for confidentiality, *Arabian Aerospace* understands that Algeria is acquiring more than 80 (and perhaps as many as 100) helicopters from AgustaWestland for its paramilitary police and emergency forces. All of the helicopters are being procured from AgustaWestland via Algeria's Ministry of Defence. Some 72 aircraft (30 AW109 LUH and 42 AW101s) are being procured to meet a long-standing requirement for 'surveillance and intervention' helicopters for the paramilitary Gendarmerie Nationale (the rural police force, also tasked with anti-terrorism and border protection).

The AW109 LUH (light utility helicopter) is a dedicated military/paramilitary version of the A109E Power with an advanced digital cockpit, based on three AMLCDs and featuring a digital four-axis automatic flight control system (AFCS). The LUH is capable of being armed with rocket pods, machine gun pods, pintle-mounted machine guns, anti-tank and air-to-air missiles.

Further helicopters are required for the Unité Aérienne de la Sureté Nationale (UASN), the air unit of the primary urban and metropolitan police force, and the Protection Civile (responsible for fire fighting and responding to emergencies). There is also an outstanding Al Quwwat aljawwiya aljaza'eriya (Algerian air force) requirement for a combat search and rescue helicopter.

The contract is believed to have been split up into a number of phases. The first will cover the supply of 15 AW109 LUH helicopters to the Gendarmerie Nationale, and ten to the UASN, with five AW139s being delivered to the Protection Civile. The second phase will reportedly consist of the delivery of 10-15 AW101s for the Gendarmerie Nationale. The third phase will see 27-32 AW101s and 15 AW109 LUH helicopters being assembled locally (under a joint venture being established between Agusta Westland and the Algerian Ministry of Defence). Further local assembly of the AW109LUH (and perhaps of the AW139) is expected against UASN and Protection Civile requirements.





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Liberating

Libya may appear to be one of the most restrictive countries in the world in which to fly but recent light aircraft tours made by private pilots show the country may be opening up to the possibilities of GA.

Dan Tye reports.

“You’re going to fly over Libya? In a light aircraft? Are you mad?” That was the reaction of my friend when I told her I was joining prepare2go’s first-ever flying safari to the country.

“Is it even safe to go there,” she continued? And she wasn’t the only one to share those concerns.

Libya is seen as having some of the most restrictive borders and airspace in the world and I admit to having struggled to come back with any reasonable answer to reassure my friends.

I further admit to having felt slightly apprehensive about flying a light aircraft there. In fact, I think probably all of the nine private pilots who signed up to prepare2go’s flying safari in November shared that same sentiment.

There were two sides to my apprehension; the first was Libya’s reputation in the media and the second was a fear of becoming stranded in the desert after an engine failure with no hope of rescue.

In both cases, the media had fuelled these fears over the course of my life. Hollywood movies show victims wandering over sand in the searing heat and TV reports repeatedly feature Colonel Gadaffi, in full military regalia and big shades, standing in front of thousands of chanting followers. This does nothing to make Libya appear a welcoming nation for tourists.

Further to that, the country doesn’t allow General Aviation amongst its population, so it certainly seemed that it wouldn’t have the infrastructure to support a group of private pilots from the UK.

But, when Sam Rutherford, the MD of prepare2go, and the man who would be leading us on this first-of-its-kind organised tour, told me how Libya is one of the most beautiful places in the world and that the people are kind and friendly, I had to re-assess my assumptions.

This was helped, in part, by seeing some incredible photographs taken by Sam and his wife Bea from Sam’s aircraft, a N-registered Maule with the nickname Never Say Never. I certainly never imagined I’d fly over the Sahara desert but seeing Sam’s shots of the Maule’s wingtip over stunning sand seas put me there in the cockpit. Knowing that the pair had made a successful recon flight (by themselves) a year beforehand put me much at ease.

Sam first came up with the idea in 2008. A former Army helicopter pilot and master

Panoramic views from the cockpit of the Robin.

Libya

logistics man, he'd been working with car rallies over the desert dunes for three years.

For aerial film shots of the rally, Sam transported in microlights and gyrocopters by road and, after successfully flying them there, Sam decided to fly in his own plane in 2008 using permissions gained from the authorities.

But this is where Sam had the difficulty; the Libyans had systems in place for dealing with 'aircrew' and systems for dealing with 'tourists' but they didn't have systems for 'aircrew that are also tourists'.

He explains: "For the flying safaris I had to let the Libyan Civil Aviation Authority know the routes we were taking in the air but then I had to speak separately to the tourism department to tell them what we were doing

on the ground. The difficulty was getting them to talk to each other and making them understand that the trip involved them both."

With the authorities happy with Sam's plan, he could then accept pilots on to the tour, which would start in Cannes, France, and then head over Sardinia and Corsica to Tunisia on day one.

From there it was on to Tripoli in Libya on day two and then from the capital we'd fly an anticlockwise route over the desert to airfields at Ghadames, Ghat, Ubari then Sebha and back to Tripoli, taking nine days in total.

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There couldn't have been a more interesting mix of GA types on the first safari back in 2009; two twin Cessna Commanders, two Robins, one Grumman Tiger, a Cirrus SR22, a Cessna 172, a Piper Warrior and finally, Sam's Maule. I floated between different aircraft and crews throughout the trip, each leg allowing me to glimpse into how the rest of the group felt about this magnificent country.

We almost never got off the ground at all as, just days before the trip, the Libyan authorities wanted Sam to place a Libyan policeman on each aircraft – a request that simply wasn't possible. Some last-minute fixing and the authorities changed their mind and we were left to fly over Libya with just Sam as our leader. This was remarkable freedom really from a country that seems so strict, and it felt like we had the skies over this immense country all to ourselves.

Sam's first briefing in Cannes put the group at ease and answered those questions which had been on everyone's mind; how we'd navigate, what to do if we had to land in the desert, how we'd be flying together, where we'd be staying and what the weather was likely to do. Sam started off by saying, "Libya is a fantastically beautiful part of the world. It's actually very easy to fly here. The main rule is that we stay above 2,000ft. There is no radar; there is no radio service either until you start talking to the next airfield. We'll file all our flight plans based on the airways but it'll be up to us how high we fly."

All of the pilots who had signed up to Sam's tour were no strangers to adventurous flying but, even so, flying over the desert has its unique challenges and Sam met each question with reassuring responses.

Someone asked about sandstorms. "The chance of a sandstorm is about zero," Sam replied. "I've been working in the desert for 10 years and I've only ever seen one. What's more likely is a very strong wind, which can pull sand up into the air and make it murky ahead. In that situation, fly on your instruments. There may be times when you look out and around and can't see a thing but, actually, you're never really that far from an airfield."

Sam then broke down another of my assumptions that we would be flying over endless

sand seas. "The majority of what we're flying over isn't rolling dunes, it's just flat desert."

Someone then asked about our routing and how we'd navigate? "For good or for bad, most of it is on the GPS using the African database," said Sam. "The only airfield which I don't think you'll find on your GPS is Ubari."

What about the weather? "Weather reports for the south of the desert are, in short, non-existent," he explained. "Generally this time of year it's 10km visibility and no significant change. It's winter here, so it's not going to be scorching hot."

Next was some discussion about aircraft captains 'buddying' up just in case anything went wrong in flight. We'd at least have one other pilot to assist.

"There is, ultimately, a lot of self-help in the desert," Sam explained matter-of-factly. "You all have sat phones and personal locator beacons (PLBs) and there are many 4x4s out there. These things should all be talked about, but fears of the desert shouldn't overshadow the whole trip."

For me, the true nature of the trip didn't really set in until I plotted the route on a road map of Libya. Suddenly, the endless desert I'd imagined in my head became less remote; there were roads and towns passing through it and if I at least found myself down on the ground I could navigate by foot to the nearest road.

The USAF produced some ONC/TPC charts of Libya around 40 years ago and, although

Remarkably, the controller at Sebha trained at Bournemouth and gave us the warmest welcome of the whole safari.

That's not to say we weren't treated well elsewhere. Even with our nine call signs all radioing in within close succession of each other, Libya's controllers may have never worked so hard, but they kept their composure, never once broke out of speaking English and met our demands as best they could.

I remember one particular leg from Sebha to Tripoli where Derek Alway and I, in a Warrior G-BOPA, relayed a message from a British commercial airliner to the controller. Referring to every controller we spoke to as Sir or Madam, helped greatly too. A little respect goes a long way.



Refuelling in Libya is the next prime concern for anyone considering a trip here. Getting fuel appeared straightforward but this was largely down to the great organisational ability of Sam beforehand.

Libya is not at the stage where you can just fly in and refuel from a pump. The Libyan Air Force uses large black AVGAS pillows to refuel its Marchetti aircraft (the only GA-type aircraft in the country) and Sam had negotiated so that we could refuel from these too with each aircraft captain handing over US dollars as payment.

Both Ghadames and Ghat had fuel pillows but at Sebha an old bowser refuelled us, very slowly.

The accommodation surprised me too – from the pleasant but amusing Diplomat Hotel in Tripoli to the Dar Ghadames Hotel out in the middle of the beautiful oasis town, which is also a UNESCO world heritage site.

Ghadames is fast becoming a major tourist attraction in Libya and is helping the country gain popularity with travellers – something, it seems, President Gaddafi is happy with.

It's bringing more money into the country and helping with Libya's image to the outside world.

As an old trading town in the desert, I expected Ghadames to be quiet and rustic but a mass of new construction projects at its fringes signifies a trend towards making Libya more tourist-friendly.

Our night stop out in luxurious tents in the Akakus desert was equally impressive. With fresh, clean white linen and silk sheets hanging from the tent roof, the tent even had a hot shower to wash



lacking airspace, they do at least show some useful ground features. For me though, the basic road map helped me keep my situational awareness.

Before we left the capital and took flight over the desert, for flight planning purposes the group was named Fox formation, with call signs Fox 1, Fox 2 and so on for each aircraft. Sam would file daily flight plans for each aircraft in much the same way it's done in Europe and the desert airfields at Ghadames, Ghat, Ubari and Sebha all, surprisingly, had the ability to file these plans for us, even if they couldn't keep a close eye without radar. All of the tower controllers throughout Libya spoke excellent English too, many of them having trained with ATC controllers in the UK.





away the sand before dinner. That night, while watching a sunset and stargazing in the desert, we all truly felt like Arabic royalty.

The only weak link in the accommodation was the Tikikiba Camp, near Ubari – a complex of huts and shared toilets – but even that was manageable for two nights before returning to the relative comfort in the Diplomat in Tripoli once more.

Foodwise, I never went hungry on the trip. Lunches consisted of roast chicken and chips with main meals of couscous and camel stew. There were even shops in Ghadames and the Akakus to stock up on snacks, canned drinks and chocolate bars.

One lasting surreal food-related memory for me was flying with Martin Gosling and his wife Annette in their Robin over the sand dunes at sunset, weaving above the orange and black-ribboned contours with Jelly Babies in my mouth.

Just as we all took away our own lasting memories, Sam has made more after just returning from his second Libyan flying safari. This time round a ‘Dynamic’ microlight and an R44 helicopter joined in, showing that even these types can cope with Libya’s ruggedness.

This recent trip also included some more ‘firsts’ with some pilots making landings in the desert and on roads. Needless to say, the success of these past trips in Libya is firing Sam up to prepare to go there more often. He is currently planning a Saharan ballooning trip in March, the first time ever that balloons have flown in southern Libya. Then, next October, it’s a helicopter Libyan Safari especially for rotary licence holders supported by a team of ex-military helicopter pilots.

Sam is certainly not one to rest easy and it’s largely down to the key relationships he’s built with the Libyans. He’s currently working with them to write rules on ‘off-pavement’ landings in the country. “We intend to continue pushing the boundaries of GA, particularly in Africa, where we have the most experience and best contacts,” he said proudly.

And for the future? Well, it seems that Sam is living up to the name of his plane, Never Say Never. Safaris to Australia and to Jordan (via Iran and Beirut) are also on the cards. “We’re even looking at a North Pole trip,” he added. “But ultimately, in Africa, everything is possible.”



On Safari, from bottom left: Paying for fuel at Sebha; Sebha control tower with a warm welcome; and the old bowser did the job.

Above left: The GA fleet that made the tour – and the Libyan desert from the ground.

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MEBA scales new heights...and aims higher

Showcase proves that the Middle-East industry is in “excellent health”

There may be economic jitters still around the world, but the Middle East business aviation industry continues to power from strength to strength.

And that was proven by the fourth Middle East Business Aviation (MEBA) exhibition which proved itself a showcase for the region’s strong business aviation industry as it closed its doors following three days of deals, co-operation agreements and commitments on infrastructure investment in the region.

“This year’s MEBA was bigger and better than ever,” said Alison Weller, managing director of show organiser F&E Aerospace who run the event in conjunction with the Middle East Business Aviation Association (MEBAA).

“MEBA, in its four short years, has achieved the hard-earned status of being considered the third largest business aviation show after NBAA in the United States and EBACE in Europe,” Weller said. “We feel that MEBA is very much a complimentary event to the US and European shows. Both have grown this year in terms of exhibitors and the number of people visiting, and MEBA is continuing that trend here in the Middle East.”

13 per cent increase

MEBA attracted 6,200 visitors from 77 countries, a 13 per cent increase over the previous show in 2008, and included 156 media professionals representing 76 media outlets from 14 countries.

More than 500 VIPs attended, including a number of sheikhs from the region, plus other key buyers and buying influencers.

MEBA displayed 53 business aircraft and a total of 338 exhibitors from 33 countries, including business aircraft manufacturers, service providers and suppliers to the industry, in addition to 15 Fixed Base Operations (FBOs) – a real indicator of the increase in business aviation usage from and within the region.

The show was also the venue for the general meeting of the International Business Aviation Council (IBAC). The first time that the Council had met in the region. “We were very proud to have been able to host this meeting and to demonstrate just how much the Middle East and

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Alison Weller of F&E and Ali Al Naqbi, founding chairman of MEBAA.

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North Africa has to offer the business aviation community,” MEBA founding chairman Ali Al Naqbi said.

MEBAA did face some criticism from its members that the show continues to be held in Dubai – its original intention was to tour the show around the region – but both Al Naqbi and Weller said discussions are underway to move it.

They said the reason it had not happened so far is that few places were able to stage the unique blend of exhibition and static park display. However, they added that a venue for the next event has not been decided yet to enable potential other candidates to come forward.

Both Abu Dhabi’s Al Bateen airport and Bahrain’s Sakhir Airbase – home of the successful Bahrain Air Show – could now have the facilities in place to take the event.

Saudi Arabia could also be a contender if plans for Thumamah Airbase develop under the auspices of the Saudi Aviation Club which is committed to extending aerospace activities in the Kingdom.

Future plans could also involve Dubai World Central (DWC). Before the MEBA show had officially opened for business, an agreement was signed for the construction of an FBO facility at DWC’s Al Maktoum International Airport by HH Sheikh Ahmed bin Saeed Al Maktoum, president of Dubai Civil Aviation Authority, chairman of Dubai Airports and chairman & chief executive of Emirates Airline & Group, while he was touring the exhibition stands as part of the opening ceremony.

That site was planned to be the home for the Dubai Air Show in 2009 but because of delays to the infrastructure and finance concerns about building a permanent exhibition centre on the site led to those plans being shelved.

Potential for growth

“Any plans for MEBA in the future need to take into account the potential for growth,” Weller said.

“This is a key area for business aviation and the take up this year indicates the level of influence and importance MEBA has now achieved, and is recognition of its status, in just five years, as the third largest business aviation show in the world. It is important that we continue drive that growth and the facilities and the access need to be right.”

The growing importance – and the whole ethos of the MEBA approach – met approval from exhibitors.

John Leahy, Airbus’ chief operating officer, customers, said: “Air shows such as MEBA are a great way for us to showcase our wider, taller cabins and their unequalled freedom of movement, because they allow potential customers to see for themselves how we compare with traditional business jets.

“It can literally be a case of see, buy and fly in the Middle East market, which is the world’s most important for top-of-the-line and wide-body corporate jets.”



Done deal: From left, Airbus’s Francois Chazelles and Habib Fekih with Rizon Jet’s Patrick Enz.

Rizon Jet is new Airbus ACJ operator

Rizon Jet of Qatar is to become a new operator of an Airbus Corporate Jetliner (ACJ), which it will manage on behalf of a new Gulf customer.

As part of the management contract, Rizon Jet will offer its client consulting services in the design and completion process.

Delivery of the “green” Airbus ACJ is planned during this year, with the outfitted aircraft being handed over to the customer in 2012. The interior will reflect the latest standards of luxury in business aviation.

“Our customer wants a comfortable and spacious environment for his family and friends during his travels. The new Airbus ACJ ticks all the boxes for his requirements. Moving into the management and operation of an Airbus Corporate Jetliner was both a natural and desirable step for us,” said Rizon Jet CEO Patrick Enz.

Airbus has sold more than 70 corporate jets to date, from models based on the A320 single-aisle family to customised VIP ships of the air based on the wide-body models.

Rizon Jet was founded in 2006 and is headquartered in Doha with additional bases strategically located in Bahrain, the UK and the UAE. It focuses on providing a comprehensive suite of private aviation services that includes aircraft consulting, charter, finance, management, maintenance and sales, plus FBO and VIP terminal services.

Al Futtaim to operate at DWC

Dubai World Central has signed a landmark agreement with Al Futtaim Services Company to establish general aviation services and a full FBO at the Al Maktoum International Airport.

The agreement was signed at MEBA by HH Sheikh Ahmed bin Saeed Al Maktoum, president of Dubai Civil Aviation Authority and chairman of Dubai Aviation City Corporation, and Omar Abdulla Al Futtaim, vice chairman of Al Futtaim Group.

Al Futtaim intends to enter into a joint venture with Germany’s DC Aviation to provide a wide range of services from Al Maktoum International to include business jet charter, aircraft maintenance and aircraft management.

The company is expected to launch operations in the third quarter of this year and will host and service a fleet of varied aircraft, including Airbus A319 corporate jets and Bombardier Global Express, and initially occupy an area in excess of 6,000sqm.

Following the signing, Sheikh Ahmed said: “This will be the first general aviation services provider to establish operations at the only aerotropolis in the Middle East and North Africa region. This new partnership represents another milestone in Dubai’s ongoing development as a global aviation hub.”

Instrument landings boost for Al Bateen

An instrumental landing system (ILS) approach and landing capability has just been introduced at Abu Dhabi’s Al Bateen Executive Airport, the Gulf region’s only dedicated private aviation field.

The airport’s 3,200m runway is long enough to handle corporate and VIP aircraft as big as the Boeing BBJ and Airbus A319 CJ. The newly added ILS allows aircraft to land accurately and safely in low-visibility conditions, and increases airport capacity by reducing the minimum interval between landings.

The addition of ILS is part of a long-term development plan for the airport that also includes upgrades to its air traffic control and automated weather observation systems in the near future.

“This milestone firmly places Al Bateen on the map of world airports,” said James Bennett, chief executive of operator Abu Dhabi Airports Company (ADAC). “We see the airport growing into a business aviation hub, and this upgrade puts us on the right track to realise that ambition.”

Located five kilometres from the central business district of Abu Dhabi, Al Bateen has more than 90 hangar parking and maintenance spaces and 20 apron stands.

A business campus offers full facilities for business travellers, including stand-alone offices, and a luxury hotel is planned.

Services for aircraft operators include fuel and handling, and ADAC is working to attract aviation vendors and other aviation businesses.



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ExecuJet aims for World Cup double

ExecuJet Middle East announced that it has scored in Qatar – the country that will be hosting the 2022 World Cup – with an Aircraft Operator’s Certificate application in process and new business under way.

MD Mike Berry is bullish about the prospects for the new Doha base, especially in light of the company’s success during the recent soccer World Cup in South Africa. He said: “We had a huge success with our FBOs there, handling around 99 per cent of traffic at Lanseria airport, with 2,230 movements during the event.”

Indeed, five of the international teams used ExecuJet’s services and on Sunday July 11 there were 187 aircraft on the ramp.

The World Cup has had a knock-on effect for ExecuJet. Berry added: “South Africa put our Cape Town facility on the map. We have had lots of international repeat business from companies who liked our approach and have used other facilities in our global network.”

Although a long way off, he foresees a similar impact in Russia (hosting the World Cup in 2018) and Qatar, and pointed out that the African country is particularly good at developing and retaining staff.

He said: “Qatar has a high GDP and naturally creates wealth, which means people can buy business jets.”

ExecuJet will bring aircraft under management into its Qatar fleet in the first instance, followed by building an FBO, although it has not decided whether that will be at the new or old airport yet. With such ambitious goals in its sights, it looks like the South African-headquartered group has netted a winner in Doha.

High fives all round for Jet Aviation

Dubai’s premier FBO celebrated its fifth anniversary at MEBA on a high. Jet Aviation broke its previous performance records as it saw 468 movements in November, beating the previous best in March 2008.

“We welcomed more than 1,000 passengers. The recession is over,” said general manager Michael Rucker. The General Dynamics subsidiary has bucked the trend of luxury lounges at its base at Dubai International Airport. “VIPs don’t want to sit and drink coffee while they wait for their aircraft,” said FBO director Philippe Gerard. “They just want to get on board and get away.”

The Jet Aviation team has customs and immigration on site 24-hours a day and, as a result, can move their VIPs from aircraft to limo in less than five minutes – and the same in reverse.

The maintenance side of the business is also doing well with Jet Aviation now certificated for Dassault 7X to complete the Dassault fleet as well as Gulfstream, Hawker and Embraer products and Boeing’s BBJ.



Philippe Gerard and Michael Rucker celebrate.



< Falcon nests in Beirut

Beirut-based Executive Aircraft Services is adding a Dassault Falcon 900B to its managed fleet.

The company already operates seven aircraft, two of which are available for charter. Operations and sales manager Nael Chehab said: “Owners here are flying so much that they do not release their aircraft for charter.”

The company has 60 per cent of the Lebanese ground-handling market and has bought a new tug, which can tow aircraft up to Boeing 757 size. It will also increase its executive lounge in 2011.

Jordan heli ‘first’ >

Helicopter charter in Jordan has become a reality for the first time. The country’s first dedicated aircraft brokerage company One & Done Aviation, which has been set up in Amman by Ahmad Abdul Hadi, is now able to offer helicopter flights across the country using government owned helicopters.

“Like a lot of the Middle East it is difficult to operate helicopters and to get the right permissions to fly,” said commercial director Noor Abu Mater (right). “We have been able to make an agreement with the military to fly VIPs in helicopters from Amman to places like Aqaba, the Dead Sea or Petra.”

“The company offers the highest level of personalised service to our clients offering private jet charters, helicopter charters, turboprops, medevac, airliners and cargo aircraft,” she said.





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VIP revamp for 328 Jet >

MEBA visitors were rewarded with the first glimpse of the latest VIP interior for the 328 Jet.

This twin-engined regional jet is now out of production. But more than 200 examples of the jet and its turboprop predecessor are supported by Germany's 328 Support Services. Designated 328DBJ, the interior replaces the Envoy scheme that has been the standard VIP conversion offering for the past few years. It was created by UK-based CTM Design and 328SSG's completions team, and features a compact galley that frees nearly half a metre of space for use as additional forward cabin. A lounge and conference area can also be accommodated in a total cabin volume measuring 10m long, 2.15m wide and 1.8m high. A redesign to the ceiling and sidewall panels is intended to create an impression of greater roominess.

Cabin amenities include electric window blinds, slimline overhead passenger service units, high-definition (HD) in-flight entertainment content delivered to a 32in screen that deploys from the credenza, and air-to-ground phone and Internet access from Aircell.

A 328 Jet airframe costs around \$3-6m, according to 328SSG, with the interior adding a further \$4-6m depending on specification. "As a value proposition it's proving attractive to people who don't want to buy a green jet from the traditional aircraft manufacturers," said sales chief Ray Mosses.



Bombardier's Bob Horner and Comlux's Richard Gaona at the Global signing ceremony.



Ocra's Mike Creed celebrates the sale with Comtran president Jordan Jaffe.

Bombarding the Bombardier order book

Bombardier Aerospace celebrated sales of nine aircraft at the MEBA show. Bahrain-based Comlux Aviation Group signed a firm order for two new Global 7000 jets – the latest aircraft under development by the Canadian manufacturer.

Bombardier also used the Dubai show to announce that Munich-based Jet Air Flug had placed a \$155m order for five mid-size Learjet 85s and two large-cabin Challenger 605 jets for principal operation in Germany.

The Global 7000s are due to enter into service in 2016 and, according to Comlux president Richard Gaona, are likely to prove popular in the region. "Remember we are not buying aircraft for ourselves, but for our customers," he said.

"After seven years of successful VIP charter and aircraft management operations, we have solid experience with the Global aircraft family. With its increased cabin space, the Global 7000 aircraft fills the gap between the ultra long-range jet segment and that of VIP airliners."

He added that his company would only operate two or three types of aircraft models and that he did not yet know under which of the three Comlux AOCs the new aircraft would operate.

Comlux's fleet includes Challenger 605, Challenger 850, Global 5000 and Global Express XRS jets. The Global 7000 aircraft complements its existing VIP wide-body fleet and contributes to the company's plan to become the leading wide-cabin and long-haul VIP charter and aircraft management provider in Europe, Central Asia and the Middle East.

Ocra makes first sale

Ras Al Khaimah-based Ocra Aerospace sold its first aircraft in conjunction with Canada's Comtran international for an undisclosed sum at the MEBA show. The refurbished VIP Dornier Do328-310 jet was subsequently delivered to an entrepreneur in Southeast Asia, who wants it for his personal use.

Mike Creed managing director said: "The aircraft was EASA and FAA certified and, since the type has been flying all over the world for many years, there will be plenty of support for it."

Comtran has been refurbishing the type for several years and the interior is part of its 'Revolution' series.

Ocra Aerospace is a new division of the Isle of Man-headquartered Ocra Group.

It has just set up shop in Ras Al Khaimah and will provide specialist aircraft sales and consulting to the Middle East community.



Inside the new 328 Jet design.

MEBA hand-over for Falcon's first Lineage 1000

Embraer handed over the first ultra-large Lineage 1000 executive jet to VIP charter company Falcon Aviation Services (FAS) of Abu Dhabi at MEBA.

The aircraft is the first of two Lineage 1000 jets ordered by FAS in November 2007 at the Dubai Air Show, together with commitments for more Embraer executive aircraft.

The aircraft is certified for up to 19 passengers in a cabin layout of five distinct zones. The aircraft offers a range of 4,400nm (8,149km) with eight passengers, or 4,500nm (8,334km) with four passengers.

Khaled Al Mansour, chairman of FAS, said: "We are very happy to accept our first Lineage 1000, which boasts a cabin volume three times larger than traditional corporate jets in this category. The UAE market expects excellence from a company such as ours and, with this aircraft, we are sure to meet our customers' expectations."



Embraer's Tony Fitzpatrick (right) and Falcon's Saif Al Mughairy celebrate at the handover.



Ekim Alptekin: new light for Eclipse.

Total Eclipse of the past

Who would have thought there would be a market for one of the smallest very light jets in the heavy metal heartland of Saudi Arabia?

Ekim Alptekin, executive vice president of Eclipse Aerospace, did.

He is promoting the new Total Eclipse – the upgrade and completion of the stalled Eclipse 500 very light jet (VLJ) programme.

Alptekin envisions a rosy future for the aircraft in the Gulf region – in particular Saudi Arabia – as more entrepreneurs realise the value of using small aircraft for journeys that take several hours in a car.

He said he was "very happy" that his Turkey-based company was one of the few to experience growth over the last 16 months, especially in light of the battering Eclipse Aviation took when it filed for bankruptcy after producing some 270 of its VLJ. Now the resurrected

company provides engineering, service and support for the existing fleet of twin-engine jets.

Alptekin said: "We are offering airframes with effectively zero engine time on them, which is an attractive prospect for the market." He stressed that he thinks the reason the original Eclipse had failed was a matter of poor marketing, rather than any fundamental problem with the aircraft or concept of a low-cost very light jet. He also pointed out that such is his belief in the aircraft that he had come to MEBA two years ago as a distributor, but is returning this time as a shareholder in the company.

A key issue for any aircraft programme is keeping its supply chain happy and active. Eclipse was recently helped in this regard by Sikorsky Aircraft Corporation, which will invest into the company, likely by the end of this year.

Embraer's first Legacy 650 to Middle East

The first of Embraer's latest business jets – the Legacy 650 – for the Middle East market was delivered to an undisclosed customer from Jordan in December.

The aircraft will be managed on behalf of its owner by private jet charter operator Arab Wings, also based in Jordan.

"We are delighted to deliver the first Legacy 650 large executive jet in the Middle East to our friends from Arab Wings," said Colin Steven, vice president. "The aircraft's Jordanian owner will appreciate the unparalleled comfort of the cabin with its three distinct zones, providing space to both work and relax. The aircraft's huge baggage compartment is ideal for long-distance flying."

Arab Wings already operates one super-midsize Legacy 600 in its fleet. The large Legacy 650 will enable the charter company to fly clients up to 3,900 nm (7,223km), non-stop, with four passengers, or 3,840 nm (7,112km) with eight passengers.

Due to the aircraft performance under hot and high conditions, where they operate easily up to temperatures of 50°C, both aircraft have been very successful in the Middle East market.

Red alert over grey market

The Middle East suffers from a high number of illegal charter operations – known as the ‘grey market’. But the problem is wider spread.

Jon Lake reports.

The panel: Marwan Khalek, head of Sharjah operator Gama Aviation; David Macdonald of Dubai-based international charter provider Air Partner; Aoife O’Sullivan of aviation law firm Gates and Partners and Anne Seckington, of the UK British Business and General Aviation Association (BBGA).



The European Business Aviation Association (EBAA) is preparing to launch a campaign aimed at drawing attention to, and raising awareness of, the problem of illegal operations – or ‘grey market’ charters.

The official campaign will see the EBAA distributing a flyer entitled “Is your flight legal?” to brokers, FBOs, airports and other interested parties. At a round table discussion ahead of MEBA, four senior figures in the aviation charter world outlined the case against such illegal charters, describing the extent of the problem and explaining its repercussions. The panel consisted of Marwan Khalek, head of Sharjah operator Gama Aviation; David Macdonald of Dubai-based international charter provider Air Partner; Aoife O’Sullivan of aviation law firm Gates and Partners and Anne Seckington, of the UK British Business and General Aviation Association (BBGA).

Illegal operations describe flights when an operator carries passengers for financial gain (or for other consideration) without having the required commercial air operator’s certificate (AOC), and without being properly approved to carry paying passengers by the appropriate regulatory body. This constitutes an illegal public charter.

Alternatively, it is also when aircraft registered outside a particular market – for example a US or Caribbean-registered jet operating in Europe – is offered for hire where they may not be authorized to fly commercially without proper permission.

Though no-one seems able to accurately quantify the extent of the grey market charter problem, those within the business aviation industry seem to be agreed that it is extensive. Some insiders suggest that it, perhaps, accounts for as much as half of current charters.

Most agree that it is a problem that is growing and Khalek observed: “The apparent increase in the number of illegal

charters is causing concern to the professional operators within the industry. We are happy to compete on an even playing field but, in many cases, we are clearly not on such a level surface.”

This growth is perhaps an inevitable consequence of the current economic landscape, according to Macdonald, as the owners of business aircraft “see an opportunity to make some money to cover costs, and as passengers see the availability of discounted charters”.

It is being facilitated by what

MacDonald calls “pseudo aviation companies”, who are brazenly offering and promoting illegal charter flights in the marketplace, often using websites that may superficially appear to belong to a normal charter operator or broker.

Khalek said: “The Saudi Market remains very challenging in terms of grey charters but the rest of the region seems to be becoming far more professional about the way in which it works – primarily because there are a large number of licensed operators. As a result, charter rates are already very competitive.”

MacDonald agreed, noting: “Prior to the emergence of the licensed carriers, the promotion of private jet charter in the region was very difficult. But the large number of licensed carriers in the Middle East now allows us to promote charter more to our western and local clients in the region.”

But the problem of illegal operations is one that raises serious implications, according to specialist aviation lawyer O’Sullivan, who also believes that many aircraft owners and charter passengers are simply unaware of the consequences of grey market charters.

Quite apart from the possibility of fines being imposed on people operating illegal charters, the aircraft operator risks invalidation or denial of insurance cover (since he will inevitably be operating in contravention of insurance policy conditions) and may compromise any financing arrangements, as most financing contracts will include a clause stating that the aircraft may not be used for public transport.

Whether he or she realises it, the private owner who allows their aircraft to be used for illegal public charter takes on the liabilities, operational risk, and responsibilities that an AOC holder would normally assume, and does so without the protection of valid insurance.

With a growing trend in Europe towards the criminalisation of aircraft accidents, there is a growing risk that the private owner could face criminal prosecution and sanction if, in a worst case scenario, they could be shown to have failed to exercise due care as the aircraft operator.

Illegal and grey market charter operations may also put pilots in an invidious position; likely to be held accountable if investigations are made into whether an aircraft is legally entitled to undertake charter operations, especially during ‘ramp checks’. Any pilot flying a grey market charter is also doing so without enjoying the protection of an operator’s operations manual, and may come under pressure from the customer to cut corners, ignore limits or otherwise breach regulations.

While there is widespread recognition that there is a problem, Khalek believes that the enforcement of the relevant regulations is effectively non-existent, and that there is no serious disincentive to those who choose to offer illegal charters.



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US call to share defence burden drives Middle East spending spree

The world's defence industry focuses on the Middle East market as IDEX opens its doors in Abu Dhabi.

Jon Lake reports.

The International Defence Exhibition and Conference (IDEX) in Abu Dhabi has often been the venue for announcements or confirmation of major acquisitions by the UAE Air Force and Air Defence. With the finalisation of major contracts expected imminently, the IDEX organisers must be hoping for a particularly successful show.

But it is not just the UAE Air Force and Air Defence that is embarking on a spending spree as it re-equips and expands, as its rearmament programme is part of a wider regional process.

Over-committed in Afghanistan, and with its own budgetary constraints, the USA has turned to its regional allies to 'burden-share' in the maintenance of regional security and stability – not least in the face of a resurgent Iran.

And, though Iran remains some way from representing a real threat to its neighbours, many analysts believe that the Islamic Republic will eventually become a nuclear power with credible short- and medium-range delivery systems. It is also progressively modernising, improving and growing its conventional military forces and capabilities.

While Iran's nuclear programme and its conventional expansion is a concern to many



Left: Two years ago there were celebrations over a planned order for the M346 – but Alenia is still waiting.

Above: Unmanned systems will have an increased presence at this year's IDEX.

nations in the region the US response, strengthening the forces of its key allies, has itself led to some other concerns.

The re-arming of Iraq, for example, has led some of that country's neighbours to re-examine their force structure and readiness, while proposed sales to Saudi Arabia have led to 'balancing' deliveries of military equipment to Israel, in turn provoking something of a general arms race in the region.

In the UAE, there are a number of outstanding requirements where the selection of a winning aircraft type has been announced, but no contract has been signed.

Thus, the UAE has announced that it will buy the Alenia Aermacchi M-346 Master advanced trainer, and the Dassault Rafale strike fighter. But some believe that these two apparent selections may yet be overturned – just as the UAE's previous selection of the CN-235MPA was abandoned in favour of a purchase of maritime configured DHC Dash 8s.

A senior industry source commented wryly that "Alenia seems to have snatched defeat from the jaws of victory and the UAE are now again looking at the T-50."

It was reported that Alenia had failed to meet

UAE demands for it to provide UAV technology alongside the M-346s and, subsequently, it was said that the UAE had accordingly re-opened talks with KAI for the T-50.

And in September it was reported that the UAE had asked Boeing for information on the F/A-18E/F Super Hornet, while *Arabian Aerospace* understands that Eurofighter is again marketing its Typhoon to the UAE.

French expectation

It is believed that the UAE became disillusioned with French unwillingness to 'buy back' its Mirage 2000 fighters and by the French expectation that the UAE would fully fund the development effort to upgrade the Rafale to the standard that it required (with a more powerful, 9tonne thrust version of the M88 engine, a more powerful AESA radar, and an upgraded EW system).

After its experience with the F-16E/F, the UAE may be nervous about ordering a variant of an aircraft type that is in advance of that used by the 'home customer', and of funding significant upgrades. By contrast, the Super Hornet is already at the technological level required by the UAE and offers better interoperability with US forces.

Perhaps more vitally, there is a growing realisation in the UAE that interoperability with US forces is key, and this increasingly mitigates against purchasing a French fighter.

The UAE Air Force and Air Defence has forged ever closer links with the US Air Force and, last year, participated in the Red Flag exercise at Nellis AFB in Nevada. In a speech in Bahrain last year, General David H Petraeus the Commander of US Central Command, expressed his opinion that the UAE air force "could take out the entire Iranian air force" on its own, and rated the UAE as a significant military power in its own right.

Other outstanding UAE requirements include one for a new AEW/AWACS aircraft. The UAE has selected the Saab 2000-based Erieye as an interim solution for training, operational evaluation, and for the development of tactics and doctrine. But a definitive AEW/AWACS aircraft remains an urgent priority for the UAE, with the Saab, Grumman's E-2 Hawkeye and Boeing's 737 AEW&C all remaining in contention.

And then there is the array of requirements where the US DSCA has notified Congress of possible sales to the UAE, but where no contracts have yet been signed. These sales include 60 AH-64D

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Apache attack helicopters, 16 CH-47F Chinook heavy-lift helicopters, 100 Army tactical missile systems (ATACMS) T2K unitary missiles and 60 low-cost reduced-range practice rockets.

Similar possible foreign military sales have been notified to Congress concerning the supply of 84 F-15SAs, 70 AH-64Ds, 36 AH-6Is, 72 UH-60Ms and 12 MD530s, as well as Javelin missiles to Saudi Arabia, Army tactical missile systems to Bahrain, a C-17 and Patriot missiles to Kuwait, 18 F-16 fighters to Iraq and 18 more F-16s and C-130J support and training to Oman (augmenting a commercial buy of a C-130J-30).

The sale of 18 AH-6i light attack/reconnaissance helicopters, with an option for a further six, to Jordan remains to be finalised.

And there is a serious, on-going fighter competition running in Qatar, and another in Kuwait, while a Eurofighter Typhoon order from Oman is believed to be impending, or perhaps merely waiting a formal announcement.

The Qatari requirement is assessed by some industry insiders as being the most 'near term', with some 24-36 fighters required to replace the air arm's ageing Dassault Mirage 2000s. The Qatari competition is being rigorously and well run, and the air force is understood to be evaluating the Lockheed Martin F-35 Joint Strike Fighter, Boeing's F/A-18E/F Super Hornet and F-15, as well as the Eurofighter Typhoon, the Saab Gripen NG and the Dassault Rafale.

Bahrain is also understood to be formulating a future fighter requirement.

Largest and most important

The 2011 IDEX is the tenth such biennial event and it has become the largest and most important defence exhibition in the Middle East and North Africa region, attracting the most powerful and most influential military and government representatives from the GCC and MENA countries.

Very much a tri-service defence and security event, IDEX includes air vehicles and associated systems, space systems, land vehicles and systems, weapons and ordnance, homeland and internal security equipment, C4ISR, radar, electro-optical and FLIR systems, electronic warfare systems, simulation and training systems and services, logistics and support systems and services, medical, survival and NBC/CBRN equipment.

There are live daily demonstrations of land vehicles, aircraft, UAVs, and even marine craft.

Increasingly, IDEX is a platform for local industry, such as the exhibition's headline sponsor, Tawazun Holdings, which includes the UAE's indigenous gun manufacturing company Caracal International. Its Cracal pistol is now the official sidearm of the UAE armed forces and security forces, and it has been exported to Bahrain and Jordan.

Tawazun and other local companies are driving



Lockheed's F-35 could be in the frame for Qatar. Below: The Smarteye.



forward the processes of Emiratisation and technology transfer, while pursuing economic diversification, and contributing to the growth and increased value of the UAE's industrial base.

For the first time the new, dedicated naval defence exhibition (NAVDEX), will be running in parallel with IDEX 2011. This is made possible by the existence of the Abu Dhabi National Exhibitions Company (ADNEC) adjacent marina, accessed by a dedicated walkway from IDEX.

This will have its own purpose-built air-conditioned temporary structure next to the water, with 'on-water' boat displays berthed alongside, visiting naval vessels and daily amphibious and waterborne demonstrations.

The last IDEX (in 2009) attracted 150 official delegations and the UAE Armed Forces announced deals worth AED 18.4bn (US \$5bn), leading the organisers to claim that it was one of

the most successful defence shows in terms of signed business agreements. At least as many official delegations are expected this year, together with an estimated 900 exhibitors, and the organisers predict that the 2011 exhibition will surpass all records for contracts signed or secured.

This year's IDEX is being held at the Abu Dhabi National Exhibition Centre from Sunday 20 - Thursday 24 February in the 12 indoor exhibition halls, and outside static display areas.

The venue has been expanded and improved, with 600 hotel rooms/suites at two hotels adjacent to ADNEC, new retail and catering outlets, and a fully operational Abu Dhabi International Airport check-in facility with on-site duty free shopping.

Special package

The organisers have also introduced a special package for companies making their IDEX debut in an effort to encourage first-time exhibitors. This includes a 'First-Time Exhibitor Zone' near the main entrance, which aims to give new participants better exposure on a highly competitive floor, and to provide them with the most cost-effective platform to stand out amongst the crowd at the show.

The exhibition is organised by the Abu Dhabi National Exhibitions Company, in association with the UAE Armed Forces GHQ, under the patronage of HH Sheikh Khalifa Bin Zayed Al Nahyan, president of the UAE and supreme commander of the UAE Armed Forces.

The main exhibition will be preceded by the one-day Gulf Defence Conference (GDC) on Saturday 19 February, organised by the Institute for Near East and Gulf Military Analysis (INEGMA).



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Raytheon



NORTHROP GRUMMAN

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This year's IDEX will see nations across the MENA region assessing their air-launched missile requirements and, as CLAIRE APTHORP finds out, the market for these weapons is already growing dramatically.

Missile makers home in on Middle East market



Dominance in the air is a critical prerequisite to success in major combat operations. As the balance of political power in the Middle East has shifted over the past decade, and regional tensions persist, many of the armed forces in the region have undertaken comprehensive reassessments of their national aerial defence capabilities.

As well as upgrading and acquiring new and sophisticated aircraft, many nations within the region are updating their air-launched missile inventories; and this interest has fuelled a boom in the Middle East market, with a number of defence companies being very active in promoting their products.

A diverse and flexible air-launched missile inventory including air-to-air, air-to-ground and air-to-ship missiles, is a vital component of a nation's ability to defend its borders and territories from hostile attack. As technology advances in this market, armed forces are no longer restricted to relying on close-range combat capabilities; but are able to invest in highly advanced stand-off weapons for true air dominance.

The market is seeing investment in smarter weaponry – more precise systems that reduce collateral damage and the risk to the pilot; as well as greater importance being placed on coalition interoperability.

The Middle East market is one of the biggest accessible markets for missile technology in the world. The region has experienced tremendous growth over the past decade, and has now reached a stable point in terms of growth with a handful of companies, including MBDA, Raytheon and Lockheed Martin, dominating the market with their advanced systems.

With a number of contracts being pursued within the region, Harry Schulte, vice president of Raytheon Missile System's Air Warfare Systems, said: "We are pursuing a 'follow-the-platform' strategy. Our weapons are affordable and integrated on a wide variety of platforms. A fighter or attack aircraft without weapons is pretty much useless, so we want to make sure that our partners in the region know about the latest developments with our weapons, and understand how they can use them to promote regional security."

Raytheon is promoting a number of key products within the region, including the AIM 120 C-7 advanced medium-range air-to-air missile (AMRAAM), Aim 9X Block II, Paveway, and Maverick missiles.

The platform-agnostic nature of these products, and the fact that they are integrated on so many different platforms, is a key factor to the success of these missiles. Schulte explained: "Not only does

this translate into significant cost savings on integration to different platforms but it simplifies coalition interoperability because so many countries use Raytheon weapons. Weapon commonality among allies means similar training programmes, simplified logistics trains and the ability to operate more effectively in a coalition environment."

The AIM 120 C-7 AMRAAM is, arguably, the most recognised weapon of the Raytheon portfolio. Integrated on to eight fourth and fifth generation aircraft, the weapon is fielded by 36 air forces worldwide and more than 18,000 units have been produced. It provides operational flexibility and multi-shot capability, as well as robust immunity to countermeasures, state-of-the-art active radar guidance and immediate manoeuvring following launch.

The AIM-9X Block II is the world's "premier fifth generation IR dogfight air-to-air missile", claimed Schulte. The system, with extremely high-off boresight capability, thrust-vectoring manoeuvrability, internally-stored cryo-engine and an imaging focal plane array, is stored in a 'smart' container. "This means that, as threats evolve and we develop different uses for the weapon, we can upgrade the missile software without ever taking it out of the box," explained Schulte.

The company's Paveway family of laser-guided



The Amraam is loaded. Opposite, from left: The Exocet AM39, The AIM9X, and the Hellfire II.

and dual-mode GPS/laser-guided weapon systems is also being marketed in the region. The system is a derivative of the Enhanced Paveway that is designed for use with the MK and BLU series warheads ranging from 250 to 5000 lbs.

“In effect, Paveway can transform a ‘dumb’ bomb into a lethal precision munition,” Schulte said. “This system has been used to eliminate the full spectrum of targets from aircraft shelters to runways, bridges to buildings, and command bunkers to mobile missile launchers as well as moving targets, and accounts for more than half of all air-to-ground precision guided weapons expended in Operation Desert Storm and Operation Iraqi Freedom.”

Also with a very high success rate is the Maverick, three variants of which, charge-coupled device (CCD) guided weapon, a laser-guided system and an infrared-weapon, are included in numerous Middle East nation missile inventories. Raytheon has recently begun the testing of the enhanced laser-guidance and control section, and the enhanced laser-guided variant is expected to go into production shortly.

The success of the system is at least in part due to the fact that it requires only minor software updates to platforms for integration, “which is

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a whole lot easier and more affordable than re-writing an aircraft's operational flight program to accommodate a new weapon system", according to Schulte. "It also allows customers to upgrade the system rather than acquiring an entirely new one," he added. "By upgrading, you can get all the benefits of purchasing a new system at the fraction of what a new system would cost. And you can do it on your timeline, when you're ready and when you can afford it."

MBDA is currently marketing the whole range of its air-launched missile products to the Middle East, with a number of contracts in place with regional armed forces. Florent Duleux, vice president export sales directorate said: "We are, at the moment, in discussions with many customers in the Middle East, with the market covering the whole range of our products."

"The region has the capability to invest in and purchase high technology systems and, in order to work with these countries, you must be offering state-of-the-art products that are at the top of the technology range – this is why MBDA has a long-standing relationship with many customers in this region, and why we will continue to do so."

MBDA offers a number of products with different capabilities within the region. Its air-to-surface products include the Storm Shadow for stand-off and deep strike, the Exocet anti-ship missile, the dual-mode Brimstone and the A2SM, in partnership with Sagem.

"Deep strike is a continuing strong market for us, as is the large anti-ship capability," Duleux explained. "For these products the market will continue to develop over the coming years as the numerous threats and political tension in the region remains very high, with countries looking for products capable of meeting the specific requirements of their armed forces and aerial platforms of choice."

Precision weapon

The Storm Shadow / SCALP is a conventionally armed stand-off air-to-ground long-range missile. The precision weapon is designed to neutralise high-value targets while avoiding collateral damage, such as well-defended static infrastructure targets.

The weapon has been in service since 1997 with Western armed forces, including the UK and France, as well as undisclosed Middle Eastern nations.

The Storm Shadow / SCALP is a pre-programmed fire-and-forget missile that allows the launch aircraft to remain well clear of enemy defences. In the first phase of flight, the missile avoids radar detection by cruising at an optimum low-level altitude, and is autonomously guided by its navigation system via digital terrain profile matching and GPS. Final target approach is provided by an imaging infra-red seeker and automatic target recognition system that is able to match the actual scene with the memorised scene. The 1300kg turbo-jet engine weapon has a range of more than 250km.

The family of Exocet anti-ship missiles provides fire-and-forget capability with skimming flight for high-value naval targets that can be fired from all maritime platforms, including fixed-wing and helicopter aircraft as well as surface ships.

The Exocet family includes the AM39 that can be launched at stand-off range (up to 70km depending on launch altitude and speed) from aerial platforms; the latest digitisation of the AM30, the AM39 Block 2 was developed specifically to meet the requirements of the latest generation of medium-heavy rotary and fixed-wing aircraft, including the Rafale F3 combat aircraft.

The missile is propelled by two solid-propellant rockets and uses inertial navigation during cruise phase and active homing during terminal phase, and has been sold in all configurations to 35 nations worldwide.

In addition to the Exocet, the anti-ship capability is served by MBDA's Marte medium-range missile, which is designed to meet operational requirement in complex littoral environments and blue water scenarios.

"This product has been very successful lately and we expect this to continue," said Duleux. "It is very powerful compared to similar sized missiles and can be fitted on helicopters, including the AW101 and NH90, in its MK2/S configuration.

Inexpensive products

"On the other side of the market," Duleux added, "a more precise and accurate requirement is emerging for anti-small ship and anti-tank products. Some companies are choosing to meet this requirement with limited capability inexpensive products, such as laser-guided rockets, while we prefer a high quality capability – including the Brimstone – which allows several firings. This is not the case with a rocket."

The Brimstone air-to-ground precision attack weapon is specifically designed to meet the threat posed by armoured vehicles that are becoming more advanced, protected, discrete and mobile than ever before.

The system comprises a re-usable launcher with three missiles with direct or indirect firing mode, and can be fitted into combat aircraft for advanced, flexible and precise attack. The missile follows an inertial trajectory during the first flight phase, followed by active millimetric radar target acquisition. The weapon can be used against main battle tanks, armoured personnel carriers, self-propelled guns and mobile air defence vehicles with a highly effective target detection capability.

The flagship air-to-air product in the MBDA range is the Meteor beyond visual range air-to-air missile (BVRAAM), which is being developed to meet the requirements of six European nations (UK, France, Germany, Italy, Spain and Sweden) for a system capable of meeting current and future combat scenarios.

The Meteor is being integrated on the Eurofighter Typhoon, Gripen and Rafale, and will

also potentially be integrated into the F-35 Joint Strike Fighter.

The system is an active radar seeker that is able to engage targets autonomously in all weather, light conditions and severe electronic warfare environments.

Its long stand-off range (100km), high kill probability and ramjet propulsion system make the weapon able to defeat even challenging and manoeuvring targets.

The potential for the Meteor system within the Middle East market is significant according to Duleux. "Its capabilities are tremendous and we are currently in discussions with many customers," he said.

"It's a unique capability and this product has no competition in the market at the moment."

Evolving technologies

Lockheed Martin takes what it calls a 'delivery focused' approach to the Middle East, with a number of reliable and evolving technologies currently being marketed to the region to meet current and future threats.

Joe Garland, vice president of international business development for Lockheed Martin missiles and fire control, said the company's interests in the Middle East are currently focused on the Hellfire 'R' warhead variant, and the directional attack guided rocket (DAGR).

The Hellfire II AGM-114R multi-purpose missile is the latest model of the AGM-114. It builds on the success of the original, with the addition of semi-active laser seeker that consolidates capabilities into a single missile that is able to defeat a broad range of targets. The missile features a three-axis inertial measurement unit, which enables the engagement of targets to the side and behind without the need to manoeuvre into position; and brings increased lethality and missile impact.

The DAGR currently in low-rate production is a precision-strike munition that is capable of destroying lightly-armoured vehicles, rooms within buildings and other high-value targets. Capable of being launched from a range of aerial platforms, the DAGR has completed more than 20 successful guided flights, and has a proven accuracy from up to 10 degrees off boresight.

"Interest in these two products, in particular, is being fuelled by customers who want a precise capability against all existing and postulated threats," Garland said. "The Middle East market is very important to us and we are committed to delivering a capability that meets the requirements of our customers at an affordable price."

Between them, Raytheon, MBDA and Lockheed Martin, cover the most interesting air-launched missiles being marketed to the Middle East.

With regional armed forces demanding the most sophisticated weaponry for their inventories, the coming decade will see continued growth and ingenuity in this market as requirements become increasingly diverse and exacting.

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From Kingdom Tower in Riyadh (top left) to astonishing sculptures in Jeddah (below), with crafts and craftsmen in action – Saudi Arabia has more to it than tourists expect.

Route developers will find a Kingdom that beats expectations.

Mike Martin reports.

Pictures: Tom Gordon.

PILGRIMS AND PROGRESS

It can be said that the original form of “tourism” was to sites of pilgrimage – from Santiago de Compostela in Spain or Canterbury in England to Mecca in Saudi Arabia, the biggest of today’s pilgrimage destinations.

Some twom pilgrims a year make the journey to Mecca during the Hajj and Umrah seasons and all forecasts suggest that that figure will grow substantially in coming years.

However, conventional wisdom would have it that beyond the attractions of the Hajj, tourism plays only a small part in the travel landscape of Saudi Arabia.

Wrong.

Just as Saudi Arabia’s economy has run healthily counter to the world recession, so the idea that it is not a destination for tourists of the world is really a myth.

Continued
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BRIDGING THE WORLD



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Indeed, the country is gearing up for a boom in leisure travel, with the aviation infrastructure having been liberalised and hotel chains embarking on a major building programme.

One forecast puts the number of tourism visits to Saudi Arabia at more than 20m by 2014. Much of that will be a combination of domestic tourism and religious visitors.

The government of Saudi Arabia is encouraging the development of tourism, as it is a prime industry to generate new jobs, something of a priority in the kingdom. The government aims to create around 1.5m jobs in the tourism sector over the next two decades, a vital factor in a country with a growing young population.

A country as large and significant as Saudi Arabia is also going to encourage visitors from outside the religious and domestic groups. So what can the adventurous expect?

Riyadh, the capital, is at first sight rather utilitarian and a bit dowdy despite its size. However, it repays exploration. The gold souks next to the Musmak fort are definitely worth finding and exploring, as is the old city of Dir'iyah. The state-of-the-art National Museum is also worth a visit. The Janadriyah Festival is a national heritage site located 45 kilometres outside Riyadh.

Jeddah, on the Red Sea, is an attractive destination, with its Corniche and heritage areas. The wealthiest city in Saudi Arabia and commercially important, it is also a pleasant place to visit in its own right. Cooler than Riyadh, which is located in the centre of the country, the best time to visit is between October and May.

Beaches are the main tourist attraction in Jeddah. Durrat Al-Arus, Bait Albahar, Crystal Resort and Al Remal are just some of the wide range available.

Within the city is Balad, the old town, with its



Vivid colours and outstanding architecture await Saudi visitors.

ancient buildings and traditional souks. Work is under way to restore areas of the old town in preparation for registering it as an international heritage site. Festivals are planned for the area.

By contrast, Balad is also home to malls that make it a major attraction to shoppers keen on the best that Paris or Milan has to offer.

Other noteworthy Jeddah tourist attractions are Mecca Gate, the Floating Mosque, the Eve Cave and Al-Handasa Square.

The city also features a number of museums, including the Municipality Museum, a building of the period of the British Legation in Jeddah. Its collection features ancient artefacts and historical photos showing the emergence of the city. Other important museums are Abdul Raouf Khalil's Museum, the Castle of Cultural Arts Museum and the Islamic Fiqh Academy.

Theme parks like Al-Shallal complement the traditional attractions, such as the picturesque Jeddah Parks and Gardens, a favourite with tourists.

Beyond the major cities of Riyadh and Jeddah are a number of sites worth visiting. They include Mada'in Saleh, one of the best-known archaeological sites in Saudi Arabia. The city was carved by the Nabateans, the same people who carved Jordan's city of Petra.

Other destinations include Abha, in the south; Najran, with its traditional architecture, and the unspoilt beaches of the Farasan Islands.

The domestic aviation industry in the kingdom has been a drain on the resources of the national carrier and, subsequently, the two low-cost carriers who were required to fly public-service flights. A government investment in these routes and in the transport infrastructure will see the rewards as the tourism industry stretches across what is, till now, a masterpiece awaiting discovery.

Saudi Arabia's second airline is making a big impact.

Alan Peaford *meets the people who have revitalised the floundering start-up low-cost carrier and helped develop it into a serious international player.*

NAS – low on cost

There's nothing stuffy about Simon Stewart, the chief executive of nasair. The former Army Air Corps and UK airline pilot epitomises the vibrant and agile brand that is creating something of a revolution among young Saudi business travellers.

Nasair was created as a low-cost carrier (LCC) in 2007 but took on many of the bad habits of a legacy carrier. A new board came in to shake up the business and did just that. The headline-grabbing appointment of Maria Hanne as chief commercial officer demonstrated that the new owners were prepared to rattle established practices.

In July 2010 Stewart, the then head of safety management at easyJet in the UK, came in to challenge it some more.

The result has been creditable and research – NAS crunches numbers on just about everything – is showing that the changes are being noticed.

Although described as an LCC in some quarters, Stewart dismisses the idea. "We are more something of a hybrid," he said. "We are like a cross between easyJet in its focus on market and cost and Virgin Atlantic in the approach towards customer services. It's like a full service powered by an LCC engine.

"People have begun to see a difference when they step on our aircraft and are met with a smile and with help to get bags in the overhead bins. They value the experience of travelling with nasair. I think they are beginning to get us and understand what we mean by being a smart choice. We are a relatively small airline but we have a modern fleet offering good service with good on-time performance. It's about value for money."

Hanne, whose background includes time with Lufthansa and working as a consultant and interim

manager restructuring ailing companies, thrives on the data.

"This is key for us. We can see a much greater picture by digging through the data and we are creating greater efficiencies in the business," she said.

The airline's fleet utilisation has improved from six hours daily now to more than 10. Hanne believes 11.5 hours will be achieved in the next year and Stewart is pushing for a 14-hour target. "It is possible," he said. "We face some challenges that other budget airlines don't. For example, the monopoly on ground handling in Saudi Arabia means we have little bargaining power when we want to push for faster turnaround times."

Nasair, like its former competitor SAMA, has been hit by what both airlines had described as 'unfair regulations' set by the Saudi government.

The airlines were both forced to undertake what are called public service obligation (PSO) routes, which are effectively unprofitable domestic routings but are necessary as part of a transport infrastructure that links the rural areas with the main cities of Jeddah and Riyadh.

As a quid pro quo, the Saudi government undertook to support the airlines by matching the fuel and other costs in the same way it does with the national carrier Saudi Airlines, which had passed over the loss-making PSO routes to the new private carriers.

However, the regulations to allow this have not changed and so, while the carriers began creating a domestic network, the support never arrived.

"Some of these routes were showing a minus 20 per cent cost over revenue," said Hanne. Fares are capped by government regulation and nasair found itself having to pay for fuel at 117 per cent of the normal international price.

"We are in the ridiculous position of operating in one of the most oil rich nations in the world and yet we can buy our fuel cheaper in Khartoum or in India," said Hanne. "We are paying significantly more for our fuel than Saudia. That is just not fair."

The government has undertaken to get the regulations changed but, in the meantime, nasair has suspended some of its PSO routes and, instead, begun focusing on international connections.

"We are proud of being a Saudi company and proud of being the only privately-owned airline. We are confident that the regulation reform will happen but we are aggressively growing internationally," Hanne said.

The pride in the Saudi origin is reflected in the new look of the airline, which now features the Saudi flag in the livery.

"That's important for us. We see ourselves as being ambassadors for the new Saudi Arabia and for bringing Saudi business and Saudi culture into the places we go," said Stewart.

"We are attracting new customers all the time from across four different sectors and we have seen a 25 per cent improvement in customer satisfaction. In Europe, cost is the principle driver but here it is a combination of things.

"We call ourselves the smart choice and promote the fact that there is an alternative to the legacy carrier and one that is fresh, energetic, exciting but also reliable."

The four target groups include business, religious visitors, migrant workers and private and leisure travellers. "By not relying on a single group we have a spread of busy periods through the year," Hanne explained.



yet high on service

The NAS management team has been introducing a series of step changes among the 1000-strong workforce. Effective communication is at the heart of the change programme, with the team strongly behind the belief that shared knowledge and goals throughout the company will bring a greater buy-in to the airline's values and its mission to become a major regional player.

The emphasis on becoming more data driven means the airline will not make knee-jerk decisions to short-term events and will develop into new markets backed by sound information.

New routes in India were added in December with the airline now flying to Mumbai, Calicut, Cochin and Delhi. In 2011 it will add three new destinations in Turkey, additional routes to Egypt and to Pakistan, and Doha.

The Qatar capital could become a major route for NAS, as the airline is working towards introducing an interlining agreement with Qatar Airways, which would allow NAS passengers to travel from a secondary Saudi airport to the major capitals of the world on a single ticket."

The management team at nasair is agile and adapts and updates its five-year plan on a frequent basis. While customers are marvelling at the approach by the on-board crew, behind the scenes there is a strong focus on revenue management.

"The earlier you book, the cheaper the price," said Hanne. "But we have added some refinements where you can now select your seat online and pay a premium for a particular seat. This has gone down extremely well with our passengers."

At the same time Stewart – and the airline's COO, James Bothwell – have been working on cost-



CEO Simon Stewart and chief commercial officer Marie Hanne head the airline's new management team.

reduction and other efficiencies. "You need to be flexible and adaptable otherwise you die in this business," Stewart said.

The company is about to launch a fuel efficiency initiative aimed at savings of between three and four per cent. Improvements to the web site and the whole online and social media activities mean that the airline is developing greater engagement with its customers.

"Because of the problem we have had with the government regulations, we have had to focus harder. That has made us leaner and, by the end of 2011, we will be leaner still – and with more routes," Stewart said.

The financial performance has improved with the new team in place with revenues of SR200m (\$57m) in 2008 more than doubling to \$142m in 2009 and then around \$257m in 2010.

"These improving results mean we will achieve break-even next year," said Stewart.

The nasair fleet has two types. It has nine Airbus A320s and six Embraer E190s, having received two new Ejets in December. It will receive more Airbuses in 2012 and has a number of outstanding orders with both the French and the Brazilian manufacturers.

"The Embraers have been great for starting new routes," Stewart said. "We started them on the new route to Dubai and that has now grown so we use the Airbus. They are also good for the thinner domestic routes."

The Airbus is ideal for the longer international flights like those to India. We see five hours as our range limitations and if you draw a circle with a five-hour range that is where we will grow our business in the future."



Saudia Cargo gallops ahead with new breeds

Decades of experience has seen Saudia's freighter's in action all over the world.

Brendan Gallagher reports.

History records that the great racehorse breeds owe much to animals from the Arabian peninsula. And to this day Saudis are among the biggest equine enthusiasts in the world. So it should come as little surprise to find that Saudi Airlines Cargo includes an offering called Flying Horse among its specialist services.

Other parts of the portfolio are similarly indicative of the tastes of the well-heeled Saudi traveller. There's Flying Car for the man who can't bear to leave his favourite wheels at home, and Cargo Baggage for the lady who loves to shop on her travels but hates to drag boxes through airports.

With its nine-aircraft fleet and a network embracing four continents, the Jeddah-based company also carries more workaday cargo, including consignments for DHS, FedEx and Kuhne & Nagel, and seasonal fruit and vegetables via Cairo. It's a business that held up well at the height of the recession in 2009 and which is now showing healthy growth once more, according to chief executive Fahad Hammad.

"Though everyone suffered that year, the resilient Saudi market lessened the impact for us," he said. "We controlled costs by taking a close look at non-core expenses. And when Asia-Europe traffic fell off we switched our focus to Africa – Lagos in Nigeria, Khartoum in Sudan, Ndjamena in Chad."

Now the company's on the up again. "Our revenues for January-October last year totalled SR1.65bn (\$438m), 10 per cent better than the same period in 2009, and cargo boarded improved 9 per cent to 307,000 tonnes," said Hammad. "Revenues for the first ten months of last year comfortably exceeded those for the whole of 2009."

Though Hammad is hopeful of further growth, he points out that the recovery is by no means uniform across the globe. "Europe's sovereign debt crisis and the unconvincing

US recovery mean we have to be cautious about the prospects for those regions this year. A big part of our business – 30 per cent of traffic - is cargo moving from the Indian subcontinent to Europe and the USA, and that could be vulnerable, with possible adverse consequences for volumes and rates. On the other hand, there is strong, sustained demand from Africa and we're confident it will continue for at least two years."

The Saudi Airlines Cargo network currently comprises hubs in Shanghai (for mainland China), Hong Kong (Japan, Korea, Taiwan, Vietnam), Brussels (central and eastern Europe), Milan (Italy and Switzerland), Barcelona (Spain), New York JFK (eastern USA, Canada) and Houston (central and western USA). Other destinations include Bangkok, Dhaka and Mumbai in Asia, Milan in Europe, Addis Ababa, Casablanca and Johannesburg in Africa, and Amman and Sharjah in the Middle East.

"Along with the location of our home base in Jeddah, this network means we are ideally placed for the movement of goods to important markets at every point of the compass," Hammad said. "As a result we have plenty of confidence in our ability to attract new customers."

Close competition

Not that the company is alone in looking for new clients – far from it. "All the neighbouring carriers are in close competition with us, and in Europe there are the likes of Cargolux and Martinair," he said. "We put our faith in what we can offer. Competition is good as long it doesn't lead to a price war – we want to compete on quality of service, not the rate."

One place the company won't be going in the near future is former destination Sana'a in Yemen. "Following the recent terrorist attempt to bomb cargo flights we have strengthened our security measures everywhere and have embargoed Yemen completely," said Hammad. "Increased security is expensive but we must have ways of ensuring cargo is properly checked before we move it on. We have to accept the necessity for security - the only real downside is that it can affect the speed and flexibility of the operation."

Looking to the upside, the company has embarked on a string of route and fleet developments. Having launched new services to Nairobi and Amsterdam in December, it plans to up the Bangkok service to twice-weekly, and is studying increased frequencies to Johannesburg, Dhaka and points in China and the USA. Three brand-new services are to be introduced this year: to Ho Chi Minh City in Vietnam before the end of this quarter, and to Penang in Malaysia and South Korean capital Seoul in the third quarter.

The fleet currently comprises four McDonnell Douglas MD-11Fs, three Boeing 747-400Fs and a -200F, and an Airbus A310F. Two more -400Fs are due on the roster by the end of April. Looking further ahead, it is planned to increase the fleet to a dozen aircraft by the end of 2014: candidate types are the Airbus A330-200 Freighter and Boeing 777F and 747-8 Freighter.



nexus





“The creation of new airlines in Saudi Arabia and the arrival of others from abroad means we are taking that traffic directly. We aim to get the rest of it.”

Abdullah M H Al Tassan

Riyadh celebrates capital growth

Development at Riyadh's King Khalid Airport is leading the way among Saudi gateways.

Mike Martin
reports.

Structural work on the new terminal at King Khalid International Airport (KKIA) in Saudi Arabia is complete and the new facility should be open within two years, according to its director general, engineer Abdullah M H Al Tassan.

The new terminal is the first phase of an expansion programme designed to raise capacity at the airport from 12m passengers a year to 25m.

Current growth is running at 16.9 per cent and was expected to match the growth figure of 17.4 per cent of 2009 when the 2010 numbers are finalised, as the kingdom enjoys an economic boom despite the global recession.

Passenger throughput by October last year had already reached 11m and was expected to top the 13m figure attained in 2009, said Al Tassan.

“We continue to experience a high rate of growth,” he said. “We are already operating beyond our capacity and that is the reason behind our programme to expand our facilities.

“The new terminal should be ready within two years and it will give us room for an additional three million passengers. In reality, it will accommodate up to an additional five million.”

The total expansion plan is costing \$2.6bn (9.8 Riyals), a programme financed by the government of Saudi Arabia through the country's General Authority of Civil Aviation.

Al Tassan said that the new terminal would serve domestic flights within Saudi Arabia, “although we will use it flexibly, according to needs at the time”.

The new terminal will offer an additional 96 check-in counters, raising the airport's total to 244.

The masterplan for the expansion is aimed at maximising use of space between the famous triangular-shaped terminals at KKIA, in order to minimise the distance that passengers have to move within the airport.

Future plans for the airport include a new business aircraft facility and an “airport city” adjacent to the airport and dedicated to businesses related to aviation and aerospace.

In the short-term, extensive modifications have been made to the airport to improve flow patterns and facilities for passengers.

“We understand very clearly that we must cater for the needs of passengers and never take this growth for granted,” said Al Tassan. “So we have worked very closely with the various government agencies at the airport, immigration, police, etc, to improve the passenger experience.

“We have brought in training programmes to make sure that we improve our customer care wherever passengers are in the airport. We also redesigned areas of the existing airport to remove passenger flow bottlenecks.”

The recession saw KKIA lose some airlines but, said Al Tassan, they are starting to return. Last year saw five passenger and three freight operators either return or start up new operations.

Growth at the airport and at other airports, such as Jeddah, is being fuelled by an economic boom within the kingdom, according to Al Tassan.

“We have seen massive developments in Saudi Arabia in the last four years,” he said. “The government has launched some massive new projects, including the creation of new cities, new universities and all of the infrastructure to support these projects.

“We have also seen the wider recovery of the aviation industry after the economic crisis. We did see some traffic to Saudi Arabia begin to come through Bahrain or Dubai. However, now the creation of new airlines in Saudi Arabia and the arrival of others from abroad means we are taking that traffic directly.

“We aim to get the rest of it.”



The New King Abdulaziz International Airport

A new horizon for a new era

The New King Abdulaziz International Airport Project has been initiated under the supervision of the General Authority of Civil Aviation.

Work has already started on Phase 1 of the project and includes the building of a 670,000sq m completely new state-of-the-art airport terminal complex with a capability to operate as both a domestic and international hub and serve 30 million passengers annually. It also includes the necessary infrastructure such as roads, tunnels, bridges and parking, load centers, a high speed rail link and an automated people mover within the terminal complex.

Some of the key features of the New King Abdulaziz International Airport Project are:

- 200 check in counters plus 80 self-service booths for ease of passenger process
- Automated People Mover within the terminal to connect passengers to and from the International Hub
- Automated and secure baggage handling system
- 46 contact gates with 96 passenger boarding bridges
- Four Business / First Class lounges
- Airside airport hotel with 56 modern rooms
- Fully integrated transportation center including a train station with a link to Haramain High Speed Rail Makkah and Madinah
- Multi storey car park with 8,200 slots and special parking spaces for disabled passengers
- An advanced air traffic control tower that is more than 130m high - one of the highest in the world

This grand and complex project will be a landmark icon for the city of Jeddah and reflects the long term strategic outlook, thoughtful and forward thinking and ambitious development plans of the Kingdom of Saudi Arabia.

FOCUS ON

SAUDI ARABIA



The doyen of the Middle East business aviation scene – Saad Wallan.

*Outspoken
and passionate
about his
industry –
Saad Wallan
shares his
views with
Mike Martin.*

WALLAN'S PRIVATE VIEWPOINT

Saad Wallan likes to walk the talk. The boss of Wallan Aviation, the Riyadh-based exclusive dealer for Cessna Aircraft Company in the Middle East, likes to pilot the aircraft that his firm has been so adept at selling.

He regularly flies between his homes in Saudi Arabia and England and on to Cessna in the United States.

Wallan can also talk the talk.

A veteran of the Middle East business aviation industry, he is not afraid to speak candidly and critically of everything from the role of pilots in managing bizjets, to the failure of the organisers of the Middle East Business Aviation (MEBA) show to uphold its original plan to stage the show at different Middle East venues.

Behind his comments is an industry pedigree that is unique in the kingdom, according to Wallan. "We are the only company in the kingdom, even the whole of the Middle East, which is run by a private individual," he said. "If you look at the whole industry in the region, you usually find government backing or government involvement."

Formerly with the national airline Saudia (now Saudi Arabian Airlines), Wallan moved into the automobile franchise business before branching out into aviation in 1989. Cessna came first and last year the firm added Bell Helicopter to its portfolio when it became the Authorised Independent Representative for the firm in Saudi Arabia.

Cessna's faith in Wallan Aviation was well placed, with the Saudi firm winning a number of awards, including that for being Cessna's most successful overseas representative in 2005 when the company sold 18 aircraft.

In 2010, the figure is down to just three, but Wallan believes that 2011 should see the market recover and that his firm is best-placed in Saudi Arabia to take full advantage of it.

"We know the reasons for the market downturn," he said. "But we are hoping that 2011 will be the year where everything starts to happen again. I am confident that it will. Most of the bankruptcies will go away and we should see the economy pick up."

And he is adamant that the Saudi market has a long way to go before it reaches its full potential.

"Some 70 per cent of sales are in Saudi Arabia," he said. "This country is huge and only has limited roads available. It is three hours in a jet to cross Saudi Arabia. We have 27 airports but we are way behind the States in terms of aviation services. That is changing. Our economy is growing and there is a huge amount of business going on in the country at the moment.

"It's a very good market for business aircraft."

While Wallan takes a view on current markets, the real focus of his interest is in the longer-term structural issues that have an impact upon the business and over which he has more control.

A notable presence at the recent MEBA show in Dubai, Wallan believes that, while the event has fulfilled expectations, organisers the Middle East Business Aviation Association (MEBAA) should stick to its original mandate to cycle the event to different locations in the Middle East. To date, the event has only been held in Dubai.

Listened to closely

As a board member of MEBAA, Wallan's words are listened to closely. Indeed, while the dates for the next MEBA event have been announced, the location has not been decided. A major issue is finding a venue capable of bringing together major exhibition space conveniently adjacent to a static park for displaying aircraft. The search is on to find a potential alternative site.

"The original idea was that the MEBA event should move to different locations around the region," said Wallan. "I think we should stick to our original commitment and really find a way to stage this show at different locations."

Another area to draw the criticism of Wallan is that of business aircraft management which, he believes, can actually result in new owners becoming so disillusioned with aircraft ownership that they put their purchases back on the market.

Business aircraft pilots with limited management skills can actually damage the growth of the market, he believes. Their shortcomings cover everything from choice of MRO facilities to

poor inventory management skills. The result is that business aircraft owners, particularly new ones, are getting less than optimum value out of their investment, according to Wallan.

"This is not good for the market because owners get a bad result from their investment and they blame the industry," he said. "They buy the aircraft but often they do not hire a professional to manage it. Instead, they let the pilot do it. They should remember that pilots are not managers.

"My advice is if you are hiring a pilot and giving them these responsibilities, then you should inquire what their education was before they became a pilot.

"Pilots are paid very well but they do not have to have high education. Yet they are expected to manage everything, organise insurance, spares and so on."

Wallan, himself a pilot, cited a range of cases from his own experience: pilots choosing MRO facilities based on how well they "are looked after" by the facility; a pilot operating out of Damman, Saudi Arabia, who gets his flight planning from Houston.

"There was a pilot who had to buy a spare, so he thought he would buy two. You see pilots who go somewhere (with their aircraft) because their girlfriend is there. All of this costs money for the owner."

Wallan said that he had decided to speak out because he feared that the trend could actually hurt growth in the industry, with disillusioned owners getting rid of their aircraft.

While his own company aims to look after owners for the first six months, hiring pilots, dealing with paperwork and looking after scheduled maintenance, he would like to see the manufacturers do more.

"The manufacturers should help new owners because it is in everybody's interest that these problems do not arise," he said.

For the past year, Wallan Aviation has represented Bell Helicopter in the kingdom. Most recently, the company was carrying out demonstration flights of the light twin IFR Bell 429 for a number of Saudi Government departments.

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NAS holding the key to Saudi aerospace jobs

Careers for young Saudis and an international reputation are goals for the Kingdom's private aviation group.

Alan Peaford
reports.

In many Middle Eastern countries there is one business that creates a springboard for private individuals to develop the indigenous industry. In Saudi Arabia there is no question that this is the mantle carried by National Air Services (NAS).

Many of the key personnel from the companies that make up Saudi's burgeoning aerospace industry have cut their teeth in the offices of NAS. But, for the current chief executive of NAS Holding, the group is now about building careers within and not just act as a stepping-stone to opportunities elsewhere.

Sulaiman Al-Hamdan heads the team that has, for the past two years, set about changing the NAS companies into an organisation that can – and will – compete internationally and utilise Saudi Arabian human talent in order to achieve that goal.

"Since November 2008 we have set about turning around NAS. It is an organisation with great potential," Al-Hamdan said.

The group was established in 1999 when the Netjets-Middle East Program was introduced, but since then it has developed extensively.

There are three main stands within the holding group. The newest – and currently the highest profile – is the low-cost carrier nasair (see story page 60). Then there is the founding private aviation business, which for the past decade has seen NAS continue to operate the Netjets fractional ownership brand in the Middle East alongside its own charter business. Finally there is NAS Tech, the MRO and engineering business that has supported the business aviation activities.

Al-Hamdan has put his management in place. "We have the best team I could have dreamed of," he said. And they have enthusiastically and innovatively begun reducing the losses that have been dragging the group down.

"We have seen our losses cut from SAR900m (US\$240m) to SR180m (US\$48m) in 2010," Al-Hamdan said. "We will see nasair in profit in 2011. We have been working with the McKinsey firm to help us develop a road map for our divisions. We have made some tough decisions with the airline and our route network but it is up to the

government to change the regulations if they want us to serve throughout the country."

Al-Hamdan continued: "We cannot afford to do business that doesn't generate money for us. The airline had a bad start because of this. Also, the concept of a low-fare airline is new in the region and the perception was bad. But this is changing. Our top priority is safety and then on-time performance. People now believe we are reliable and because of that we are seeing up to 35 per cent of our passengers using the airline for business travel."

Everything in the group is up for challenge – and that includes the Netjets partnership.

Although NAS will continue to operate the Netjets business in the region, it will now operate from under the NAS Jet brand with operations centred in Riyadh, rather than Jeddah.

"Netjets has a good name," said Al-Hamdan. "But my intention is to position the private jet business more to meet local needs and considerations. We have 65 customers and so we will be modifying what we do but maintaining the core element."

NAS Tech is also seeing investment and growth. Late last year Al-Hamdan signed a contract with German MRO giant Lufthansa Technik to develop a partnership to grow NAS Tech's engineering capabilities over the next ten years.

Build up capabilities

Under the agreement Lufthansa Technik will provide engine and component maintenance services for the entire NAS fleet while NAS Tech will build up capabilities for line and light base maintenance of narrow-body aircraft, especially for the Airbus A320 family.

This move paves the way for investment in both infrastructure and people.

At its home airport, the King Khalid International Airport in Riyadh, NAS is currently investing to establish maintenance facilities, including a hangar and a maintenance workshop. Lufthansa Technik will begin training NAS Tech maintenance staff to get technical expertise based on international license standards.

"We have three clear goals with NAS Tech," said Al-Hamdan. "Firstly it is to provide the best service to our fleet; secondly to look at the market to enable us to provide third-party services to other operators in the region; and thirdly, and importantly, to enhance the knowledge of young Saudis to work on aircraft engineering and maintenance."

Al-Hamdan said the group would also continue to look at its aircraft needs, both for the commercial airline and for the private jets business.

Currently Netjets has 16 aircraft in operation and 60 additional aircraft on order alongside management and operations contracts for more than 50 government, corporate and private aircraft. The NAS commercial fleet has 12 aircraft with outstanding orders for 37 more to join gradually until 2016.

"If the domestic market changes we could be looking at turboprops to serve parts of the region," said Al-Hamdan. "And we are all now very positive about the future for NAS."



Sales teams need local knowledge, warns Al Zeer

Mohammed Al Zeer, chairman of MAZ Aviation, has words of advice for Western manufacturers and business aviation service providers who arrange sales tours with an aim to breaking into the lucrative Saudi Arabian market – think and act local.

Al Zeer, hit the global aerospace headlines in May 2008 when he placed a record-breaking launch order for six Airbus A350s in VIP configuration, said that the Saudi Arabian business aviation market is in good shape and that there are huge opportunities – but companies need to be in the country or the region and not just dropping in on sales visits.

“We are successful because we know and understand the culture of the region,” Al Zeer said. “We also know what our customers expect. Too often people come with a perception based on stereotypes of what a ‘rich Arab’ would want. Too often those perceptions are wrong.”

MAZ operates as a consultancy to assist high-net-worth individuals in selecting the right aircraft for their needs – a move that has seen the Jeddah-headquartered company introduce its own design team.

“We start off by finding out what the customer wants and then help select the aircraft – not the other way round. We then help with the acquisition and the finance as well as the design and managing the process at the completion centre,” Al Zeer said.

“We understand the culture and recognise the cultural subtleties that are lost on people coming fresh from the States or elsewhere.

“We can then focus on getting exactly what it is the customer needs. We also understand about cross-border issues and the regulatory issues that need to be addressed.

“Finance has been important, particularly in recent years. We have developed solutions that satisfy the international banking community, for example regarding the critical issue of repossession clauses. The Saudi civil aviation authority (GACA) has been fantastic in looking at the previous constraints and letting new ideas develop.”

Al Zeer puts the company’s success down to its individual approach. “We look at things differently,” he said. “We are not selling a product; we are

addressing a request that is driven by the VIP’s needs and wishes.”

MAZ Aviation currently has more than \$3 bn worth of projects and, while admitting that there was a flattening in the market in some areas during the recession, there has been a number of people in the Saudi market who have taken advantage of opportunities.

“We stood by our customers who had to make changes,” Al Zeer said. “But remember Saudi Arabia

has been in the business aviation market for as long as the Americans.

“We have owners who have had business jets for more than 40 years. Many of them take the opportunity to replace their aircraft when the prices are better in a downturn.”

MAZ does not advertise or get involved in marketing campaigns. Its client base consists of private individuals and government. “We work on recommendations by word of mouth,” Al Zeer said.



Mohammed Al Zeer:
Growing success.



Abdullah Al-Sayed:
“Our customers will appreciate our high quality training.”

Alliance targets training of Saudi nationals

Nexus Flight Operations Services – a subsidiary of MAZ Aviation – and FlightSafety International have signed an agreement to establish an aircraft dispatch training programme in the Middle East which will aim at helping to develop a high number of Saudi nationals who are looking at careers in the industry.

“The Middle East aviation industry is growing at a very high rate and professional training is key to support this growth,” said Abdullah Al-Sayed, president & CEO of Nexus.

“We are very excited to collaborate with FlightSafety International, the world’s premier aviation training provider.”

The company has already opened a training facility alongside its flight operations centre in downtown Jeddah, and will be offering the same course in the high-tec facilities it has in Manama, Bahrain.

Al-Sayed said: “Our customers will appreciate our high quality training and the support provided as we work together to enhance aviation safety in the region. Bringing the very best aircraft dispatch

training to the Middle East will help to increase safety and efficiency among the growing number of aircraft owners and operators we serve.”

Nexus has looked carefully at potential partners before making the deal with FlightSafety.

Founded in 1951, FlightSafety offers more than 3,000 courses for pilots, maintenance technicians, dispatchers and other aviation professionals.

The aircraft dispatch training which is offered in Jeddah and Bahrain will be taught by FlightSafety International’s highly qualified instructors.

“The course is designed to help to prepare students to contribute to the safety and efficiency of commercial and business aviation flight operations. The classroom and practical training focuses on specific tasks that dispatchers routinely perform and provides the knowledge and skills required to accomplish them,” Al Sayed said.

Those who successfully complete the training will receive a globally recognized FlightSafety International Aircraft Dispatch certificate.



Arabian Jets

الطائرات العربية

SAFE | SMART | AVIATION

Arabian Jets is the lead company in Saudi Arabia dedicated in the following aircraft services:

- **Digital Records (Scanning Bureau)**
- **Technical Acceptance**
- **Engineering & Maintenance**
- **Operational Management**
- **Sales & Acquisition**
- **Block Hours Program**

Mike Martin
*meets the
 company that
 plans to
 dominate the
 private charter
 business.*

SPA DEVELOPS A NOSE FOR THE CUSTOMER

Every month the top team at Saudia Private Aviation (SPA) hold a special meeting with only one item on the agenda – to review customer complaints.

The issue might be as simple as the customer who was dissatisfied with the food because it contained a spice he did not like, but nothing is too trivial to be addressed by the senior executive team led by Wajdi Al-Idrissi.

It's this kind of attention to detail that has seen SPA – currently marking its first year of highly successful operations – create a base from which it is already looking to expand.

Focus and understand

“Our vision was to create an operation which was of a very high level,” said Al-Idrissi. “So part of the process is to study and understand everything that our customer does not like. And we change it, so our customers understand that we think of their needs and are focused on them all of the time.”

The same relentless attention to detail can be found in the area of pilot training and flight safety, an area that comes under the remit of Saleh Mohammed Albayoumi.

He has an unrelenting approach.

Under his command, no pilot gets behind the controls of a SPA aircraft unless they can demonstrate full proficiency in manual



Wajdi Al-Idrissi: “Our customers understand that we think of their needs and are focused on them all of the time.”

operations. Cadets who fail courses are required to re-take them – at their own expense.

“Safety is the rock on which all operations are based,” he said. “We operate to airline standards and there is no compromising on any area of safety. There is so much automation in modern aircraft that makes life easy for pilots. But we insist that they demonstrate complete proficiency in manual flight mode.

“We insist on pilots who are completely comfortable flying the aircraft and not just comfortable operating computers.”

Grounded its fleet

That philosophy was exemplified when an airworthiness notice on Hawker 400 XP aircraft, of which SPA has six, was issued. SPA immediately grounded its fleet while checks were carried out. However, other operators continued to operate their aircraft – and that led to an interesting situation for SPA, which had a senior government official travelling.

Al-Idrissi took a call from the irate government official who was temporarily stranded but had seen Hawkers, operated by other companies, still flying.

“He was not happy,” said Al-Idrissi, “but I explained that we never compromise on safety. No compromises. Ever.”

It's on this philosophy that SPA has recorded

Wajdi Al-Idrissi flanked by colleagues Saleh Mohammed Albayoumi and Faisal Abdulaziz Al-Saddik.



an excellent first year and created a platform for an aggressive growth strategy and an ambition to own or manage ten per cent of Saudi business aircraft, which is expected to grow to 1,200 by 2020.

The Jeddah-based operation is currently a subsidiary of Saudi Arabian Airlines and operates a fleet of Hawker 400 XPs (six) and Dassault Falcon 7Xs (four).

At the end of 2010, SPA made its debut at the MEBA Air Show in Dubai, using the occasion to begin researching aircraft types to begin a long-term fleet expansion. Its priority is to identify suitable mid-size aircraft candidates to fill the gap between its existing fleet types. It is also beginning studies of business aircraft with between 25 and 40 seats, with a view to acquiring between two and four.

“In the future we intend to fill the gap between our Hawkers and our Falcons and we used MEBA to start looking at potential candidates,” said Al-Idrissi.

“At this stage are looking at mid-sized aircraft and would expect to sign something in 2011. We also need up to four aircraft in the 25-40 passenger category.”

Achieved our goals

Al-Idrissi said that SPA, set up as a subsidiary of Saudi Arabian Airlines, had had a very good first year of trading. “It has been excellent and we achieved our goals,” he said. “In our first year, we have already reached around 270 different customers flying with us.”

But, he added, the best is yet to come, with a packed agenda for the coming year when SPA will

be floated off from parent company Saudi Arabian to become a stand-alone operation.

Al-Idrissi said that he expected SPA to need two additional Hawker 400 XPs in 2011. “There have been times when our capacity has been stretched and so we could see the need for new aircraft.”

By 2020, he sees SPA attaining responsibility – through ownership or management – of some 120 aircraft in the kingdom. The country currently has some 450 business aircraft.

“In business aviation terms, Saudi Arabia is a virgin market,” said Al-Idrissi. “It is a huge country with 27 airports. We have a very strong economy and there is a lot of economic activity going on, including the building of new cities.

“High quality business aviation has a very important role to play in this.”

“We can communicate between the two parties and manage the aircraft to achieve the highest levels of safety, regulatory compliance and cost-effectiveness.”

Anas Rayes

Communication the essential ingredient in maintaining relations...

Saudi Arabian business/VIP aircraft management provider Arabian Jets has moved into a facility at Riyadh’s King Khalid International Airport and plans to have a MRO capability for Hawker Beechcraft King Air turboprops up and running by the end of 2011.

“It will be the only location for King Air A and B checks in the entire Gulf Co-operation Council region,” said company president Anas Rayes, who was managing director of Netjets Middle East and a co-founder of Saudi low-fare operator NAS before setting up Arabian Jets in 2007.

“We’re putting in place everything needed for the King Air checks,” he added. “We took possession of the hangar last November. The manpower is in position and the facility is now being outfitted with tools and other equipment.”

Arabian Jets added operations to its original portfolio 12 months ago to create a full aircraft management service and now has a total of 19 aircraft on the books. Types include the King Air, other Hawkers, Bombardier Challengers, Gulfstreams and a Boeing BBJ.

At present the owners are all Saudi, both government and private. But an Egyptian-owned aircraft will be added this year: “We are carrying out acceptance of a new aircraft for delivery in March, when it will join our managed fleet,” confirmed Rayes.

He added: “The core of our management offering is our powerful technical capability – we know every line of the manuals. Far from being just

a messenger between the owner and his MRO, we’re fluent in both languages – the requirements and cost concerns of the owners, and the formal demands of the aviation regulators. We can communicate between the two parties and manage the aircraft to achieve the highest levels of safety, regulatory compliance and cost-effectiveness.”

With a total of 48 engineering, operations and administrative staff, excluding flight crew, Arabian Jets has representation in Beirut and London as well as the main locations in Jeddah and Riyadh. “We have exceptionally strong technical credentials,” said Rayes. “Each of the main technical aspects – powerplants, structures, systems, aircraft acceptance – is managed by a dedicated director and his team.”

First in the Middle East

The company is certificated for FAA Part 135 (charter) operations and began its push into MRO with an application for Part 145 (repair station) status last year. And Rayes is especially proud of the company’s unique Part 91 (US airspace) approval: “We’re the first in the Middle East to obtain FAA approval to act as a Part 91 operator rather than manager,” he said. “The FAA recently stopped granting Part 91 management certification; companies seeking to work in that environment must now get operating approval and do things like producing maintenance manuals and other documents.”

Part 145 approval will open the way for Arabian Jets to complete its first step into MRO. But Rayes is in no hurry to take the second step for the time being. “C-checks and beyond involve a much heavier activity and level of detail, requiring more sophisticated and costly equipment and manpower,” he said. “You have to do a lot of research into things like the size of the market before you make such a decision.”

Long-term groundwork is under way, however, in the form of contacts with two leading business jet manufacturers. “At some point we will probably have to choose between horizontal and vertical diversification,” said Rayes. “Whether to develop a full capability up to D-check for a single manufacturer, or to offer A and B checks across a number of different OEMs.”

Arabian Jets’ advance into the MRO world is the latest step in an evolution that has seen the company enter into two capability-enhancing alliances with British companies in the last couple of years. In 2009 it teamed with design and certification provider aeroDAC, and in April last year it signed a similar deal with engine asset management specialist TES Aviation.

The aeroDAC relationship covers the provision of certification, training and consultancy services in the Middle East and North Africa. TES Aviation supplies airlines and lessors around the world with total engine support services. Arabian Jets is promoting the offering in the MENA region.



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Three-pronged approach points

Set up 20 years ago as an offset company under the US-Saudi Peace Shield command, control and communications programme, Alsalam Aircraft is now a multi-faceted company with three current main lines of business.

At last December's Middle East Business Aviation show in Dubai it announced a push to take on the world's leading providers in the VIP completions market (see stories page 6 and page 112). Chief executive Mohammed Fallatah revealed that he was talking to a couple of potential customers about a Boeing 757 and a C-130 and aimed to win widebody business through the newly cemented relationship with VIP consultancy and design agency MAZ Aviation.

But until these prospects firm up, the Riyadh-based company will continue to make its bread and butter from airframe maintenance, repair and overhaul, both civil and military. The tripartite nature of the business is evident in Alsalam's facility at King Khalid International Airport, where it has three 5,300sqm hangars – one each for the VIP activity, commercial MRO and

military operations, particularly heavy maintenance of the Royal Saudi Air Force's F-15 Eagle combat aircraft.

"Military is still very much our core business," said Fallatah, who trained in electrical engineering in the USA and spent 17 years in maintenance management with Saudi Arabian Airlines before joining Alsalam. "But we also want to get into VIP completions in a big way."

Heavy check level

Alsalam's military activities encompass maintenance up to the heavy check level for most of the types currently operated by the RSAF: the F-15 and Tornado fast jets, E-3A AWACS, KE-3A tanker, AH-64 Apache and UH-60 Black Hawk helicopters, and C-130 transport. Fallatah also has high hopes of being involved with the Air Force's BAE Systems Typhoons. "We look to be part of supporting the Typhoon once it is fully established with the RSAF," he said. "We already do heavy checks of the Tornados in co-operation with BAE Systems at Dhahran."

In the meantime, Alsalam's military business

has already received a massive boost in the form of a new five-year, SR1.5bn (\$400m) contract for support of the RSAF's existing F-15 fleet. "It's our biggest contract ever from the Saudi government, and it includes both Programmed Depot Maintenance (PDM) heavy checks here and supporting the aircraft in the field, at the bases," said Fallatah.

The RSAF is also in the middle of procuring a fleet of 84 new F-15SAs, and planning to upgrade its existing F-15Ss to the SA standard. "Any RSAF aircraft purchase presents an opportunity for us, both during the acquisition and in subsequent support activities," comments Fallatah. "We hope to play both roles – in the acquisition through our partners Boeing and the US Air Force, and then in supporting the aircraft once they are here in the kingdom. Possibilities in the acquisition phase include some kind of work content, manufacturing of components perhaps."

At the King Khalid site the present jewel in Alsalam's military crown is the F-15 PDM hangar, set up in 2001 to receive Eagles coming in after eight or nine years of front-line service, the



the way ahead for Alsalam

The RSAF 70-strong F-15 fleet is the cornerstone of Alsalam MRO work, says Mohammed Fallatah.

exact interval being driven by the life of the anti-sloshing foam in the fuel tanks. Equivalent to a D-check in the commercial world and carried out by a dedicated staff of more than a thousand, some 660 of them Saudis, PDM is about as thorough an overhaul as an aircraft can undergo.

The Air Force's 70-strong F-15S fleet is currently cycling through the facility, with seven aircraft being worked on at any given time. Each airframe is stripped of its systems and its wings removed in preparation for high-pressure water cleaning of all major structures. Cracks and corrosion – the air at the RSAF's Dhahran base is exceptionally salty – are repaired, and the airframe is reassembled and reunited with its systems.

A series of ground checks – flight controls, fuel system leak tests – is followed by a functional check flight (FCF) by a specially rated pilot from the aircraft's home unit. The Alsalam team prides itself on the fact that to date 18 per cent of the aircraft have been accepted after a single FCF, with the great majority needing no more than two. Acceptance is followed by repainting in the company's own shop. Average aircraft transit

time through PDM is 95 days compared with a contract stipulation of 117 days.

On the commercial MRO side, Alsalam Aircraft appears to have reached a crossroads. Until recently the company competed to some degree for airframe work with Jeddah-based Saudi Arabian Airlines Technical Services, which also held a 25 per cent stake in Alsalam. But the airline MRO is about to privatise in preparation for an assault on the international third-party market, and has given up its stake to avoid potential clashes of interest.

Execution of a strategy

Alsalam appears to be engaged in a similar deck-clearing to facilitate execution of a strategy focused on military MRO and VIP completions. "We'll stay in commercial to maintain the licences and competencies we need to support our VIP activities," observes Fallatah.

The company's existing commercial operation will certainly provide a sound springboard for its VIP ambitions. Able to accommodate aircraft up to Boeing 747 size, the Riyadh facility can handle

narrowbody and widebody C and D-checks, ageing aircraft inspections, corrosion prevention and correction, avionics and communications upgrades, and exterior painting.

Specialised capabilities include non-destructive testing – the laboratory is equipped for penetrant, magnetic-particle, eddy-current, ultrasonic, radiographic and several other techniques – and repair of composite structures. The Alsalam autoclave can swallow composite rotor blades and wing surfaces up to 21ft in length. And if a project requires the fabrication of components from scratch, the company can call on a machine shop with a wide range of numerically controlled tools.

Mohammed Fallatah has headed Alsalam for the past six years and shows no sign of losing his appetite for the job. "The company came into being under the offset model – it was helped to get up and running by means of things like sole sourcing," he said. "But now we're on our own, operating as a full commercial entity, and competing for all the business we get. We're profitable, we pay dividends and we're growing – the sky's the limit."

SPEED MERCHANT...

Brendan Gallagher meets
the former fighter pilot
who has a new role.

Yahya Al-Saadi has spent most of his working life travelling as fast as anyone but an orbiting astronaut. For nearly 34 years he flew combat aircraft for the Royal Saudi Air Force (RSAF), chalking up an exceptional tally of 4,000 hours on hot ships like the F-5 Lightning, Tornado and F-15 Eagle. He flies a desk these days, but his interest in speed remains undiminished.

As chief executive of the Riyadh-headquartered Al-Raha Group for Technical Services (RGTS), his responsibilities include ensuring that clients like the RSAF, other Saudi government agencies and a growing contingent of civil aircraft operators receive spare parts consignments punctually to the contracted minute, and that repaired and refurbished items are returned in record times.

Founded in 1986 and operating from six sites across the kingdom, RGTS specialises in supply-chain management – it has warehouses in all the main cities – along with repair and refurbishment of ground equipment and special-purpose vehicles, and system design and integration. Most of its 700 staff are located in Saudi Arabia, but it also has representation in Atlanta, Georgia, and is opening more offices in the USA, plus the Gulf states and Europe.

The most recent in a series of high-profile supply-chain contracts secured by RGTS cover spares for the F-15 combat aircraft for the RSAF and, as a subcontractor to BAE Systems, for the growing Typhoon force. “We also support the other types operated by the RSAF, including the Pilatus PC-9 and BAE Systems Hawk and Tornado IDS and ADV,” said Al-Saadi.

This aspect of the business is underpinned by relationships with several leading suppliers, including GE Aviation (for military engines, spares and test equipment), Boeing (F-15SA), Northrop Grumman, Samsung Techwin (engine repair and overhaul) and AAR Corporation (supply-chain management, mobility equipment such as containerised workshops)

“We call our parts service Prime Vendor Support,” said Al-Saadi. “We buy the parts, stock them in our warehouses and deliver them within

the contracted time, and the customer pays following delivery and acceptance. This requires a significant investment on our part, but gives our customers full control of their cash flow. The more customers you have, the easier it is to offer the service. We’re now talking to three potential airline customers. We also have informal parts deals with small airlines and business jet operators.”

The RGTS systems design and integration capability grew out of a requirement by some supply-chain customers for high levels of item traceability, consignment tracking, financial control and security.

“We have put together off-the-shelf hardware and software and modified them to meet the needs of individual customers,” Al-Saadi explained. “The resulting solutions allow us to do things like tracking work processes and locations, invoicing by repair sources, and pipeline tracking.

Our staff know where every part is minute by minute, and can tell who was responsible in the case of loss or damage.”

Ground equipment passing through the company’s workshops includes bomb-lifters, runway sweepers, fire trucks and the arrester gear fitted to runways used by high-performance military aircraft.

RGTS is unscathed by the recession. “We felt no effects because our customers’ need for a high-quality solution never went away,” Al-Saadi said. “We have held our value and indeed grown over the past couple of years, and we expect to do even better over the next two or three. We’re talking to customers now about additional business.”

The second pillar of the RGTS approach is an unremitting effort to hire and retain the right kind of people.

“It’s an effort to find properly qualified people - CVs don’t always tell the whole story,” said Al-Saadi. “We need people who are loyal, willing to learn, adaptable to our way of doing things, hard-working and ethical. So we invest time and money into sending representatives to meet candidates face-to-face, and we subject them to written and on-the-job tests.”

The company has its own training programme for graduates from industrial high schools, technical colleges and technical universities. “We train them for a year, then they can choose to stay with us or move on to another company. We believe in promotion from within: one of our Saudi graduate trainees will soon take up his post as a site manager, with responsibility for nearly 30 people.”

Al-Saadi is committed to the ultimate “Saudisation” of his workforce by steadily reducing dependence on foreign expertise: “We currently have 19 different nationalities on the staff. Some 37 per cent of our employees are Saudi nationals and our target is 100 per cent. But that will take time, effort and money, and we won’t compromise on performance for the sake of the principle.”

Summing up the RGTS philosophy, Al-Saadi sounds like the airborne commander he once was. “In the life of the business we haven’t lost a single customer,” he declares proudly. “We’re seeking a long-term relationship with each customer, and for that you must have his interest at heart - not just take the money and run.”



Yahya Al-Saadi: still high flying with a fast and accurate service.

Gulfstream's big part in Sogerep growth

Keeping business aviation moving in the Kingdom.

Khalid Al-Sadhan:
fleet expansion.

From its offices within sight of the landmark Kingdom Tower in the Saudi Arabian capital Riyadh, Sogerep Aviation runs a spares and support operation that includes, among its prime customers, the local Gulfstream fleet as well as aircraft from the Savannah manufacturer that need parts as they pass through the kingdom.

Sogerep's Gulfstream customers include the medical services department of the Saudi Ministry of Defence and Aviation, which operates a G-IV and two G-Vs, and national oil company Saudi Aramco, operator of one of the world's largest corporate aviation fleets.

As well as a couple of Gulfstream G-IVs, the company has a Boeing 767-200ER, a 737-800 and, added to the fleet last year, a Hawker 900XP and a trio of Embraer 170s.

"We expect this part of our activities to grow significantly as the Saudi Gulfstream fleet expands over the next few years," said executive VP Khalid Al-Sadhan. "A recent report from consultants Frost & Sullivan described the potential for business jets in the Middle East as huge. This region contains three per cent of the world's high-net-worth individuals – about 250,000 people. They are the potential Gulfstream users that we hope to serve."

He continued: "We formally represent Gulfstream for the supply of spare parts and support, and over our 30-year history we have developed close relationships with a number of other aircraft manufacturers, both fixed-wing and helicopter."

Sogerep customers operating other fixed-wing types include Saudi Arabia's National Commission for Wildlife Conservation and Development, which uses aircraft to support its management of the country's wildlife reserves.

The company's rotary-wing interests include a contract for provision of support for Sikorsky types, and the majority shareholding in the Helicopter Arabia joint venture, which provides flight crew, maintenance and instructor training.

The heart of the Sogerep spares network is its logistic support centre in Dhahran. With a staff of 20 people, more than 3,000sqm of warehouse floor space and a computerised inventory control system, the centre holds stocks valued at up to \$2m at any one time. The company offers exceptionally quick turn-round for spares orders, along with component overhaul and repair and warranty services.

"We plan to expand the centre's capacity this year, increasing the spares holding by up to 30 per cent with a view to increasing our market share in Saudi Arabia and among the other Gulf Cooperation Council countries," said Al-Sadhan.

The company holds spares for use by operators inside the country and also for onward supply to international customers.

"The import/export part of the business is greatly facilitated by our bonded warehouse status, unique to Saudi Arabia, which allows us to move spares quickly and efficiently to international customers anywhere in the world," explained Al-Sadhan.

Crisplant bags new office in Jeddah

Crisplant has opened an office in Jeddah to provide rapid deployment of advanced, high-speed baggage-handling systems to airport customers throughout the Middle East.

Klaus Schäfer, managing director, Crisplant, said: "Significant investment is being made throughout the Middle East in developing the infrastructure to support growth in air passenger numbers and air freight. The new Jeddah office brings Crisplant's global expertise closer to our customers in this region."

"As a key partner in developing efficient and secure high-speed baggage-handling systems, Crisplant combines state-of-the-art technology with a fast response from a local workforce, allowing airports to meet tight timescales during this strategically important time in the region's economic development."

The office builds on Crisplant's existing presence in the Middle East, where one of the company's projects has been to design and install the complete \$123m baggage-handling system for the New Doha International Airport in Qatar.

It also has a \$67m five-year contract to provide full service and maintenance contract on the system.

This major installation required a wide range of equipment to handle and sort around 19,500 items of luggage per hour, providing capacity for 20m passengers per year.

Privatisation a platform to

Brendan Gallagher *visits an MRO operation in Jeddah that has aspirations to be the best in the business.*

Saudi Arabian Airline's in-house engineers shoot for the stars – and the organisation's leadership team has no doubts that the soon to be privatised business will be rated among the best in the industry.

"We aim to be a major player," said Ali Milaat, managing director of what will be known as Saudia Aerospace Engineering Industries (SAEI). "As the biggest, most capable MRO operation in the region, we have tremendous capacity that up to now we have not made available to the open market."

Currently a wholly owned subsidiary of the Saudi national carrier, the Jeddah-headquartered company is due to be privatised in the third quarter of this year. The move will introduce significant new ownership from outside the airline, usher in a formal change of identity to Saudia Aerospace Engineering Industries (SAEI), and fire the starting gun for a campaign to significantly grow third-party business.

Fully independent

"We expect the company to be fully independent and operating at arm's length from the airline some time after the middle of the year," said Milaat. "Saudi Arabian Airlines will retain a majority stake, but around 30-40 per cent of the shares will be in other hands, so our relationship with the airline will be rather different."

Heading an organisation with 5,300 employees and deep expertise in airframes, engines, components and ground support equipment, Milaat draws his inspiration from the story of Emirates airline.

"Twenty five years ago everyone laughed when they described their plans – nobody's laughing now," he said. "We have similar ambitions. First we want to win home base by further developing our infrastructure to support expansion. Then we're going to compete with the major international players on their own turf."

Milaat pointed to a number of existing strengths that will help SAEI to run with the big boys in the future. "We're highly mobile, with the ability to recover AOG aircraft wherever they are in the world. Our on and off-wing engine maintenance is second to none: we can repair and return a GE90 faster than anyone in the world. And because of the harsh environment here we



First we want to win home base by further developing our infrastructure to support expansion. Then we're going to compete with the major international players on their own turf."

Ali Milaat

have a lot of experience in monitoring the health of engines and ensuring that they are protected to the maximum."

He also sees the company's geographical location as a unique selling proposition. "We are the only provider with such a high level of capability between Europe and the Far East. Compared with the big international players, we enjoy the advantage of having our physical resources and personnel already established here. It's an expensive business maintaining your people in locations far from your home base."

While air transport is and will remain the company's prime focus, it has its eye on attracting more business from the business/VIP sector as well.

"We have served private aviation for as long as Saudi Arabian Airlines has existed," said Milaat. "But we did it in the context of our service to the airline. Now, as we separate our enterprise from the carrier, we will take with us the ability to provide full maintenance support for a much broader customer base of private operators."

Collision course

Due for introduction about two years hence, the offer will put it on a collision course with incumbents like Jet Aviation and Arabasco. "We aim to dominate the Saudi domestic market and also to address the regional market," said Milaat. "The population of private jets registered in Saudi Arabia exceeds 900 aircraft, and they all need taking care of. We intend to give the owners of these aircraft an alternative to their present suppliers."

The company's credentials include years of experience with business jets, notably Gulfstream, Dassault Falcon and Cessna aircraft, and a deep capability supported by the existing air transport business. "When we talk about maintenance, we mean total fleet management, not just line maintenance, tire-kicking and

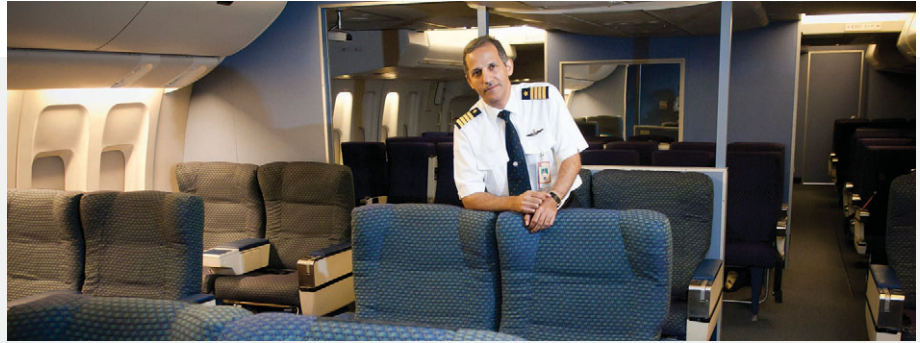
progress

dispatch. We can do modification control, tracking the aircraft, tracking their parts, all based on the largest engineering entity between Europe and the Far East.”

Annual revenues for Saudi Arabian Airlines Technical Services currently stand at SR5 bn (\$1.3 bn), a figure that Milaat expects to see grow appreciably over the next year or two on the strength of, among other things, recent internal efficiency improvements. Beyond that, the newly reborn SAEI's prospects for further growth could depend on whether the company chooses to compete or collaborate with the big outsiders circling the region.

Milaat prefers the latter. “We would rather become a major player on an alliance basis,” he said. “We're still looking for the right platform, and we expect that to become more obvious once we have gone private.

“We already have limited agreements relating to component support in place with Air France Industries and Lufthansa Technik, who share our view that an environment of partnership is the right way ahead.”



Campaign success: Captain Khaled Omar Jaad.

Aggressive strategy pays off for Academy

What a difference a name change makes! In its previous incarnation, the Prince Sultan Aviation Academy was known as the (Saudi Arabian Airlines) Flight Operations Training Centre and was a worthy department focused on meeting the training needs of the national carrier.

Now, known as the Academy, it is aggressively marketing its services throughout the Middle East and further afield.

According to Captain Khaled Omar Jaad, manager, flight safety training, the campaign has been highly successful, with a dozen airlines signed up on training programmes.

They include Onur Air, Hellenic Airways, Phuket Air and Gulf Air.

“We offer the most advanced facilities across all types of training,” said Jaad. “Also, it is a lot cheaper to come to Saudi Arabia for training. We offer accommodation as part of the package. Since we became a strategic business unit, we have been very active marketing our services throughout the region and further afield.”

The industry-wide liberalisation process in Saudi Arabia that led to the creation of strategic business units within Saudi Airlines also saw the creation of nasair. The Academy has picked up the new airline's training needs as well.

The Academy's extensive campus in Jeddah features a wide range of cabin and cockpit simulators. It includes the biggest full-motion hull in the region. The 80-person cabin is used for simulating a range of emergency procedures.



PILOT TRAINING THAT
FOCUSES ON THE FUTURE...



DA42 New Generation



DA40 New Generation



HK36 Super Dimona



DV20 Katana



Captain William Roe looks at the future plans for Saudi pilots.

If Saudi Arabia's growing need for pilots is to be met by nationals then training is vital.

Alan Peaford
meets the team making it happen.

Constructing a SAFA way to fly

The airstrip at Thumamah is less than 15 nautical miles from Riyadh's King Khaled International Airport. The approach roads are guarded at the intersection of the main highways – a throwback to the times when the military airport was primarily used for the private comings and goings of the late Saudi ruler, King Khaled.

Today sand blows across the taxiways and His Majesty's palace, like the old military buildings alongside it, remains boarded up.

But within months the airport will become a positive hive of activity as ambitious plans to build a national centre of aviation training by the influential Saudi Aviation Club and construction giants Binladin Group become a reality.

Gazing across the site is Captain William Roe who, as head of Binladin's aviation activities and the managing

director of the new Saudi Arabian Flight Academy (SAFA), is tasked with overseeing the project and opening a new chapter in the kingdom's aviation aspirations.

Roe is a graduate and a former instructor and flight evaluator from the world-famous Embry Riddle University in the United States. He first came to the Middle East from Texas to set up the ill-fated DAE academy in Dubai and had been establishing a first-class flight training school in Ras Al Khaimah when the money ran out.

"It was a great shame as the potential was there. There is an incredible need for pilots in the Middle East and there was the opportunity to produce a world-class training operation," he said.

"That opportunity has been taken up by Saudi Arabia with a genuine intention to

Continued
on Page 85

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CONTINUED FROM PAGE 83

support the country's needs in the industry. It is an incredibly exciting time and wonderful to be operating with people who want to make this work for the benefit of Saudi nationals. The whole idea of aviation outreach is seen as important. This gives us an opportunity to engage with the Saudi youth and get them excited about our industry."

Within a year Thumamah will be home to the first intake of cadets and students, who will be planning for either a professional career as airline pilots or just wanting to take up the opportunity to join in the growing general recreational flying activities across the kingdom.

"Since we first announced the SAFA the applicants have been almost evenly split between those who want to be professional pilots and those that already have careers but want to learn to fly. That is tremendously healthy for the country," Roe said.

Feel of a university campus

Binladin Group is starting work imminently on the 50,000sqm academy that will have the feel of a university campus when it becomes operational this time next year.

SAFA will be the only flight training academy in the kingdom to offer a hybrid mix of technically advanced training aircraft and simulation to meet the individual student needs. It has 20 aircraft on order and 12 simulators.

The first two of the Austrian-built Diamond aircraft have already arrived at Jeddah, where they are being put through their paces by the skeleton SAFA team, which is currently recruiting flight and ground school instructors as well as testing training and administration software from a villa in the city.

The curriculum will be approved by GACA – the kingdom's civil aviation authority – and will introduce the students to the holistic requirements that tomorrow's pilots will need.

"Safety Management Systems are becoming a



Diamond Aircraft are at the heart of SAFA's flight training, utilising the latest glass screen and monitoring technology.



vital part of the airline industry and it is a core business process for the academy," Roe said. The facility will also focus on crew resource management (CRM).

"The flight deck can be a tense place. We will be developing a pressure-cooker situation in the sims and working with the cadets to understand the way their decision making worked. We are making use of technology to ensure they get an effective debrief," explained Roe.

The technology has extended to the aircraft – both single-engine Diamond DA40 NG and the twin DA42 NG have been especially adapted by Diamond Aircraft to meet the needs of the harsh summer climates of Saudi Arabia and to enhance the learning experience.

Each aircraft has powerful air conditioning. Mounted in the ceiling panel above the pilot's head is a sophisticated system which records the entire training flight, including communications, so the student can go back over the flight with the instructor and take away the recording after the debrief to review his actions.

Students working together

In the accommodation there will be 100 study/bedrooms to be shared by the students and instructors, and staff will also live on campus.

Phase two of the development sees retail space being included and there are recreational facilities and 24-hour access to library and study areas.

"We see students working together – exactly as they would on the flight deck," Roe said. "That is a key thing. We are adopting an airline-style programme, right through to the uniforms. There will be a chief pilot from the group who will also help others to study."

The course will last 13 months and will see the students generating 244 hours of logbook time and nearly 700 hours in ground school.

The glass cockpit of the Diamond Aircraft (it uses the Garmin G1000) is similar to those found on light business jets and makes a transition to jet flying much easier.

Certainly, the need for more pilots in the region means the SAFA launch is timely.

"The latest figures indicate that, given the attrition rate in air crew and the current supply of trained pilots, the Middle East will need about 20,000 new pilots over the next 10 years," Roe said.

The centre's initial intake will be 36 students, growing to 200 per annum over the next five years. All trainee pilots will face mandatory initial screening (personality, psychometric, panel interview) and English language proficiency tests prior to acceptance.

"We will be working on aviation English with the students and are developing a communications lab as well, so as they can be really proficient with use of the language for communications with air traffic controllers internationally," Roe said.

"It is our mission to produce a world-class centre of pilot training and fuel the growth of aviation in the kingdom."

Rivals are happy to

Jet Aviation and Arabasco will soon be sharing more than intense rivalry in the business aviation FBO and maintenance market in Saudi Arabia – a new state-of-the-art facility at Jeddah’s King Abdulaziz International Airport.

Mike Martin *visited the facility on the eve of its opening and spoke to both operators about it and the state of the business aviation market in the kingdom.*



Jet Aviation enjoying an elegant solution for the 21st Century

King Abdulaziz International Airport is taking the business aviation passenger experience to new levels with the opening of a new dedicated FBO scheduled for early this year.

The tenants are the existing FBO operators at the airport – Jet Aviation and Arabasco. Each will occupy a separate wing of the designer complex, with all passenger and luggage flows through a specially-designed central zone.

“In the old facility, we had some issues with passenger flows because of the design of the building,” said Frank Kusserow, vice president and general manager of Jet Aviation, Saudi Arabia. “This new building resolves all that in a very elegant way.”

As the operational opening approached, Jet Aviation was working to complete the interior. It brought in the same team that did the Burj Al Arab hotel in Dubai and the Hilton Hotel in Jeddah, regarded as one of the finest in the city.

“What we will create will be really exceptional,” said Kusserow. “It will set a completely new standard for this kind of facility and I am sure our customers will appreciate it.”

The larger facility, with its distinctive architecture (the roof has an elegant wing-shape) features a central area for common use that will accommodate security, immigration and other government services for both companies.

A key feature, as passenger numbers for business aviation continue to grow, will be significantly improved flow controls. Inbound and outbound passengers will be separated in the 3,000sqm facility.

Arrivals, departures and luggage-handling functions, including 24/7 border police and customs clearance, occur in different zones to provide faster turn times, better security and enhanced privacy.

“Because it was purpose-built, there was the opportunity to design a building that is more efficient and fit-for-purpose,” said Kusserow. “It will add up to a better experience for customers in every respect.”

Jet Aviation will provide FBO and line maintenance services from the new facility. The building offers fast access to King Abdullah Economic City and the King Abdullah University.

The facility offers comfortable passenger and crew lounges, refreshment areas with hot and cold snacks, a newspaper service offering nearly 1,000 different daily and monthly publications, and a 24-hour shuttle to Jeddah’s International terminal.

The latest technology in weather briefing and flight planning, along with snooze rooms and lounges, will be available for flight crews.

Christof Spaeth, senior vice president MRO and FBO services for Jet Aviation EMEA & Asia, said: “In addition to increased passenger comfort, the new premises will allow the company to strengthen its global network and maintenance footprint by expanding its line and maintenance service capabilities in the region.”

Jet Aviation Saudi Arabia has operated two FBOs in Jeddah and Riyadh since 1979 and 1983 respectively. Both facilities offer FBO services, line maintenance and aircraft-on-ground (AOG) services to private, business and military operators. The two locations each hold Saudi Arabian PCA licenses.

go with the flow...



Raising the bar for FBO services: Frank Kusserow (left) and Brigadier General Mohammed Al Shabla (above).

Arabasco ready to move out of cruise control

As Arabasco moves into the new purpose-built FBO at King Abdulaziz International Airport, Jeddah, it is already planning to raise standards at Riyadh to similar levels, according to chief executive Ret Brig Gen Mohammed Al Shabla.

Meanwhile, the business aviation scene in Saudi Arabia is “flourishing” despite the global economic crisis of the past two years, said Al Shabla.

“We are reaching our targets much sooner than we projected,” he said. “We are seeing exceptional growth in Riyadh, so much so that our FBO there is now right behind Jeddah, where once it was a long way behind in terms of movements.

“Medina, too, is growing. Last year it became an international airport and began to receive flights from all Islamic countries in the world. We have already seen very rapid growth there and that will continue as they have now signed a contract for a new airport.”

Al Shabla said Arabasco and the wider industry in the kingdom had weathered the economic

crisis extremely well. “The fact is that we did not know what to expect – but what happened was certainly not what we expected,” he said. “You could say that we maintained our business at ‘cruise’ level.

“By the beginning to 2010, it was business as usual and at the end of 2010, we are ready to climb again. Here, the economy is good.”

He contrasted the rude health of the kingdom with the fortunes of Dubai. “I have every confidence that the Government of Dubai will ensure there is a recovery. Dubai will come back, but now the eyes of the world are on Saudi Arabia.

“We are in the fortunate position of being the biggest business aircraft ground-handler between Europe and the Far East.”

One result of the continued growth in the market is that Arabasco is investing heavily in new ground-handling equipment. “We have a \$7.3m budget over our five-year plan, but we have already spent \$3.1m in just two years.”

Arabasco has moved into the new purpose-built FBO at its Jeddah base, with passenger operations scheduled to start early this year. The facility offers hugely improved standards of comfort and passenger-handling.

“We have simply run out of space in the existing building. We cannot hire the people we need because we do not have the space to put them,” he said.

“The new building offers us the space we need and will enable us to serve our clients much better; both the crew clients and the owner clients. The building will offer all the facilities we need and has more VIP aircraft stands.”

Further down the line, a move to a new purpose-built FBO at Riyadh is expected as the capital’s international airport goes through redevelopment.

“There will be a redevelopment there and that is good because, for us, Riyadh is growing so fast and it will bring our offer into line with what we are soon to have in Jeddah.”



Ask a sim question, AASC is the answer

Mike Martin *visits the joint venture that makes simulation the real thing.*

The Advanced Arabian Simulation Company (AASC) is close to concluding its first contracts 18 months after the joint venture enterprise was established.

“When we started out I probably had eight or nine leads,” said Jan De Haldevang, director of sales and marketing for AASC. “Last week I followed up our 83rd lead. We are close to our first contracts.”

AASC is a joint venture between Thales and Saudi Arabian electronics major AEC. Its mission, according to De Haldevang, is to create an innovation-driven organisation staffed by Saudis.

Drawing on the staff resources available in AEC, AASC has been able to populate its engineering and production sections entirely with local engineers.

“We use three key words to describe ourselves,” said De Haldevang, “These are ‘Simulation’ obviously, ‘Innovation’ and ‘Saudi-isation’. AASC is a joint venture for the long-term – 25 years – which is a very significant commitment.

“Our commitment is reinforced by this dedicated use of local engineers. It’s good for the economy and the long-term investment

in Saudi development, and it is good in terms of the AASC marketing initiatives.”

AASC’s product line ranges from civil aviation simulation systems compliant with FAA/EASA and ICAO to its Sagittarius small arms training systems, which can range from basic training to advanced or tailor-made systems.

It also offers driving training simulation for both military and civilian heavy vehicles. The latter is finding a ready market in Saudi Arabia, according to De Haldevang.

“Saudi Arabia has one of the highest death tolls on its roads of any country in the world, so there is a very considerable demand for this kind of training,” he said.

The initial phase of development for AASC has been centred on getting its structure in place. It is currently moving into a new purpose-built headquarters and simulation centre on the edge of Riyadh’s international airport.

Its marketing has been exclusively focused on the Kingdom as well. “We have to established our business in the kingdom first of all,” said De Haldevang. “Once we have done this, then we can look at overseas markets.”



Jan De Haldevang and an Airbus simulator.
Top: The small arms training system.

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طيران السعودية الخاص
SAUDIA PRIVATE AVIATION

Jon Lake looks at the heritage that makes the Saudi air force the success it is today.

A FORCE FOR GOOD

RSAF is modern, well-equipped and a match for anyone in the region

As guardian of the holy cities of Mecca and Medina, as the world's leading oil producer and as a pillar of the GCC, Saudi Arabia enjoys influence and prestige in the Arabian world and beyond.

Saudi Arabia has undertaken a process of continuous military modernisation and is, arguably, the USA's most important regional ally at a time of greater 'burden sharing' in the maintenance of regional security.

The Royal Saudi Air Force shoulders awesome responsibilities, defending the nation's 2.2m sq km of territory and its airspace. It protects the widely scattered population centres and vulnerable oil installations, including drilling platforms on land and in the Gulf, pumping stations, processing and refining facilities and loading and export infrastructure.

Military aviation in Saudi Arabia began in 1926 when Abdul Aziz Ibn Saud became the King of Hejaz. He took over the six, or so, DH9s that had been used by Sharif Hussein Ibn Ali, whose territory he captured.

An RAF mission arrived in 1929 and four Westland Wapitis were supplied to equip the new Hejaz Air Force at the end of the year. The aircraft were used for mail carrying as well as their military role.

The country was named the Kingdom of Saudi Arabia on September 23 1932 and the air arm became the Royal Saudi Air Force (RSAF), moving its main base from Jeddah to Taif in July 1934.

The first Saudi pilots underwent training in Italy in 1935 and flew Caproni Ca-100s and Ca-101s supplied by Italy and a Caudron Renault Pelican donated by France. The Italian mission ended in 1939 and Saudi Arabia started sending pilots to Egypt for training.

Saudi Arabia offered the RAF the use of its aircraft during the Second World War and the RSAF became dormant. Post-war, the air force was reconstituted with British and American assistance, with an initial cadre of pilots training on the Harvard and Spitfire in the UK, and with the US supplying C-47s, T-6s and A-26B Invaders in 1952, 1953 and 1955.

The Harvards were the first aircraft to wear the RSAF's distinctive green and white roundel and fin flash. Temco Buckaroos and de Havilland Chipmunks were also supplied for training.

The United States leased the air base at Dhahran from 1952 to 1962, and the US Military Training Mission at Dhahran trained Saudi pilots and maintenance personnel, as well as transferring some aircraft to the RSAF.

The relationship with Britain faltered as a result of the 1956 Suez crisis (and an on-going territorial dispute over the Buraimi Oasis, which Britain claimed on behalf of Muscat and Oman) but, as a direct consequence, relations with Nasser's Egypt briefly thawed, and the RSAF received its first jet fighters in the shape of some 20 ex-Egyptian de Havilland Vampire FB.Mk 52s, which entered service with No5 Squadron at Jeddah in July 1957.

The Vampires were quickly replaced by 16 North American F-86F Sabre fighter bombers, which initially served with No 5 Squadron at Dhahran, alongside No15 Squadron with 10 Lockheed T-33A Shooting Star jet trainers.

The transport force was also strengthened and reinforced, with six Fairchild C-123 Providers augmenting the RSAF's existing C-47s and two SAA C-54s.

In the late 1950s a study group led by Crown Prince Faisal, a qualified pilot, concluded that Saudi Arabia needed modern air defence radars, supersonic missile-armed and radar-equipped fighters, and modern ground-attack fighter-bombers – together with modern transport aircraft.

But, before suitable procurement programmes could be put in place, Saudi Arabia's relationship with the USA faltered, as a coup in neighbouring Yemen in late 1962 opened up a rift between the United States, which recognised the Egyptian-backed Yemen Arab Republic (YAR), and both the UK and Saudi Arabia, who supported the royalist forces loyal to the deposed Imam. Saudi Arabia and the British were, thereby, pushed closer together.

Britain offered Saudi Arabia Canberra bombers, to the initial fury of the USA, though following the assassination of Kennedy, the USA rapidly became more disenchanted with Nasser's Egypt and more tolerant of British support for Saudi Arabia.

When the Saudi Arabian Air Defence Scheme was launched, it was with UK and US government

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DEFENCE REVIEW

Agusta Sikorsky AS61A-4 of the No1 Squadron Royal Flight.



The F-15C, based at Taif.



The Panavia Tornado GR4 in sandy camouflage.



The new grey scheme on a RSAF Tornado IDS.



CONTINUED FROM PAGE 90

support, and comprised a joint Anglo-American bid combining the British Lightning aircraft and British air defence radar with American Raytheon HAWK SAMs.

In December 1965, a contract worth more than £100m was announced, covering the supply of 40 BAC Lightning interceptors, 25 BAC Strikemaster trainers, a series of Associated Electrical Industries (AEI) radar stations, and the Raytheon Hawk SAM system, with the British company Airwork providing training and technical support.

Before these elements could be delivered, tensions on the Saudi-Yemeni border intensified, with incursions by Egyptian aircraft operating from Yemeni bases.

In February 1966 Prince Sultan requested the loan of an entire RAF squadron 'to fly under Saudi colours' but, while this was not deemed politically expedient, the decision was taken to rush six refurbished ex-RAF Lightnings, six Hawker Hunters, an ex-British Army Thunderbird SAM system and four new AEI radar systems to Saudi Arabia under operation 'magic carpet'. The contract was signed on March 28 1966, with Airwork providing support and personnel, including '12 operational pilots'.

Magic Carpet

The 'magic carpet' force was initially stationed at Riyadh from October 1966, moving to its new base at Khamis Mushayt early in 1967 as No6 Squadron. Hunter patrols brought an almost immediate end to Egyptian incursions into Saudi airspace. The 'magic carpet' contract ended on March 31 1968, with Pakistani administrative and technical personnel taking over from Airwork.

The main batch of Saudi Lightnings were F.Mk 53s and two-seat T.Mk 55s, all with additional fuel capacity, and with the single-seaters having new air-to-ground and reconnaissance capabilities and expanded weapons options. Deliveries of the 34 F.Mk 53s and six T.Mk 55s began in July 1968 and the type equipped Nos 6, 2 and 13 Squadrons. The Lightning retired from Saudi service in 1986.

At much the same time as the first 'magic carpet' Hunters arrived in the country, the RSAF also received five C-130E Hercules transports (allowing the C-123Bs to be phased out in 1967) and rotary-wing operations began with Alouette IIIs in 1966, while 24 Agusta Bell AB205s and 16 AB206s were ordered in 1967 and delivered in 1968-69.

The training machine was also revitalised, with the RSAF taking delivery of 47 BAC Strikemaster basic trainers between 1968 and 1977. These equipped Nos 9 and 11 Squadrons within the King Faisal Air Academy – which opened in April 1968 – augmenting the Cessna 172s of No8 Squadron (which performed the primary training role) and the T-33s of No15 Squadron, which undertook advanced training.

How the RSAF works...

■ DEPLOYMENT

The RSAF units are divided into 'Wings' dispersed across the seven major air bases.

Dhahran hosts two and there is another vestigial Wing at Hafr Al Batin.

At Tabuk, in the North East, defending the key ports of the upper Red Sea area and Saudi air space and territory adjacent to Jordan, Syria, and Israel, advanced flying training units are augmented by an F-15C/D air defence squadron.

At Dhahran, defending the main oil facilities of the Persian Gulf, and facing Iran and the various Gulf Emirates, there are three Tornado IDS units, as well as an F-15C/D air defence squadron and one squadron of F-15S.

Taif covers the ports of the lower Red Sea and the Holy Cities and accommodates two F-15C/D squadrons. Two squadrons of Typhoons are also forming there.

At Khamis Mushayt in the far south-west, close to the troubled Yemeni border zone, the base is home to two F-15S squadrons.

■ AIR DEFENCE

Saudi Arabia is faced with the twin problems of a vast territory and airspace to defend, coupled with a number of regional situations that do, or could, pose an air threat.

At one stage it was thought that the redundant Tornado ADV aircraft might be converted for the suppression of enemy air defences (SEAD) and reconnaissance roles, but in the event the 17 surviving RSAF ADVs were sold back to BAE Systems as part of the Typhoon (Project Salam) deal.

On August 17 2006, Saudi Arabia signed a contract with the UK Government for the supply of 72 Eurofighter Typhoons under the Salam programme (initially referred to as Project Rohan). The UK and Saudi Arabia also signed a new Saudi British Defence Co-operation Programme, which will see the UK partnering with its ally in a long-term effort to strengthen Saudi's defences, but also to help promote Saudisation of the forces, and develop the Saudi industrial aerospace sector. The first 24 Typhoons, including six two-seaters, are being delivered from Warton, but the remainder (including eight two-seaters) will be assembled locally, probably at the RSAF MU at Dhahran.

■ STRIKE/ATTACK

Distance has also shaped offensive capabilities. The short-range F-5E fighter-bomber has gone unreplaced and the RSAF is concentrating efforts around the longer-range F-15S and Tornado IDS.

The 84 recently-ordered Strike Eagles will probably equip three or four new squadrons, and will augment the 70 surviving F-15S aircraft delivered in the 1990s.

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. The older aircraft will be upgraded to a similar standard.

US unwillingness to allow long-range stand-off weapons to be integrated on the Saudi Strike Eagles leaves a vital role for the Saudi Tornado force and around 80 of the three-squadron fleet are being upgraded under the Tornado Sustainment Programme. The aircraft will also carry the Thales Damocles targeting pod, some 30 of which have now been ordered.



■ INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION AND RECONNAISSANCE (ISTAR)

The reconnaissance-configured RF-5E Tigereyes of No17 Squadron are believed to have been retired, leaving a handful of recon-capable Tornados as the primary tactical reconnaissance asset. On a larger scale, No18 Squadron still operates five Boeing E-3As, while No19 Squadron has a pair of specialized RE-3s, each broadly equivalent to the USAF's RC-135 Rivet Joint.

■ TRANSPORT

The C-130 forms the mainstay of the RSAF transport fleet, augmented by small numbers of CASA CN-235s. There have been reports that the force is likely to be recapitalised through a C-130J purchase.

Saudi Arabia has ordered three A330 MRTT tankers with centreline booms and under-wing Cobham 905E HDUs, and the requirement was subsequently increased to six aircraft. These will join the air force's seven KE-3A tankers and four KC-130H Hercules. Another 10 KC-130H tankers may also be added.

The RSAF also operates a fleet of aeromedical aircraft on behalf of the Saudi Armed Forces Medical Services (SAFMS), which is based at the King Fahd Armed Forces Hospital in Jeddah.

The Royal Flight consists of a VIP fleet of civil registered aircraft that range from biz-jets to the Boeing 747, and which ordered two WVIP-configured AgustaWestland AW101s in mid-2008.

The Typhoon was a landmark for UK–Saudi relations.



British hopes for further success in Saudi Arabia were dashed when a £100m order for SEPECAT Jaguars and helicopters fell through, with the RSAF instead opting for the Northrop F-5E.

The first of 114 Northrop F-5s were delivered in 1972 under the Peace Hawk programme. Most served in the fighter-ground attack role, though one squadron of RF-5Es was procured for tactical reconnaissance, and a number of F-5B aircraft were acquired as advanced jet trainers to replace the T-33 with No15 Squadron. Two-seat F-5Fs went to No7 Squadron to replace the F-86F Sabres, which were withdrawn from use in 1977.

The RSAF gained its first air-to-air refuelling tankers in 1974 in the shape of four KC-130H Hercules.

The RSAF entered the front rank of world air forces in 1984 with the first deliveries of the McDonnell Douglas F-15 Eagle air superiority fighter. The initial order was for 46 F-15Cs and 16 F-15Ds, though a restriction was imposed so that only 60 could be 'in-country' at any time.

On June 5 1984, two RSAF F-15Cs operating with a USAF Boeing E-3 Sentry, shot down two intruding Iranian Air Force McDonnell Douglas F-4E Phantoms.

Saudi Arabia ordered five E-3A AWACS aircraft in 1981. The first reached operational status in 1987.

In 1985 Saudi Arabia also placed a contract

with a Boeing-led consortium for a new command, control, communications, and intelligence (C3I) system known as 'Peace Shield'. The system gathered and fused the radar picture collected by the RSAF's new AWACS aircraft and ground-based surveillance radar and shared the resulting 'picture' with fighters and ground-based air defences, including the I-Hawk SAMs, to provide a fully integrated modern air defence network.

While Saudi Arabia was delighted with its Eagles, the number it was allowed to buy was restricted, basing was controlled, and the aircraft were downgraded in some respects – all conditions having been imposed by the US Congress to allay Israeli fees.

As a result, Saudi Arabia turned to Britain as a second source of supply. The first part of the Al Yamamah deal with the UK was signed on September 26 1985, under which Saudi Arabia acquired 48 Tornado IDS strike attack aircraft, 24 Tornado ADV fighters, as well as 30 Pilatus PC-9 basic and 30 BAe Hawk 65 advanced trainers.

A second phase followed on July 3 1988, covering the supply of a further 48 Tornado IDS, 20 PC-9s and 20 BAe Hawk 65As. This made Al Yamamah Britain's largest defence export contract.

Twelve of the IDS Tornados were delivered with a reconnaissance capability equivalent to

that of the RAF's Tornado GR.Mk 1A. The Tornado ADVs were equivalent to the RAF's F.Mk 3, and were delivered with the SkyFlash semi-active radar homing AAM. The first six Saudi Tornados were declared operational at Dhahran on April 30 1986.

When Iraq invaded Kuwait in 1990, Saudi Arabia called upon the USA to help defend it against possible attack. It also opened its bases for use by coalition forces.

The RSAF joined the coalition air campaign, with the F-5E and Tornado squadrons playing a particularly noteworthy part. The RSAF flew six per cent of coalition sorties – including a total of 1,133 interdiction, and 523 close air support missions.

The Saudi F-15s also played their part and, on January 24 1991, Captain (now Brigadier) Ayedh Al-Shamrani of No13 Squadron shot down a pair of Exocet-armed Iraqi Mirage F1s. The RSAF clocked up 2,050 defensive counter air sorties and 129 offensive.

The RSAF also flew 1,829 airlift sorties, 118 reconnaissance, 85 AWACS and 485 tanker sorties.

Approved after the Gulf War

A request for 12 further F-15s (nine F-15C and three F-15D) had been turned down in 1989, but this was approved after the Gulf War, which also saw the USAF providing 20 more F-15Cs and four F-15D Eagles from USAF stocks, taking total F-15C/D deliveries to 98 aircraft (about 78 of which remained operational). The old limit of 60 aircraft in-country was dropped.

After witnessing the effectiveness of the USAF's F-15E Strike Eagles during Desert Storm, Saudi Arabia wanted to acquire the type. Permission was not initially granted but, after requesting the delivery of 24 single-seat air-to-ground optimised F-15Fs, the US had second thoughts. In 1993, the RSAF was given permission to purchase 72 F-15S aircraft. These were slightly downgraded versions of the F-15E Strike Eagle, initially designated F-15XP, and all were delivered between 1995 and November 1999.

The Saudi F-15S aircraft were upgraded during service, gaining AN/AAQ-33 Sniper advanced targeting pods in place of the original LANTIRN system.

More recently, the RSAF has re-engined its F-15S aircraft with the General Electric F110-GE-129, which does not suffer the same sand ingestion problems as the original F100-PW-229. The work was undertaken by the Saudi Alsalam Aircraft Company.

Defence expenditure has risen from \$20.9bn in 2004 to \$40.2bn in 2009 (roughly 10 per cent of GDP).

Most recently, a planned \$60bn arms sale from the USA to Saudi Arabia was announced, including the supply of 84 new F-15SA fighter-bombers, as well as 178 helicopters of various types.

Air Order of Battle

RSAF 1 WING, KING KHALID MILITARY CITY, HAFR AL BATIN

12 Squadron	Agusta Bell AB212	SAR/Liaison
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The aviation elements of the Royal Saudi Land Forces are co-located alongside 1 Wing at Hafr Al Batin.

Royal Saudi Land Forces (RSLF)

1 Aviation Battalion	Bell 406CS, Sikorsky S-70A-1, Sikorsky VH-60L	scout, utility, VIP
2 Aviation Battalion	AH-64A	attack/anti-tank

RSAF 2 WING, KING FAHD AIR BASE, TAIF

3 Squadron	Eurofighter Typhoon T.Mk 51	Tactical Fighter/OCU
5 Squadron	McDonnell Douglas F-15C/F-15D	Air Defence Fighter
10 Squadron	Eurofighter Typhoon FGR.Mk 50	Tactical Fighter/OCU/OEU
12 Squadron det.	Agusta Bell AB212	SAR/Liaison
14 Squadron	Agusta Bell AB212/Bell 412EP	SAR/Liaison
34 Squadron	McDonnell Douglas F-15C/F-15D	Air Defence Fighter, OCU

No.17 Squadron at Taif is now believed to have been disbanded, and its Northrop F-5Es and F-5Fs withdrawn from use, along with those from No.3 Squadron.

RSAF 3 WING, KING ABDUL AZIZ AIR BASE, DHAHRAN

13 Squadron	McDonnell Douglas F-15C/F-15D	Air Defence Fighter
44 Squadron	Bell 412EP	SAR/Liaison
92 Squadron	McDonnell Douglas F-15S	Interdiction/Attack
GCDA	Kawasaki Vertol KV107 + Special Forces support & Medevac	

+The KV107s belong to the Ministry of the Interior's General Civil Defense Administration (GCDA)

RSAF 4 WING, KING KHALED AIR BASE, RIYADH

1 Squadron/Royal Flight	Various types *	VIP transport
11 Squadron	Ce550, Gulfstream IV	VIP transport
GCDA	Kawasaki Vertol KV107, Sikorsky S-92A +	Special Forces support & Medevac

*Airbus A340-213, BAe 125-800A, BAe 125-800B, Boeing 747-3G1M (Combi), Boeing 747SP-68, Boeing MD-11, Boeing 757-236, Boeing 737-7DP(BBJ), Boeing 737-8DP(BBJ2), CASA CN-235M-10, Lockheed Hercules (VC-130H, C-130H, L-100-30), Learjet 35A, Agusta Sikorsky AS-61A-4. Most, if not all, wear Saudi Arabian titles, colour scheme and civil registrations.

+The KV107s and S-92As belong to the Ministry of the Interior's General Civil Defense Administration (GCDA)

King Faisal Air Academy

8 Squadron	Cessna F172G/H/M and Super Mushshak	Primary Training/Screening
9 Squadron	PC-9	Basic Training
22 Squadron	PC-9	Basic Training

Saudi Armed Forces Medical Services (SAFMS)

SAFMS	Various types**	Aeromedical
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**Aerospatiale SA365N, Agusta-Bell AB212, Beech 300C, Boeing 757-23A, G1159A Gulfstream III, G1159D Gulfstream IV, Learjet 35A, Lockheed Hercules (C-130H, C-130H-30, L-100-30), Sikorsky S-70A-1L. Most wear Saudi Arabian titles, colour scheme and civil registrations.

RSAF 5 WING, KING KHALID AIR BASE, KHAMIS MUSHAYT

6 Squadron	McDonnell Douglas F-15S	Interdiction/Attack
14 Squadron det.	Agusta-Bell AB212, Bell 412EP	SAR/Liaison
55 Squadron	McDonnell Douglas F-15S	Operational Conversion
99 Squadron	Eurocopter AS532M CSAR	Combat Search and Rescue

No.15 Squadron has disbanded, and its Northrop F-5Es, and F-5F withdrawn from use.

There is a GCDA detachment with Kawasaki Vertol KV107 helicopters at Abha, near Khamis Mushayt, for Special Forces support & Medevac.



RSAF 6 WING, PRINCE SULTAN AIR BASE, AL KHARJ

18 Squadron	Boeing E-3A, KE-3A	AEW/AWACS, AAR
19 Squadron	Boeing RE-3A	Sigint
32 Squadron	Lockheed KC-130H	AAR
33 Squadron	Bell 412	Liaison/SAR

Some reports suggest that 33 Squadron is part of the Saudi Armed Forces Medical Services at Riyadh.

RSAF 7 WING, KING FAISAL AIR BASE, TABUK

2 Squadron	McDonnell Douglas F-15C/F-15D	Air Defence Fighter
21 Squadron	BAe Hawk T.65	Advanced Training
37 Squadron	BAe Hawk T.65	Advanced Training
79 Squadron	BAe Hawk T.65A	Advanced Training
88 Squadron	BAe Hawk T.65/65A	Advanced Training/Display

No.29 Squadron at Tabuk has disbanded, and its 17 or so surviving Panavia Tornado ADVs are in storage at Tabuk.

RSAF 8 WING, PRINCE ABDULLAH AIR BASE, JEDDAH

4 Squadron	Lockheed C-130E, C-130H, C-130H-30	Tactical transport
16 Squadron	Lockheed C-130E, C-130H	Tactical transport
20 Squadron	Lockheed C-130E, C-130H	Operational conversion
GCDA	Kawasaki Vertol KV107 + Special Forces support & Medevac	

+The KV107s belong to the Ministry of the Interior's General Civil Defense Administration (GCDA)

Those Royal Saudi Naval Forces aviation elements supporting the Western Fleet are co-located alongside 8 Wing at Jeddah.

Royal Saudi Naval Forces

62 Squadron	Aerospatiale SA365F Panther	ASW/ASV/Liaison
72 Squadron	Eurocopter AS332F-1 Super Puma	ASW/ASV/Vertrep

RSAF 11 WING, KING ABDUL AZIZ AIR BASE, DHAHRAN

7 Squadron	Panavia Tornado IDS	Interdiction/Attack
35 Squadron	BAE Jetstream 31	Navigator training
75 Squadron	Panavia Tornado IDS/TSP	Interdiction/Attack and OCU
83 Squadron	Panavia Tornado IDS	Interdiction/Attack
? Squadron	Agusta-Bell AB212	SAR/Liaison
Weapons and Tactics School	Loaned aircraft	Tactics and weapons training

42 Squadron (F-15) and 66 Squadron (Tornado) have disbanded, donating their aircraft to other units.

Those Royal Saudi Naval Forces aviation elements supporting the Eastern Fleet are based at King Abdulaziz Naval Base north of Dhahran.

?? Squadron	Aerospatiale SA365F Panther	ASW/ASV/Liaison
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شركة السلام للطائرات
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Record arms deal helps repair US relationship with Saudi

The Eagle has landed to boost Boeing's business in the Kingdom.

At the end of last year the US Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Saudi Arabia - if carried out, this will be the USA's largest-ever single foreign arms deal, worth an estimated \$60bn, over the next five to ten years.

About half that sum (\$29.432bn) will pay for the supply of some 84 new F-15SA fighter-bombers, and for the upgrade of about 70 surviving F-15S aircraft to the same standard.

The RSAF has enjoyed a long and generally happy relationship with Boeing's F-15. It received a total of 75 F-15C air superiority fighters and 23 examples of the dual-control but fully-operationally-capable F-15D trainer.

The two-seat F-15S Strike Eagle fighter-bomber has formed a key element in RSAF strike power since the mid-1990s, and the type now equips squadrons at Dhahran (92) and Khamis Mushayt (6 and 55). During the recent

fighting with Houthi insurgents along the Saudi Arabia-Yemen border and in the northern Yemeni Sa'dah region, the F-15S played a key role.

Though the F-15S (like the USAF F-15E on which it is based) is a true multi-role/swing-role fighter, the RSAF (like the USAF) has not exploited the type's considerable air-to-air potential. However, with the 78 or so surviving F-15C and F-15D Eagles now showing their age, and with the RSAF increasingly moving towards multi-role platforms, replacing these aircraft with more Strike Eagles has become an increasingly attractive option.

Thus, the new arms deal notified to Congress by the US Defense Security Cooperation Agency included 84 F-15SA 'Saudi Advanced' fighter-bombers, as well as an upgrade that would see the 70 surviving RSAF F-15S multi-role fighters brought up to the same F-15SA configuration.

The deal also covers the provision of a US-based fighter training squadron using 12 of the

new F-15SA aircraft, as well as a range of infrastructure construction and refurbishment programmes to support F-15SA operations in-kingdom.

Following Boeing's high-profile launch of its 'Silent Eagle' configuration in March 2009, it became clear that Saudi Arabia was interested in the new variant, though it remains unclear as to the extent to which the new F-15SA will incorporate some or all of the features associated with the F-15SE Silent Eagle.

This is particularly in respect of the structural and materials changes that reduce the radar cross-section of the Silent Eagle and contribute to its low observability, and in respect of the F-15SE's conformal weapons bays (CWBs), which replace the 'standard' Eagle's conformal fuel tanks (CFTs).

But early speculation that the F-15SA would be a downgraded derivative of the Korean F-15K 'Slam Eagle' has certainly proved incorrect, and the F-15SA will be the most advanced and most capable Eagle version when it enters service.

The original batch of Saudi F-15S aircraft were originally delivered with Pratt & Whitney F100-PW-229 engines, but these proved problematic, ingesting the fine sand in the air which then melted going through the hot section.

When the engine cooled, the molten sand solidified into glass on the thermal barrier coatings in the hot section, and eroded the coatings.

Pratt & Whitney reportedly recommended

No.6 Squadron dispatched its F-15S aircraft to Nellis AFB, Nevada to participate in Exercise Red Flag. Courtesy Tony Osborne.



Massive helicopter order launches new Saudi air arm

Though much interest has been focused on the planned sale of 84 F-15SA Strike Eagles to the Royal Saudi Air Force, the same arms deal is also planned to include the procurement of 190 helicopters.

Some 156 of them are for the Saudi Arabian National Guard (SANG), to form the basis of an entirely new Aviation Command, at an estimated cost of \$25.6 bn.

The SANG Aviation Command was established in 2006 but, as yet, has no aircraft on charge!

Today's SANG is directly descended from King Abdul Aziz Al Saud's Ikhwan (brotherhood), or 'white army' as it was sometimes called. This was the king's instrument for subduing and unifying the various disparate tribes of the Arabian Peninsula to form the Kingdom of Saudi Arabia.

Once organised along tribal lines and commanded by sheikhs, today's SANG continues to draw heavily for its members from select Bedouin tribes that have a record of unquestioning loyalty to the crown. As a result of this history, the SANG has a long tradition of loyalty to both the nation and its ruling family.

The SANG was the first Saudi military unit to respond to the Iraqi invasion of Kuwait in August 1990, taking up defensive positions along the border before defeating the first large-scale Iraqi incursion into Saudi Arabia at the Battle of Khafji.

LIBERATION OF KUWAIT

When Operation Desert Storm was launched, SANG units were actively involved in the liberation of Kuwait, demonstrating that it was an integral element within the kingdom's forces, and not simply an internal security organisation.

As a result of its outstanding performance during the first Gulf War, the SANG was expanded from six brigades to 11, adding three more mechanised brigades and two more infantry brigades.

Today, the SANG has a dedicated security force with a special brigade responsible for the security of the king, and another special security brigade comprising three counter-terrorism battalions and three riot control battalions, the Riyadh Military Police Command, four military police battalions, two guard battalions, and a cavalry battalion.

In recent years, the emphasis of the SANG mission has shifted from simply defending against external threats to also embracing an internal security role in support of the Ministry of Interior.

The National Guard's tasks include border security and the securing and protecting of key industrial and oil facilities. It is a full-time force that includes more than 75,000 regulars and 27,000 tier II militia.

A further five-to-ten year modernisation plan was launched in 2002, with the aim of developing the SANG into a full spectrum force, including an aviation command.

This will receive the newly-ordered helicopters which include 72 armed helicopters fitted with advanced defensive aids systems, including AN/APR-39 radar warning receivers, AN/AVR-2B laser warning systems and AN/AAR-57(V)3/5 common missile warning systems, as well as improved countermeasures dispensers.



The 500-lb Paveway IV is becoming a weapon of choice for today's strike attack aircraft, offering a useful combination of versatility, precision and minimal collateral damage. Courtesy Chris Wood.

that the best solution would be to reduce the thrust and temperature settings. The deputy minister of defence and aviation, Prince Khaled, replied: "I did not buy the F-15 to have it fly like a F-5." Saudi Arabia, therefore, turned to General Electric – its competing F110-GE-129 did not suffer the same problem – and re-engine all of its Eagles.

Pratt & Whitney bought back the used engines rather than have them dumped on the market. General Chuck Horner, the former Desert Storm air commander and a consultant for General Electric, remembered that the whole re-engine programme was to have paid for itself in about six years due to the reduced need to both replace engine modules and borescope the engines.

The Saudi F-15SA will be the first Eagle variant to be fitted with the BAE Systems North America digital electronic warfare system (DEWS) originally proposed for the F-15SE Silent Eagle, which combines and integrates a digital radar warning receiver, digital jamming transmitter, integrated countermeasures dispenser and an interference cancellation system so effectively that the aircraft will be able to jam enemy radars even as its own radar and radar warning receiver (RWR) continue to operate.

The F-15SA will use third-generation LANTIRN Tiger Eye navigation pods and AN/AAQ-33 Sniper targeting pods, and the fleet will be compatible with remotely operated video enhanced receivers (ROVER), which allows seamless communications with suitably equipped ground forces, including forward air controllers.

For the air-to-ground role, the F-15SAs are due to be supplied with 400 AGM-84 Block II HARPOON anti-ship missiles and 600 AGM-88B HARM anti-radar missiles, as well as 1,000 Paveway IV 500-lb dual mode laser/global positioning system (GPS) guided munitions, and 1,000 2,000-lb dual mode laser/GPS guided munitions, 1,100 2,000-lb GBU-24 PAVEWAY III laser-guided bombs, 1,000 2,000-lb GBU-31BV3 joint direct attack munitions, 1,300 CBU-105D/B sensor fused weapons (SFW)/wind corrected munitions dispensers

(WCMD), 1,000 500-lb Mk 82 general purpose bombs, 2,000 2,000-lb Mk 84 general purpose bombs and 200,000 rounds of 20-mm ammunition.

The deal also includes training weapons, including 50 inert CBU-105s, 6,000 inert Mk 82s, 2,000 Mk 84s, and 400,000 rounds of 20mm ammunition.

The aircraft will be supplied with 462 joint helmet-mounted cueing system helmets and 338 joint helmet-mounted cueing systems (JHMCS).

The aircraft will be armed with the AIM-120C7 advanced medium-range air-to-air missiles (AMRAAM), 500 of which are being supplied, together with 300 short-range, IR-homing AIM-9X missiles. Training missiles and air combat manoeuvring instrumentation pods are also being supplied.

The 84 new-build F-15SAs should allow the re-equipment of three front-line squadrons, effectively doubling the current fleet.

By 2020, we can expect the Royal Saudi Air Force to field three squadrons with 72 Eurofighter Typhoons, tasked with air dominance and (after 2015) air-to-ground operations, and there will also be six squadrons with approximately 154 F-15SAs, operating as multi-role (air defence, interdiction, reconnaissance, SEAD/DEAD, and anti-ship) fighter bombers.

The F-15SA deal represents a further 'normalisation' of relations between the USA and the Kingdom of Saudi Arabia, which had frayed in recent years, especially following the revelation that 15 of the 19 '9-11' hijackers were Saudi nationals.

More importantly, the F-15SA programme will forge closer links between the kingdom and the USA, with greater interoperability with the USAF and a lasting support and training relationship.

The US view is that the proposed sale will enhance its national security objectives by strengthening America's strategically vital ongoing relationship with the Kingdom of Saudi Arabia, and that it will facilitate greater "burden sharing" with its allies in the maintenance of regional security, especially in the light of developments in Iran.

Modernisation is a priority for the RSAF to fully support the GCC states – but RSAF still needs its foreign partners.

Jon Lake reports.

Friends and the Saudi neighbours

The Royal Saudi Air Force (RSAF) is better able to support neighbouring GCC states and to operate with USCENTCOM forces in any major crisis than the kingdom's other armed forces, and it is the only service that can cover Saudi Arabia's 2.3m sq km of territory and airspace.

The modernisation and expansion of the RSAF has, therefore, been accorded a higher priority than that of the Army, Navy, and Air Defence Force.

After some retrenchment in the mid 1990s, resulting in reduced readiness and training standards and a rising accident rate, the RSAF is placing great emphasis on improving standards, and on training as well as on ambitious 'Saudisation' plans.

In the short term, this has led to a continuing reliance on foreign assistance and training, though the kingdom has aspirations for greater autonomy and self-reliance.

But, however sincere these aspirations, the kingdom has a long tradition of reliance on foreign advisers, instructors and other personnel.

Contract pilots

When the RSAF acquired English Electric Lightnings and Hawker Hunters, these were initially flown by UK contract pilots provided by Airwork, and subsequently by pilots seconded from the Pakistani Air Force.

Pakistan has provided military aid and expertise to Saudi Arabia for decades, including pilots and combat troops. In the 1970s and 80s, up to 15,000 Pakistani troops were stationed in the kingdom; some in a brigade combat force near the Israeli-Jordanian-Saudi border. The USA and UK have also provided considerable assistance and support for many years.

The RSAF has taken justifiable pride in



conducting its own flying training 'in-kingdom', but has always relied heavily on the use of foreign QFIs and ground school instructors. In recent years, the Air Force has also sent increasing numbers of pilots and other personnel overseas for training.

Thus, while nine members of the Royal Saudi Air Force trained in various US Air Force programmes in 2005, the number grew to 161 in 2008.

The importance of this relationship was underlined in March 2009, when Prince Salman bin Abd al-Aziz Abd al-Rahman, the Governor of Riyadh, attended the graduation ceremony of Specialised Undergraduate Pilot Training Class 09-06 at the 14th Flying Training Wing, at Columbus AFB, Mississippi. The three RSAF Lieutenants graduating in the class of 26 pilots included the prince's son.

The modernisation of the RSAF has, if anything, led to a growing reliance on foreign assistance, as more sophisticated new aircraft, demanding greater support, have entered service.

Saudi Arabia failed to recruit and train sufficient personnel to underpin the modernisation of the 1990s and early Saudisation efforts, coupled with a failure to impose high training and proficiency standards, exacerbated

the situation. Accordingly, the RSAF has found it hard to attain the internationally accepted average crews/aircraft ratio of 1.5:1, let alone the 1.8:1 ratio that its own operational experience indicated was required to maximise sortie rates and combat efficiency.

In 2002 it was estimated that Saudi Arabia had only 0.9 aircrews and 0.5 ground crews per aircraft, equivalent to between one-third and two-thirds of the numbers needed to sustain intense, 24-hour operations in the face of a major threat. It was estimated that its pilots were flying an average of 3.5-5 hours per month – far below the then-NATO standard of 20 hours.

Beef up force structure

Saudi Arabia, therefore, needed foreign pilots to man some of its aircraft, just to beef up force structure. US pilots have been attached to the F-15 squadrons for many years, while the Saudi Tornado squadrons have placed similar reliance on British pilots and navigators, and on augmenting RSAF engineers and ground crew with contractor-provided foreign maintenance personnel.

In the case of the RSAF's E-3A Sentry AWACS aircraft, it soon became clear that the RSAF's buy of five aircraft was sufficient to sustain two orbits, round-the-clock. However, maintaining a full air defence and air control and warning screen against a Northern Gulf state like Iraq or Iran might require up to four simultaneous orbits by AWACS. This has forced the RSAF to rely on operating jointly with USAF AWACS aircraft, and the degree of co-operation necessary has required assistance and training from the USAF.

BAE Systems and its predecessors (BAC and BAe) have been at the forefront of contractor support for the RSAF since 1973. The company's presence in Saudi Arabia is such that the kingdom



is one of six nations described by BAE Systems as 'home markets' (alongside Australia, South Africa, Sweden, the UK and the United States). BAE Systems is one of the largest companies in the Saudi industrial sector, currently employing 4,600 people, including 2,450 local Saudis, and the company is committed to the training of local nationals to bring them into more management, technical and other qualified positions.

BAE Systems has established a technical training academy at Warton and has a programme that will produce Tornado aircraft technicians for RSAF, helping it move towards the multi-skilled ethos embraced by the UK RAF, in place of its single-skill trades.

Trainees begin with a course at the RSAF's Technical Studies Institute in Dhahran, followed by six months of English language training. They then undertake an intensive year at the RAF's Defence College of Aeronautical Engineering at Cosford, learning basic aircraft skills in line with their respective trades, before moving on to Warton for a mixture of classroom-based theory training and, importantly, specific on-the-job training.

They emerge with broad skills in one of four trades – airframe, propulsion, avionics, or electrical, and are posted to an RSAF Tornado squadron, where they are mentored by an experienced multi-skilled BAE Systems technician trainer.

While the RSAF has made efforts to reduce its reliance on the UK in the operation of its Tornado fleet, in the case of the F-15S, Saudi Arabia has quite deliberately accepted a reliance on US technicians and technical support to keep the aircraft operating. This has been accepted as the price of receiving an aircraft, which might otherwise have been withheld – reliance on US support reassuring the Americans that the aircraft

could not be used against them (or their allies) in the event of some unforeseen coup, and defusing any Israeli objections to the sale.

Initially supplied with a limited number of conformal fuel tanks and some downgraded avionics, upgrades to Saudi Arabia's F-15S aircraft from 1998 brought them closer to the USAF's F-15E standard, and led to a need for more mutual training to maximise interoperability and co-operation. This has seen the RSAF deploy F-15S aircraft to the USA for exercises, and USAF personnel from the United States Military Training Mission Air Force Division serve with the Saudi F-15S squadrons, passing on their expertise.

The RSAF made its first appearance at the USAF's 'Red Flag' exercise decades ago, participating in Red Flag 81-1 in November 1980 using borrowed USAF F-5Es and F-5Fs, temporarily painted with RSAF insignia.

Raise the standards

More recently, RSAF F-15S Strike Eagles participated in a Red Flag exercise in August 2005, and they deployed again in February 2008 to participate in Red Flag 08-3, aiming to raise the standards and improve their ability to interact and interoperate with allied forces. The importance of the exercise was underlined by the attendance of Prince Khalid bin Sultan bin Abdulaziz, the Assistant Minister of Defence and Aviation for Military Affairs.

A further deployment took place in 2010, led by Wing Commander Turki Bin Abdullah Bin Abdul Aziz. The F-15S crews, with five attached US advisers, undertook a dedicated low-altitude training exercise above Utah, Arizona and California before participating in the Red Flag 10-4 and Green Flag 10-9 training exercises.

While the RSAF's relationship with the USAF is particularly important, the force has also undertaken similar exercises in the UK and in France. During 2006, the RAF's Dambusters (No.617 Squadron) deployed to Saudi Arabia to take part in Exercise Loan Frame, and eight Tornado IDS aircraft from No.75 Squadron at Dhahran paid a reciprocal visit to RAF Lossiemouth in Scotland from August 22 2007, staging via Trapani Air Base in Sicily and RAF Marham in Norfolk, supported by two RSAF C-130H Hercules transports, KE-3 tankers and E-3A AWACS aircraft.

The Saudi Tornados flew some 65 sorties during what was dubbed 'Exercise Saudi Green Flag '07', and they made use of the electronic warfare range at Spadeadam and of the Tain and Wiley Sike Air Weapon Ranges. No.3 Squadron's Typhoons provided 'opposition'.

In October 2009, the RSAF deployed five F-15Cs and a single F-15D of No.5 Squadron from Taif (together with some 175 personnel) to Base Aérienne 102 Dijon-Longvic in France to participate in Exercise 'Green Shield 2'. The exercise built on a previous Franco-Saudi joint exercise in 2007, when the French Air Force deployed to Saudi Arabia.

During Green Shield 2, the RSAF F-15s operated alongside the Mirage 2000s of Escadron de Chasse 01.002 'Cigognes' and the Alpha Jets of Escadron d'Entraînement 02.002, with Dassault Rafales of EC 01.007 'Provence' based at Saint-Dizier flying as the 'enemy'.

Two missions were planned every day (one in the morning and afternoon), with a variety of scenarios. Eurocopter EC 725 Caracal helicopters acted as CSAR assets during the exercise, while AWACS support was provided by Armée de l'Air Boeing E-3Fs.



General Alsafar and the aircraft on display.

From Tristar to five-star

As Saudi tourism increases the museums become increasingly important.

Mike Martin
visits Riyadh's historic aircraft.

Motorists driving along the busy eastern ring road in Riyadh get a shock near junction 10 – parked alongside the road is a Lockheed TriStar in the original Saudia livery.

For residents it's a landmark. For visitors it's an invitation to visit an aviation treasure trove – the Royal Saudi Air Force (RSAF) Saqr Al Jazira museum.

It is a showcase of mainly military aircraft that charts the history of the RSAF and its predecessor the Air Corps. It adds up to the 75-year story of military aviation in the kingdom.

The collection, housed within the museum itself and outside on a static park, features a roll-call of great aircraft, including a Westland Wapiti Mk 2, Texan T6, Boeing F-15C and a Panavia Tornado ADV.

So why does the Lockheed TriStar take pride of place at the entrance to the complex?

It is part of a masterplan by museum director Brigadier General Naser A. Alsafar to make the museum a major attraction in Riyadh.

The old civil aircraft is to become a five-star restaurant under the scheme that will see the opening of a new undercover area with lecture theatre and a new 24-seat aircraft simulator that will take visitors on an authentic 'flight'.

"Under the plans, the aircraft will become a VIP, five-star restaurant," said Alsafar. "It is part of a bigger project that

will make the museum more interesting to more people."

The aircraft will be the centrepiece of a complex of eating facilities in the entrance area of the museum.

The development plans for the museum also include creating a second large building for exhibiting aircraft, which will also house a lecture theatre.

"This is a new project and this facility will have a VIP room and lecture theatre which will be available for hire by companies and other organisations," said Alsafar.

The Brigadier General took over as director of the museum four years ago. During that time he has dramatically increased visitor numbers, which now total 30,000 a year.

"In this part of the world we do not have a culture of visiting museums like there is in Europe, so before we did not have a lot of visitors," he said. "I started a programme of school visits, inviting young people to come and learn about the history of the air force. It has been very successful and I think we can achieve 50,000 visitors a year."

The aircraft were mostly recovered from the seven RSAF bases in the country, with others acquired from overseas.

Pride of place goes to the (still airworthy) Douglas DC3 that US president Roosevelt presented to King Abdulaziz in 1945. Visitors are allowed to see inside the aircraft to get a glimpse of VIP air travel way back when.

Airline procurement experts heading for Dubai

The region's premier MRO event is set to take place at the start of February with a focus on attracting procurement staff from the region's leading airlines.

For the first time airline decision-makers are being hosted at MRO Middle East – the third edition of the successful maintenance, repair and overhaul conference and exhibition, produced by Dubai Air Show organisers F&E Aerospace and the Aviation Week magazine group.

Running for two days on February 1 and 2 at Dubai's Airport Expo, MRO Middle East will bring together top industry professionals from across the globe for a conference to discuss new technologies, new processes and asset management strategies.

The accompanying exhibition will see the return of 200 established companies such as Abu Dhabi Aircraft Technologies (ADAT), Boeing, Lufthansa Technik, Goodrich, Pratt & Whitney and Rockwell Collins.

Keynote speakers include Adel Ali, CEO of Air Arabia, Ken Gile, COO of flydubai, Iain Lachlan, divisional SVP engineering of Emirate Airline, and Abdulla Shadid, senior business development manager aerospace of Mubadala.

Most of the airlines across the Middle East North Africa (MENA) region will be represented by key executives who hold decision-making responsibility for procurement and purchasing of maintenance, overhaul or engineering equipment and services.

F&E Aerospace event director Michele Van Akelijen said: "The 'hosted buyers' programme has had proven success at our other events, giving exhibitors direct access to representatives of their target market.

"We look forward to providing a similarly worthwhile experience to our exhibitors at MRO Middle East."



Michele Van Akelijen: Proven success.

Malta tees up MRO challenge

Malta is mounting a serious challenge to MRO businesses through the MENA region.

It is currently reforming its legislature concerning the registration of aircraft, and its role as an MRO provider has been given a boost with the announcement that AP Malta - a subsidiary of the Maintenance Centre Munich Group - has obtained its EASA Part M approval from the regulating authority, Transport Malta.

This is MCM Group's next step in improving the services provided for the aviation industry by Malta following the construction of a hangar and receiving a base maintenance approval in June of last year.

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Fending Off Disaster

FOD means different things to different people. To some it spells 'foreign object damage', to others it's the cause of the problem and stands for 'foreign object debris'. But, whatever you deduce from the acronym, it's nearly always financially expensive and can – in the worst circumstances – cost lives. Geoff Thomas reports.

Concorde crashes in Paris in 2000: according to the official accident report, caused by a sharp piece of metal debris that fell from a preceding aircraft and cut one of the supersonic airliner's tyres.

Think of the infamous Concorde crash at Paris in 2000 that was caused, said the official report, by a tyre being punctured by rolling over a piece of metallic runway debris...but more of this later.

FOD is estimated to cost the global aerospace industry \$12bn a year. Around \$4bn is the direct cost for damaged parts. However, another \$8bn is taken up with indirect costs such as delays, plane changes, fuel costs, significant damage to aircraft and parts and even death and injury to workers, pilots and passengers.

Nobody has quantified the cost to the industry in the Middle East – but it is certain to be a considerable sum, especially considering the disadvantageous climatic and infrastructural issues prevalent in the region.

Airliners – and particularly their engines – are highly vulnerable to damage from the sort of debris that can often be found on airport aprons and runways. Tools, plastic bags, luggage, cargo straps, containers, loose parts, rocks, chunks of concrete, sand, clothing...the list is endless.

And, once a piece of FOD has been sucked into a running engine, the damage is likely to have been done. At best it may be expelled at high speed, causing damage to nearby aircraft and/or people, while at worst it can cause serious (even terminal) damage to fans, compressors, combustors and turbines.

Anyone who has attended an airshow, particularly when the airfield in question isn't used regularly for intensive military or commercial flying, will have witnessed a pre-show 'FOD walk' before the display aircraft arrive. Frequently the walkers comprise a line of military cadets, briefed to walk slowly along the active runways while

examining the surface and surrounding terrain and taxiways for debris and/or damage. They'll often be joined by a series of vehicles, where the driver and passengers are also responsible for identifying and collecting FOD. This is time-consuming and also expensive but it's vital work that helps to prevent damage and helps to prevent accidents too.

At busy commercial airports around the world, vehicles patrol the environs of the airfield at frequent intervals, sometimes delaying flight arrivals and departures. However, two airports in the Middle East – Doha and Dubai – have joined London's Heathrow and the airports at Vancouver in Canada and the USA's Providence, Rhode Island, by pioneering attempts to prevent FOD becoming more than a costly nuisance by installing a new system produced by British company Qinetiq.

Called Tarsier, the system uses radar and ultra-sensitive cameras to detect even small objects that may be lying around at airports and which may be ingested by engines.

In two years' operation at Vancouver International Airport, Tarsier found more than 250 items of FOD, including several classed as 'posing significant risk'. On one occasion Tarsier detected an earthing cable. Left undetected this could have caused a major incident.

In some cases Tarsier has also enabled users to halve their FOD retrieval time, providing runway capacity gains of up to four slots during peak hours. And today, in particular, slots are a valuable, tradable commodity.

Qinetiq's Tarsier is a millimetric-wave radar system that can detect objects on the runway surface so they can be precisely located and collected, even at night and in poor visibility. With

Continued
on Page 105



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London Heathrow's ultra-busy runways operating at 98 per cent capacity, there's little time to spare to drive FOD vehicles along the tarmac and the airport operators believe that the system will improve timekeeping as well as safety.

The Tarsier system has completed extensive trials at Heathrow and is now in operation. Two radars scan the entire runway area 24h a day, locating objects – even small parts whether metal, plastic, glass, wood, fibreglass or organic matter – that could have fallen from aircraft or vehicles or even blown-in from the perimeter road.

A display unit in Heathrow's operations centre provides the runway inspection team with a round-the-clock picture, allowing them to locate debris on the tarmac and retrieve it in a matter of minutes. This replaces the need to carry out vehicular visual runway patrols at least twice a day, during which the runway has to be taken out of operation, and improves on visual inspection, which can be unreliable in bad visibility.

Day/night cameras

Qinetiq's Heathrow contract also includes the installation of high-specification day/night cameras that allows remote identification of debris. The ability to identify quickly a part that has detached from an aircraft can enable the crew to be advised of the details.

As well as FOD, Tarsier can detect the presence of birds and wildlife, aiding operators with wildlife management teams and helping to reduce the risk of bird strikes.

But it's not only engines that are at risk. As mentioned at the start of this article, tyres are vulnerable to FOD damage – witness the fatal Concorde crash just after take-off from Paris Charles de Gaulle airport in 2000. That disaster was, according to the official accident report, caused by a sharp piece of metal debris that fell from a preceding aircraft and cut one of the supersonic airliner's tyres. At high loadings and speed, the tyre exploded, causing a fierce fire after chunks of tread from the tyre struck the underside of the wing, where the resulting shockwaves ruptured the integral fuel tanks.

Until all airports have a FOD detection system, other techniques are being developed (one is an engine-mounted radar-based device being developed by the UK's BAE Systems) to track small objects that may be sucked-in by aircraft engines while taxiing, taking-off and landing. A 12Ghz radar that could be installed as a permanent sensor on engines is in the final stages of development.

To detect blade damage, the device is designed to replace an engine's endoscope inspection plug, while to monitor FOD another sensor is affixed in the inlet.

Developed by BAE Systems' advanced technology centre in the UK, the radar can differentiate between stone and metal. This is important, because identifying the type of FOD helps engineers to determine what level of



inspection needs to be carried out, potentially saving time and money.

The blade-damage sensor would be placed within the fan casing to fire radar waves at the rotating blades, identifying blade problems by detecting changes in their natural vibration. The data interpretation software is currently at the proof-of-concept stage and the system has been developed using an electrically driven – and Rolls-Royce-provided – Pegasus engine from a Harrier 'jump jet' at Bristol in the UK.

But it's not only true 'accidental' man-made FOD that causes problems at the world's airports. Some of them, especially those in dusty, sandy parts of the world, have considerable problems with polluted air being sucked-in by aircraft engines.

And the same sandy atmosphere can also cause excessive wear on wheel bearings, undercarriage components and brakes. It can even cause vital static ducts and apertures to become blocked and interfere with sensitive electronic equipment.

Airports surrounded by sandy terrain are frequently covered by a visible layer of granular material and this is inevitably sucked-in by powerful turbofans.

Enhanced time-on-wing

Engines like a clean and relatively cool atmosphere so starting-up, taxiing and taking-off in unpolluted air, means enhanced time-on-wing and this can amount to many thousands of hours extra running between shop visits.

Hot and dusty airports, in regions like the Middle East, North Africa and the Gulf, do not only experience relatively dirty air at ground level.

When airliners fly sectors between airports in the region, the air being compressed by the engines may also contain minute particles of dust and sand and this can cause excessive wear and even the build-up of glass-like material – not dissimilar to what happened when volcanic dust from Iceland caused travel chaos in Northern Europe early in 2010 – on hot components in combustors and turbines.

Over the years, many have tried to filter the air being sucked in by aviation turbofans – but so far with little success. The quantities and flows are just so huge that any encumbrances to smooth and free-moving air are just impossible, so the

designers have to live with the fact that air pollution in some parts of the globe is going to cause more wear than in an ideal world.

Frequently, countries that experience a hot and relatively dusty atmosphere, tend also to have more wind-blown debris than is prevalent in cooler, cleaner climes. Engine original equipment manufacturers (OEMs) have known for years, at least since the dawn of jet travel, that their equipment would have a considerably reduced life in hot, dusty parts of the world.

Just ask the people responsible for military jet turbine engine maintenance in Afghanistan. Even on helicopters, where filters and separators are sometimes used, the problem is still very real and the dust traps don't go far towards solving the problem of highly abrasive material being ingested by sophisticated power-plants. The resulting reduction in time between overhaul (TBO) can be huge and by some estimates is as much as 50 per cent.

And, of course, it's not only natural dust that causes difficulties. When the wind is blowing dust into the air, any man-made material left lying around – like plastic bags, buttons, pens, coins, cardboard cartons, magazines and wastepaper – can also be sucked into engines with frequently expensive results.

Massive sum

The cost of damage to an engine in a FOD incident can easily exceed 20 per cent of its new cost. And, with airliner turbofans costing upwards of \$10m each, this can be a massive sum to incur accidentally – especially when the damage is preventable.

Believe it or not, tools left in an engine after maintenance (or even from when the engine was built) is a real issue. It's claimed that one engine OEM 'loses' thousands of dollars-worth of tools each month in just one of its plants.

Forgetting the value of the missing tools, the resulting damage from man-made FOD is even greater. So systems are now being put in place to produce toolboxes where a missing tool is identified with an optical sensor that automatically detects removal and replacement. And, to safeguard each individual tool, a user must identify him or herself by a PIN number or a swipe card! Rolls-Royce at Derby in the UK already has this system in place and it's likely that other OEMs will follow suit.

So FOD is a major issue for airlines and aircraft operators around the world – but especially in places like the Middle East where climatic issues contribute towards the problem.

Part of the solution is good airport management and enhanced education for aerospace workers. However, where there is a hot, dry climate and it's frequently windy, FOD will continue to be a challenging problem that inevitably results in more costly engine and airframe maintenance – a reality that has to be borne in mind in when vital business plans are being written.

Full speed ahead for LBAS

Bombardier MRO specialist puts faith in quality and turn-round.
Brendan Gallagher reports.

Andreas Kaden, MD of Lufthansa Bombardier Aviation Services (LBAS), was in bullish mood when speaking about the Learjet, Challenger and Global heavy checks carried out at the company's Berlin Schoenefeld base recently.

"In recent years we have felt some softening in demand in the Middle East as a result of the recession and the emergence of competition in the region but local providers still can't match us for quality and speed of turn-round in the activities at which we excel," he said at the Middle East Business Aviation (MEBA) show in Dubai.

Those activities include Challenger 48 and 96-month inspections and the equivalent five and ten-year checks for the Globals. "Our heavy-check line is consistently loaded at present," said Kaden. "We recently carried out 96-month checks on a pair of Challengers, taking just four weeks for each – we think that's a world record for turn-round speed."

Kaden believes the company's Middle Eastern prospects are also helped by a high-quality in-house cabin refurbishment and installation capability. This is supplied by co-located specialist OHS, with its FAA Part 145 (repair station) and Part 21J (design engineering) certifications.

"We helped them set up in business ten years ago," said Kaden. "Now they give us direct access to the craft skills



Andreas Kaden: The Middle East is a growth market that came through the recession better than many others,

and attention to detail needed for a truly competitive interiors service."

A third strength is LBAS's link with parent company Lufthansa Technik and its supremely inventive Cabin Innovation Centre in Hamburg. This systems skunkworks has turned out a stream of cabin management, in-flight entertainment and connectivity products in recent years, bringing them all together in the elegant Ethernet-based NICE network.

Now LBAS is offering to retrofit NICE and the associated NICEview 3D moving-map and passenger information during cabin refurbishments or scheduled

maintenance. "A heavy check is the perfect time to carry out this kind of work," Kaden said.

So far the company has retrofitted and certificated NICE on a Global Express – the aircraft is about to be handed back to the owner - and NICEview in a Learjet 60. The latter system has also been certificated in the Challenger 300 by Bombardier, and in the Global types by US MRO Midcoast Aviation.

The Global Express NICE implementation includes a dozen screens that can be plugged in at the seat, two large wall-mounted units, NICEview, WiFi cabin communications, and passenger management of functions such as IFE, temperature, lighting and window blinds via built-in and hand-held colour touch-screens.

"A customer is also beta-testing the use of passenger iPhones and iPads to do the same job," said Kaden. "All that's needed is an application downloaded to the user device."

The Middle East was a significant growth market for LBAS in the years following its creation in 1997, providing healthy business from Bahrain, Jordan, Saudi Arabia and the UAE. Kaden is backing his company for continued success in the region.

"It's a growth market that came through the recession better than many others," he said. "It's also close to emerging markets like India and China, and is supporting them until they can develop capabilities of their own. We hope to profit from that by providing heavy maintenance from Berlin – what we do is not easy to duplicate locally."

Kaden also aims to grow the business in the region via collaborative arrangements to complement its existing relationship with Dubai-based Execujet, which has a 20 per cent shareholding in LBAS. "We want to expand our footprint here and we think co-operation is the right way to do it."

ADAT unveils Abu Dhabi repair shop plan

Abu Dhabi Aircraft Technologies (ADAT) has unveiled details of its role as the world's first GE and Engine Alliance network partner providing an overhaul shop and test cell facility for the GENx and GP7200 models.

The new maintenance facility will be built for Mubadala subsidiary ADAT in Abu Dhabi with ground breaking expected in the next month or so and a plan to be fully operational by 2013.

The announcement represents the next step in the Mubadala Aerospace GE partnership which, since formation, has seen ADAT and SR Technics benefitting from enhanced technical and material support for the CF6 and CFM56 engines and, significantly, ADAT establishing a GE90 on-wing support capability – it is currently GE's Middle East on-wing support partner for the engine.

Homaïd Al Shemmari, chairman of ADAT and executive director Mubadala Aerospace, said: "This announcement is an important milestone for our MRO plans and another example of the strength of the Mubadala GE relationship. The ADAT facility will be a world first GE and Engine Alliance facility and brings significant new capability to the region."

GE Aviation general manager for the Middle East, Muhammad Al-Lamadani, said: "GE Aviation has been in co-operation with ADAT for two decades and we are delighted to enhance our relationship and MRO network with Mubadala."

GE and Mubadala signed an agreement in 2009. Since then GE has been supporting ADAT in the design and construction of facilities to meet the industry's global regulations by providing the necessary expertise during the development phase.

In addition to the GENx and GP7200, the new facility will also service the GE90 engines.

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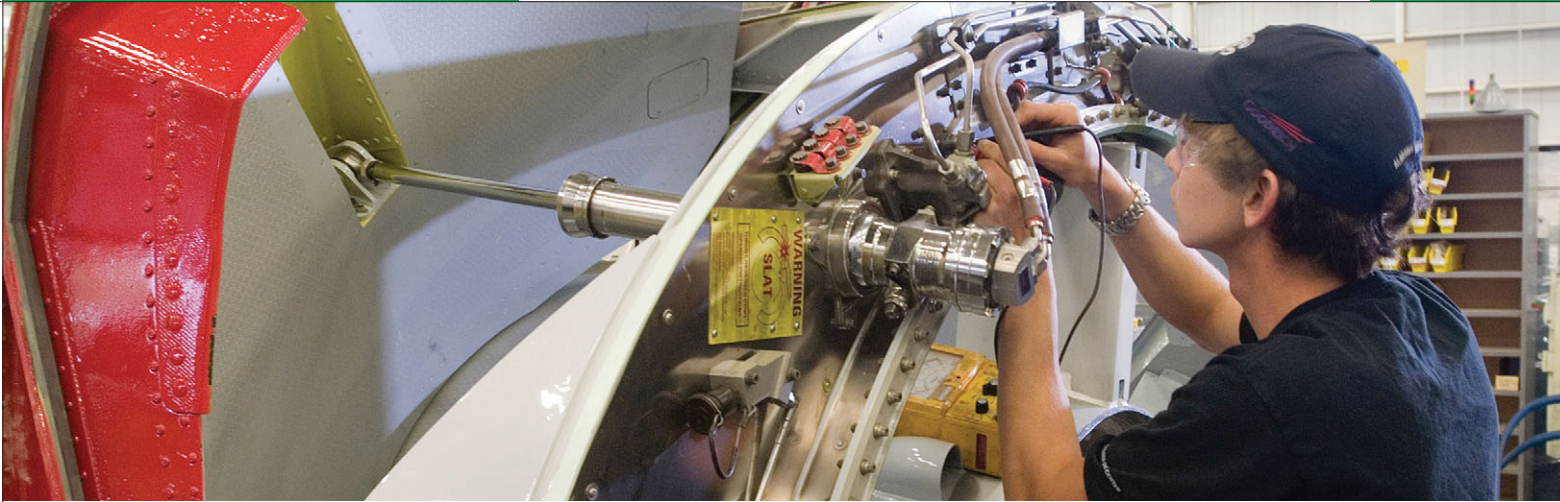
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A Goodrich technician services the thrust reverser on a CFM56 engine.

Dubai gives Goodrich the feel-good factor...

With the current rapid growth in commercial aviation in the Middle East and Gulf regions, global aerospace company Goodrich is reaping rewards after establishing a major MRO operation in Dubai's Jebel Ali free zone only three short years ago.
Geoff Thomas reports.

Just three years after making the decision to invest in the MRO growth market of the Middle East, Goodrich is feeling the benefit.

A key part of Goodrich's global MRO strategy, the Corporation's Dubai 'campus' continues to add new customers and enhance its product and service offerings to customers in its Europe, Middle East and Africa (EMEA) region. The Dubai 'campus' joins existing Goodrich facilities in Australia, China, Singapore and the USA.

In 2009, Goodrich added the capability to service electronic engine control accessories, covering powerplants such as Rolls-Royce's Trent 500, 700 and 800 powering aircraft such as the Airbus A330 and A340 and Boeing 777. Also in 2009, Emirates chose Goodrich in Dubai to perform evacuation system servicing for the airline's rapidly growing fleet of around 90 Airbus A380 aircraft. Goodrich also provides component MRO servicing for GE90, CFM56, IAE V2500 and Engine Alliance GP7200 powerplants.

Recently, Goodrich and Air Arabia signed a service agreement for nacelle and thrust reverser maintenance on the airline's Airbus A320 fleet. Comprising more than 50 aircraft, all powered by CFM56-5B engines, the ten-year contract provides locally accessible support to the fast-growing low-cost carrier that is based in Sharjah, UAE.

Long-term nacelle services

Bob Gustafson, VP and GM of aftermarket services at the Corporation's Aerostructures business said: "This agreement is a good example of another airline recognising the value of securing long-term nacelle services with a locally placed nacelle maintenance, repair and overhaul facility.

"As more airlines recognise the time and cost savings achievable by having repairs on both large and small components undertaken close to their main operating bases, our Dubai service centre will see continued growth."

Joel Haldemann, VP of MRO for Goodrich's EMEA region explained further: "We are positive about the future for our services in Dubai for many reasons. Locally-based airlines still have a significant number of aircraft on order for delivery into the region; airlines are continually receiving new aircraft; and there is an influx of new low-cost operators

to the area. Our aftermarket strategy is to be close to our customers both physically and regarding the support we offer. For this reason Goodrich became one of the first original equipment manufacturers to locate MRO services in Dubai. It was the right move."

Goodrich's Dubai 'campus' offers a full range of MRO and support services for components and systems, including nacelles, thrust reversers, cargo systems, de-icing equipment, engine controls, rescue hoists and winches, angle of attack vanes, sensors and aircraft evacuation components. The facility also delivers asset stocking and management services to support AOG and other critical needs.

Exclusive servicer

Goodrich has also recently agreed with local international airline Emirates to become the exclusive servicer of evacuation systems on its rapidly growing fleet of more than 90 Airbus A380 'super jumbo' aircraft. This adds to Goodrich's existing MRO support for the airline's cabin attendant seats, cargo systems, electronic engine controls and both sensor and nacelle systems.

Adel Al Redha, Emirates' executive VP for engineering and operations, said: "Goodrich's Dubai facility is a clear demonstration of its commitment to increase the volume of business and support within the region and in particular the UAE. Like Emirates, Goodrich is a world leader in its field and we look forward to a long and mutually beneficial relationship."

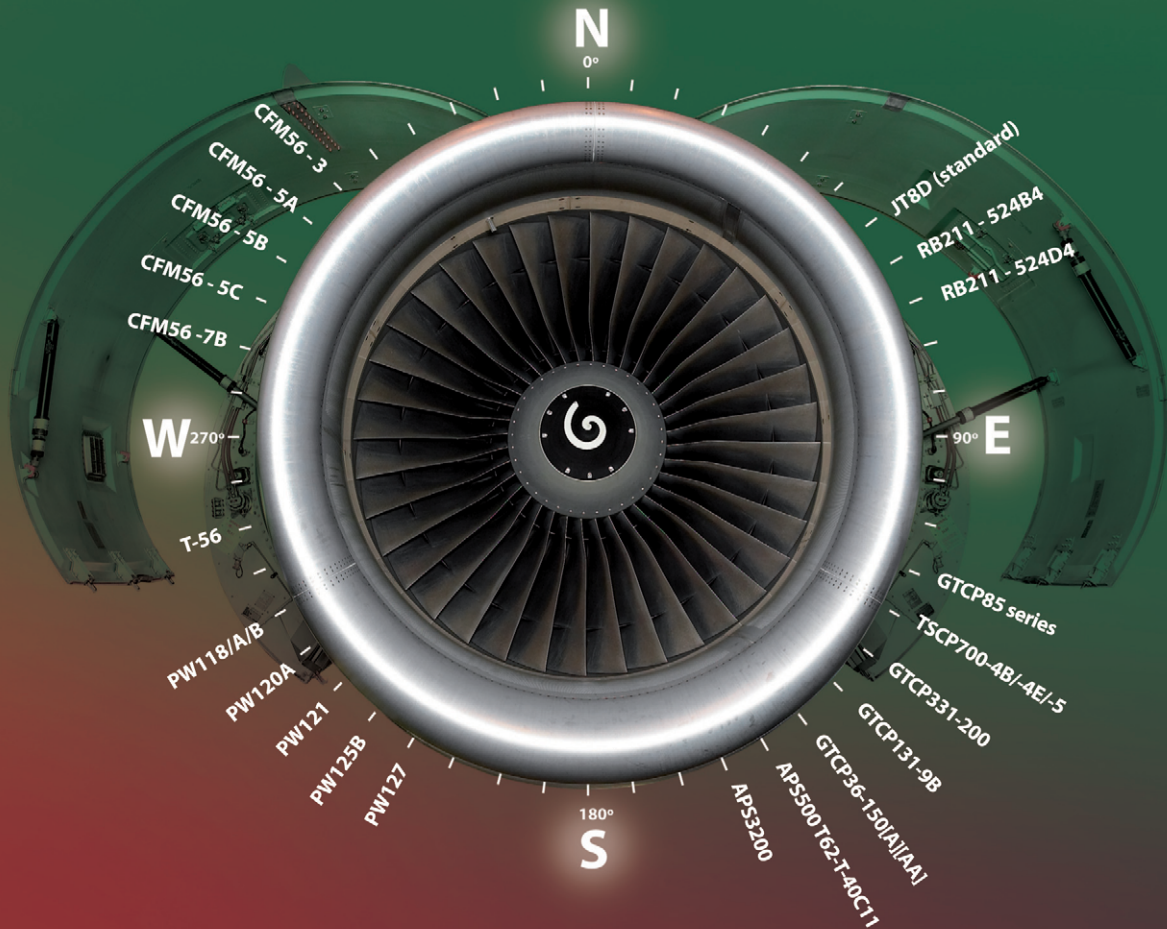
Goodrich and Abu Dhabi's Mubadala Aerospace recently agreed to establish a JV company in the UAE, at the oasis town of Al Ain, to perform MRO work on commercial aircraft landing gears. The JV will be the Middle East's first dedicated landing gear service provider once it becomes fully operational in 2012.

The initial agreement was signed during 2010's Farnborough Airshow by Mike Brand, president of Goodrich landing gear and Homaid Al Shemmari, Mubadala's executive director. The company will initially support both Boeing and Airbus aircraft including the A380 and B777, with plans to extend to other commercial and military markets over time.

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Flydubai's inside job pays dividends...

Marcelle Nethersole looks at the world-first interior for Dubai's low-cost carrier.



Kent Craver: "The bottom line is, passengers are bored when they sit on a plane so we thought we needed to engage people."

Dubai-based flydubai is reaping the reward after taking delivery of the first 737-800 to feature the new Sky Interior from Boeing last October.

"We are very proud we were the first to offer our passengers an enhanced on-board experience with the brand new Boeing Sky Interior," said Ghaith Al Ghaith, CEO, flydubai. "We have achieved much in our first 16 months of service. The Sky Interior fits our identity."

The flydubai 737 is also the first aircraft to enter revenue service fitted with a Lumexis fibre-to-the-screen (FTTS) AVOD IFE system.

Al Ghaith explained: "The FTTS system is revolutionary because it uses fibre optics rather than traditional copper piping. This significantly reduces the cost of the system and makes it far lighter than other IFEs in use today. Any reduction in weight reduces our fuel costs and, therefore, ensures we can keep our ticket prices low.

"The system is incredibly flexible and we are working closely with Lumexis to develop it. Our IFE will be available as an optional extra, in the way that baggage and meals are. Passengers will have the ability to choose different parts of it, depending on their preference and how much they want to spend. And, as flydubai likes to do things differently, we plan to offer functionality that other airlines traditionally don't have."

The 737 Boeing Sky Interior is the first of the newest generation of aircraft interiors to fly in revenue service. And, certainly, passengers are benefitting from a completely improved package since the Next-Generation 737 was introduced back in 1997.

"The superior passenger experience is the result of many years' work by Boeing employees and suppliers," said Boeing regional director, Kent Craver.

"This interiors philosophy was developed through extensive, ground-breaking research, which included a focus on what we, as humans, need during air travel. The bottom line is, passengers are bored when they sit on a plane so we thought we needed to engage people. When we looked at ways to improve the passenger experience, a psychologist told us that we needed

to create a separation between events on the ground and in flight and that this separation is created naturally when people are welcomed. We developed the interior architecture to provide this welcome and to meet both the articulated and unarticulated needs of passengers while on the aircraft.

"It was a challenge," admitted Craver. "But what our engineering team ultimately came up with is a suite of changes that are relatively simple to make. In fact, a number of these modifications could potentially be retrofitted as interchangeable parts that operators could use in place of current airplane components."

The 737 Sky Interior cabin features economy seats made by Recaro – although there are also extra legroom seats available – modern, sculpted sidewalls and window reveals. New, larger stow bins allows them to accommodate more bags than before, while taking up less space in the cabin. An assisted mechanism on the bins gives easy access, and as they pivot up and out of the way, it offers more headroom around the aisle seats.

"Airlines can select from different lighting schemes that range from a welcoming, soft blue overhead sky simulation to a calm, relaxing, pallet of sunset colours," said Craver.

"The LEDs (light emitting diodes) are brighter and replace incandescent signage, attendant and halogen reading lights. With an estimated 40,000 hours between replacements, LEDs last 10 times longer than the previous standard of lights.

"Other features that passengers will appreciate are a quieter cabin, intuitive placement of switches and call buttons, and improved sound quality and clarity through new speakers in each passenger row."

Craver explained that this package will begin certification testing soon and will be fully in service by early 2012. "The package will make the airplane a full seven per cent more efficient than the first Next-Generation 737 delivered."

Since flydubai took delivery of the first 737 to feature Sky Interior, a total of 60 airlines and leasing companies have ordered the new interior for 1,689 of their aircraft.

Brendan Gallagher *visits the Saudi Arabian company that is taking on the big boys of the aircraft completions world.*

Hercules: a giant shop window for Alsalam

A Lockheed Hercules landed at Riyadh's King Khalid International Airport in early December and taxied to one of the hangars operated by Alsalam Aircraft.

On the face of it, that was nothing unusual – the company has been carrying out heavy maintenance on the Royal Saudi Air Force's C-130 transports for more than two years (see story page 76). But this was no ordinary 'Herky Bird'.

The gleaming paint job was the first indication that this aircraft won't earn its keep hauling soldiers and equipment. A closer look revealed that the customary line of modest porthole-style windows along the forward fuselage had given way to large rectangular transparencies obviously designed to facilitate sightseeing and admit plenty of natural light to the cabin. And what a cabin...

The aircraft was one of a pair for which Alsalam has developed a sumptuous VIP interior. Work on the first has just been completed – December's flight was for acceptance testing purposes.

The second is now receiving its interior against a scheduled delivery date at the end of March. The lead ship took 18 months as Alsalam built up its back-shop capabilities; the second is on course for completion in half the time.

Ultra-comfortable transport

As well as providing stylish and ultra-comfortable transport to some of the remoter airfields in the region, the aircraft will be a flying shop window for the completions skills of Alsalam Aircraft.

The spartan webbing seats and bare metal of the military freighter's hold have given way to an elegant compartmented space reminiscent of the private trains of the past, with panoramic windows, carpeted floors, gleaming cabinetwork and plush single and double seats. There are two lounges, a stateroom with double bed, a well-equipped galley, spacious lavatories and washrooms, and a shower.

No VIP interior is complete without the best of in-flight entertainment, and three of the shining veneer walls are adorned with large-format flat screens capable of displaying video in the latest high-definition formats.



Alsalam's work on the C-130 transformation to a VIP jet is a testimony to the skilled local workforce.

The number of companies in the world that have completed a modern wide-body aircraft to VIP standards almost entirely from their own resources can probably be counted on the fingers of one hand but joining that elite number was the task that chief executive Mohammed Fallatah set for himself and his team at Alsalam.

The Riyadh-based company was set up 20 years ago as part of the Peace Shield offset programme. "We realised right from the start that VIP interiors was an area we had to get into," said Fallatah. "We did our first, a Lockheed TriStar, in 2001-2 and since then we have completed seven or eight major projects for Saudi customers. We're now talking to a couple of potential customers from a nearby country."

Fallatah bases his hopes for new business on a range of in-house capabilities that he describes as unique to the region. "We do D-checks, modifications, design, installation and certification," he said. "In terms of scale, we can do anything short of a 747 or an A380 – all the in-service Airbus and Boeing types, plus the A350 and 787. As for quality, we can match the biggest players in VIP completions: the evidence is there in the two C-130s we are in the process of delivering to a Saudi customer."

No serious VIP completions contender can afford not to have a high level of in-house craft skills – sub-contracting tends to cost more and makes quality and schedule harder to control. So two years

ago it was decided that Alsalam would develop its own comprehensive back-shop capability. "Our aim is to make as much as we possibly can for each interior that we install," said Fallatah.

Located in one of the company's three 5,300sqm hangars, the workshops can handle fine wood veneers, leather and fabrics, a range of structural materials including fibreglass and composites, seating, and the manufacture of large units like lavatories and galleys.

Highly skilled

The preparation of wood veneers is one of the most painstaking and highly skilled activities to go into the creation of a VIP interior. Currently going through the Alsalam wood shop are panels destined for the second Saudi C-130. The work is being carried out by an all-Saudi team, who learned their craft from an Austrian company brought in to execute the first shipset and provide on-the-job training.

The seat shop is busy with repair and refurbishment of the C-130's crew seats and with extensive work on their VIP equivalents. The core metal structure for the latter is bought in from a US supplier, then Alsalam does all the rest: shaping foam cushions, fabricating armrests from sheet metal and other outer structure from composites and fibreglass, and covering the whole with fabric and leather cut and sewn in the tailors' shop.



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Jet Aviation up for a sizeable challenge

Business aviation throws up a number of challenges to completions centres. Liz Moscrop and Marcelle Nethersole report.

Aircraft completions aren't complex when left to the experts – but even they can receive some big and challenging requests from customers.

Jet Aviation is about to take on one of those big challenges at its Basel centre, where it will be the first to take on a wide-body Boeing B747-8 outfitting job for a Middle Eastern customer.

Chief executive Peter Edwards said: "This is likely to be the largest and most complex completions contract ever undertaken because of its sheer size and the fact it is an all-new aeroplane. We have to certify it to current standards using a new generation of IFE and communications equipment."

Although the aircraft will be finished in 2014, Jet Aviation will use technology that is tried and tested today. Edwards explained: "We look for proven technologies in applications. We do not want to come in too early in the cycle. Reliability demand is high and we want to put the right level of maturity into our systems. We use open architecture, which offers great communications possibilities."

He added that passengers wish to integrate their personal devices with on-board systems. Blu-ray and surround speakers are popular.

Two years in the hanger

The aircraft is due to arrive in 2012 and will spend around two years in the hangar. The cabin will be a classic design.

VVIP travel has taken a new turn recently with customers thinking bigger is better. One company that knows this more than most is Gore Design Completions, which supplies custom aircraft interiors to head-of-state and VVIP aircraft, including the latest generation wide-bodies.

"We perform interior design, engineering, avionics and project management service for customers worldwide," said Jeff Potter, director of sales.

The company, based in San Antonio, Texas, currently has three wide-body and two narrow-body aircraft in its hangar undergoing completion. It specialises in Boeing and Airbus airframes only, ranging from the narrow-body interior of the Boeing Business Jet and the Airbus Corporate Jet to the wide-body Airbus A330/A340 and Boeing 767/787.

In October it received a Boeing 777-200LR for

completion to its newly-expanded hangar. The aircraft, for a Central Asian head-of-state, is the first of its kind to be modified at the company.

"We previously completed two other aircraft for this customer dating back to 2004," said Potter. "The customer's second aircraft, a Boeing 737, was completed late last year. Knowing the customer's preferences helps us build an interior that they will love but, at the same time, it is important for us to keep the design fresh and interesting."

The new interior will include a presidential suite and conference room. "The specification calls for a luxurious VIP suite to include a stateroom, dressing room and office," explained Potter.

Canadian completions company Flying Colours topped all previous requests with the suggestion of a stone floor for a Global 5000 business jet.

However, instead of showing the designer to the door, the Ontario-based company set about sourcing the materials and delivering the goods without a huge weight penalty.

"The green aircraft was flown from the Bombardier Global Completion Centre in Montreal to Flying Colours for the modification and then to Asia for delivery to a very satisfied customer," said Flying Colours' Eric Gillespie.

The granite floor was manufactured by Germany's List Components & Furniture and was installed in the entry/galley area, forward lavatory and aft lavatory area of the Global 5000.

"This new and cutting-edge process saw the granite sliced into 2.5mm pieces and attached to a lightweight backplate, which gave it high elasticity without losing the necessary floor-loading requirements," said Gillespie. "The floor is custom-engineered to fit a specific area and sealed to prevent liquids from penetrating the stone."

Completion companies have seen an escalation in the demand and expect the market to have major growth potential.

According to Peter Edwards of Jet Aviation the Middle East is a key region.

"We're celebrating five years in Dubai," said Edwards. "It's a very important region, which is exactly why we are in Dubai. But it's also an exciting region, too, as we are offered various challenging projects from customers here."

Acquisition will create new opportunities for completions in the region, writes **Brendan Gallagher.**

Goodrich takeover set to boost the Middle East interiors market

The Middle East's growing corporate and VIP aircraft interiors capability is expected to benefit from the market entry of Goodrich Corporation, which plans a substantial local presence.

The US systems giant acquired the cabins business of DeCrane Aerospace for around \$280m last September and gave its new wares a showing under the Goodrich Interiors banner at December's Middle East Business Aviation (MEBA) show in Dubai.

"We want to expand our position in this market," said seating business development manager Mark Hulan. "We went to MEBA to support the aircraft manufacturers that we supply – Bombardier, Dassault Falcon Jet and Embraer – as well as completion centres Lufthansa Technik and Jet Aviation."

The platform for an advance into the Middle Eastern business/VIP market is the company's existing facility in Dubai, which includes among its activities the support of Airbus A380 landing gear and escape slides. "We plan to offer enhanced support for our business/VIP products through this location," confirmed Hulan.

Among the products and services showcased in Dubai were a new mood lighting system based on LEDs claimed to yield "the most appealing colours on the market" and integrated touch-screens, full-colour LCD switches and



Mark Hulan: "We want to expand our position in this market."

other systems embracing high-definition IFE and cabin management. The company is also offering the full range of furniture, fittings and materials, including seats, divans and tables, composite and plastic mouldings, and fine wood veneers.

The former DeCrane cabin systems operation employs 850 people at six facilities in the USA. Integrating their efforts with Goodrich's existing capabilities will create a range of products that should meet the needs of even the most exacting completions centre.

Goodrich was already active in cabin lighting and passenger service units (PSUs) before the acquisition, providing a full suite of products for types like the Bombardier Globals and Challenger 300.

It's in the domains of in-flight entertainment and seating that the DeCrane deal brings something new to the party. Among the heritage offerings highlighted at MEBA was the Platinum Elite high-definition (HD) video system, which has been available for customer deliveries from the first quarter of 2010.

Blue-Ray player

Offering full 1080p HD resolution, the system includes a specially developed Blu-Ray Player and a range of LCD screens. According to the vendor, the use of aircraft-standard video coaxial cable and connections facilitates installation and cuts cost and weight.

Another DeCrane IFE product – Select – was chosen in 2009 for installation in Bombardier Challenger 850 business jets completed by Canada's Flying Colours. It offers audio/video-on-demand under the control of a touch panel.

Goodrich's existing seats business serves the military and air transport cabin crew markets.

The addition of products from the former DeCrane Aircraft Seating Company extends its reach into the corporate and VIP sectors, and opens the door to a list of blue-chip OEM customers – Agusta, Bell Helicopter, Bombardier, Cessna, Dassault Falcon Jet, Embraer, Eurocopter, Gulfstream, Piaggio, Pilatus, Raytheon and Sikorsky.

The catalogue includes 9g and 16g-certificated VIP seats and divans, and a range of tables.

The seats feature flexible floor-track mounting, ergonomic, low-friction controls, multiple headrest styles and shapes, flexible armrests and several different leg-rest designs.

There is provision for integration of third-party products such as in-arm tray-tables and IFE screens.

Why le trek to Toulouse is worth it!

The Airbus Corporate Jet Centre (ACJC) – the specialist in Airbus Corporate Jet VIP cabin completion and associated services based in Toulouse, France – has delivered its sixth cabin to an undisclosed customer in the Middle East.

The centre has also confirmed a growing backlog of Airbus Corporate Jet completions and the increase in its resources to match its rising services activity.

The ACJC's latest delivery – made at the end of December – was an A320 Prestige with a wide and tall VIP cabin featuring an elegant forward lounge with club seats and a divan, a bedroom with a large en suite bathroom, and two VIP guest areas.

This aircraft is the first operational A320 Prestige equipped with Airbus's GSM on-board system. ACJC has succeeded in adapting the sophisticated GSM technology to the VIP cabin and airframe systems, enabling guests to use their mobile phones during flight.

The cabin also features mood lighting, new touch-screen technology, satellite TV and advanced passenger entertainment and communications – including a passenger flight information system (PFIS), Internet and audio & video-on-demand.

"With the brand-new Airbus GSM on-board system, an exceptionally low noise level of significantly less than 50dB in the bedroom, and a cabin lighter than its target weight, this latest outfitting reaffirms our technological know-how and leadership in ACJ cabin completion," said Benoit Defforge, CEO of ACJC.

Over the last three years ACJC has completed and delivered five VIP cabins and has been so successful in winning new business that its facilities are essentially full until mid-2012. Of the seven ACJ cabins planned, four are currently being outfitted in the centre's facility.



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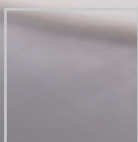
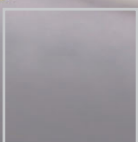
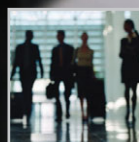
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SECURITY ON THE EDGE

As airports across the region grow, so must the security.

Keith Mwanalushi
reports.

With the current airport construction taking shape across the Middle East, the need to boost and modernise airport security in the region will increase. Spending in this sector is driving demand for the latest in fool-proof security systems, perimeter security and surveillance gadgets.

Airport security was the major focus at this year's 2011 Intersec trade fair, held from January 16-18 in Dubai. Some 22,000 trade visitors and 800 exhibitors gathered to showcase the latest technology and apparatus in commercial security and information security.

"With the aviation industry in the Middle East on the high growth path and new terminals and airports being planned or under construction across the region, airport security and surveillance systems made for an interesting topic at Intersec 2011," said Ahmed Pauwels, chief executive officer of Epoc Messe Frankfurt, organiser of the event.

The increase in the levels of international terrorism has also necessitated a hard look into the current state of affairs in this sector by governments and security agencies as well as the private sector.

The airport security market is giving indications of another boom period similar to that experienced after 9/11. However, it is only relatively recently that more attention is being focused on perimeter security – this sector has for some time been the most vulnerable area of airport security.

"A lot of airports were built 20 years ago. In those days, it was more about people stealing things or someone straying on to the runway. Today it is a completely different environment," said Jerry Tobey, vice president international business development for Raytheon's Network Centric Systems division.

"There are also cities which have grown up against the perimeter, and airports which have expanded, pushing a lot of services which used to be within a secure environment, like catering, outside."

In 2009 Raytheon won a \$100m contract to supply and install a new state-of-the-art perimeter and anti-terrorist surveillance system at airports in the New York area. Without mentioning specific locations, the company is looking at having the same system installed at various MENA airport sites.

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on Page 120

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The technology deploys a mix of radar, sensors, video motion detectors, closed-circuit TV monitors and electronic fences. Tobey said Raytheon's approach is to assess all the threats and vulnerabilities and come up with integrated solutions.

Raytheon was chosen by the Kurdistan regional government in northern Iraq to provide security solutions at the new Erbil International Airport. Under the multi-phased contract, the company has installed systems for point-of-entry security including monitoring and access control, vehicle screening, as well as passenger and baggage screening. Follow-on phases include multiple integrated sensors and equipment to secure the entire airport perimeter and beyond.

Within the airport security market, perimeter solutions is a growing business and understanding the unique challenges facing those responsible for security in the region can prove lucrative. That is according to Adam Wilding-Webb, regional manager for Middle East and North Africa at Future Fibre Technologies (FFT).

"Organisations in the Middle East are starting to understand the benefits of having a fibre optic-based intrusion detection system to protect their perimeters both from an operational and cost perspective," said Webb.

The last few years have seen significant advances in perimeter intrusion detection technologies, with improved reliability and accuracy. However, Webb argues that from a security perspective, the perimeter protection of the airport has been the 'poor cousin' to the more obvious security measures associated with passenger and baggage screening. He said that with landing charges generating such a small proportion of total airport revenue, the amount invested in protecting and securing the perimeter is also correspondingly small.

"While some airports may have CCTV cameras in the airside ramp and apron area, that is about the extent of it," Webb said. "Beyond the apron, there is often nothing but random patrols and a fence standing between intruders and the aircraft. It's a difficult situation for airport operators as there is comparatively less income earned on the tarmacs than there is within the terminal, where retailers' rents help cover the cost of improved security measures."



Dubai has rejected the use of body scanners.

In June 2009, the consortium ARINC-Thales was awarded a €40m change order for an extension to its existing contract at the New Doha International Airport (NDIA). For this extension, the consortium will jointly continue to provide secured systems at one of the world's most ambitious airport projects in the Gulf region, planned to rise to 50m passengers per annum for its final phase.

"Thales is responsible for the complete design and delivery of the integrated security and safety systems, providing the NDIA with the most efficient and trusted solutions implemented for critical areas such as modern airports," said Olivier Badard, Thales regional president MENA.

"Thales will provide systems that include closed-circuit television, IPTV, access control, airport-wide IT communication, airport-wide structured cabling, telephony transport system-SDH, IT network management and fire detection and building management systems integration," he added.

Thales has a long-term presence in the region in all four of the group's business segments – aerospace, space, defence and security. Recently, the company consolidated its regional presence by bringing together its Middle East and UAE headquarters under one roof at Dubai Airport Free Zone.

Thales was also awarded another vital contract by Dubai's civil aviation authority. "The DCA has named Thales as nominated sub-contractor for the security and communication solutions for the expansion of Dubai International Airport (DXB) terminal three concourse three.

Thales also specialises in the provision of a comprehensive range of surface radars, ground surveillance, civil and 3D multi-function radars. In the MENA region, the company has installed such radars at various sites including international airports in Dubai, Abu Dhabi, Kuwait City, Cairo and Basra in Iraq.

Lucrative prospects in the region have attracted other players. Northrop Grumman used the Dubai Airport Expo as a platform to demonstrate its integrated airport security solution – Airtight.

The company indicates that the Airtight solution offers airports a cost-efficient path to strengthening security awareness throughout restricted and controlled zones, with minimum additional burden on existing resources.

A spokesman said: "Airtight uses data from existing airport sensors and infrastructure to create a common operating picture, which can then be shared with the emergency services and first responders, resulting in a significantly enhanced security operating environment."

Security breaches are not uncommon – having the wrong person in the right place poses a significant security risk.

Apart from the travelling public, hundreds of other people, including staff members, visitors, suppliers and service providers, use airport facilities on a daily basis. Access control is necessary to control who goes where and when.

Cairo's new terminal three is already running an advanced context-aware technology that controls all employee access to critical ramp areas. The breakthrough technology is developed by ARINC. Employees at the new terminal are linked only to those IT applications they actually require, according to the profile, work assignment, type of electronic access and location.

Following the deployment of biometric identification technology at Cairo Airport (CAI), the region is gradually rolling-out biometric authentication as a more secure identity solution.

Paul Hickox, director of Middle East airport systems at ARINC, said that when qualified passengers use the automated biometric gates, Cairo airport police could then focus more attention on the manual screening of sensitive passengers. He said this is a major benefit to frequent travellers and a competitive advantage for airlines.

The ability to prove who you are has major social and economic implications. For governments, biometric authentication is emerging as the cornerstone of secure border controls. For businesses such as airports, it offers unprecedented control over access to sites and data.

A case study by Thales details a threat assessment at a Middle Eastern airport that faced multiple risks and required a mitigation plan. Olivier Badard explained: "The study has clearly demonstrated the need for integrated security systems in a complex airport environment, and the lack of overarching security command-and-control framework.

"When an incident occurs, the issue is to be



New Doha Airport enjoys ambitious security to match the design of the terminal.

able to understand what happens, to communicate and work amongst security stakeholders to resolve the incident. What is needed is shared situation awareness and the ability to co-ordinate actions. This is why Thales is proposing new control centre architecture that we are calling the Thales Hypervisor.”

This is based on an open architecture that makes it possible to transform security management into information superiority for airport operators and security. The system makes it possible to harness existing systems, such as video surveillance, access control, passenger information, intrusion and fire detection.

After the failed attempt to blow up flight 253 – a Detroit-bound aircraft – on Christmas Day in 2009, passenger screening came under intense scrutiny. While fingers were being pointed as to who was to blame, the industry hastily responded with the introduction of new body scanners.

Controversy surrounding the use of this technology has been observed around the world – not just for their intrusive nature but because some experts say that the expensive devices may not detect the nature of explosives that was carried in the underpants of flight 253’s terrorist.

The scanners have raised concerns with various religious and cultural groups and nowhere has this been more evident than in the Middle East. Last year authorities in Dubai ruled out the use of full body scanners.

Dubai police’s director of airport security, Brigadier Ahmed bin Thani, said that the devices do not correspond with national customs and ethics.

“The use of such a device violates personal privacy and it raises a very sensitive issue for passengers, in addition to the fact that it does not comply with our national ethics,” he said.

“Some 3,700 people have been trained to deal with security threats and public order at Dubai’s airports.”

In the wake of last year’s discovery of two suspected Al-Qaeda bombs posted from Yemen, the air cargo sector is witnessing a major shake-up. Regulations surrounding air cargo security is arguably still governed by out-dated legislation and policies in relation to modern security threats.

As per the Chicago Convention, it is not the responsibility of the country in which the cargo transits to X-ray or inspect the cargo. This responsibility resides with the country from which the consignment originates.

One of the bombs (hidden in a printer cartridge), left Sana’a, for Doha, in the hold of a passenger aircraft. Authorities in Qatar were unable to detect the device. It was then transferred on to a Dubai flight, where it was intercepted on arrival. The second bomb device was placed on a UPS freighter from Yemen destined to Chicago but was only discovered after a tip-off from Saudi intelligence, and the aircraft

was subsequently searched at East Midlands airport in the UK.

These attempted attacks have brought to light the vulnerability of air cargo to terrorism and other security breaches. As a result, the ICAO has recently announced strengthened air cargo security measures.

The new measures emphasise more extensive screening of cargo, mail and other goods prior to placing them on board aircraft, and better protection from unauthorised interference from the point where security controls are applied until departure of the aircraft. Also included is the strengthening of provisions related to the deployment of security equipment, the security of air traffic service providers, training programmes and instructor certification systems, and cyber threats.

Soon after the bomb devices were discovered on the UPS aircraft and in Dubai, the US government sent a technical team to Yemen to train Yemenis in the use of new more sophisticated airport screening equipment.

“I am pleased with the work of our inspectors and the co-operation of Yemeni officials to improve cargo security practices,” said John Pistole, administrator at the US Transport Security Administration (TSA) during a visit to Sana’a in November. “We face a determined enemy, one who modifies his actions looking for any opportunity to exploit security.”

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 **AVISA STANDS FOR AVIATION SAFETY**

Aerospace and defence companies are at risk of attack – not necessarily on their people but on another valuable asset, their data. Dr Alastair MacWillson, global managing director of technology consulting firm Accenture’s security practice, looks at the threats and at how IT security can fight off these attacks.

How well is aerospace protected against the hack attack?

For more than two decades, businesses and governments worldwide have struggled to understand the nature and scale of the cyber threat facing them and to develop appropriate responses.

In many cases, the strategies adopted to manage and mitigate these risks have included heavy investment in information assurance. Despite this investment, the view of many professionals is that a persistent adversary will still get through most organisations’ defences.

The cyber threats faced by aerospace and defence companies – and the corresponding need for robust, high calibre cyber security – are rising faster than in most other industries, and arguably quicker than in any of them.

As the threat of cyber attacks has escalated in recent years, aerospace and defence companies have been in the front line. By the nature of what they do, many have long faced a requirement to comply with standards of cyber security set by government defence departments. With one or two high-profile exceptions, the industry appears to have performed quite well in protecting its critical data assets and systems.

However, appearance and reality in cyberspace can differ widely. It is quite possible for an organisation to suffer a damaging intrusion, or theft, without even realising it. With this in mind, aerospace and defence companies need to continually ask two key questions:

- How well are our systems and data protected?
- How do we know they are as well protected as we think they are?

Our experience shows that, while most industry bosses can answer ‘yes’ to both questions, they are less confident on the second one.

Concerted on-going investment in cyber security systems and processes can help to achieve high levels of security, but does not guarantee it in itself.

The investment needs to be targeted and implemented in the right way and in the right areas, under a coherent, consistent and holistic strategy that takes into account all the related risks.

In Accenture’s view, there are four key reasons why cyber threats are escalating particularly quickly for aerospace and defence companies:

- **The industry’s attackers are becoming ever more professional**
It is many years since hackers progressed from being “script kids” to highly organised professional criminals. But while all organisations face this threat, aerospace and defence companies rank alongside government departments as the organisations most likely to attract the attentions of well-resourced – and potentially government- or terrorist-funded – hacking groups.

Organised criminals looking to steal and sell intellectual

property assets would also put aerospace and defence companies at or near the top of their targets.

- **Escalating innovation in workforce technologies**

Within aerospace and defence companies, the growing usage of emerging technologies, such as Internet-based communication and collaboration via mobile handsets, is creating challenges for cyber security processes.

Many security architectures still in place today were designed in the pre-Internet era and, not surprisingly, are now struggling to keep pace with the risks. Furthermore, many of the entrants to today’s workforce are habitual users of online applications that are almost impossible to monitor and control – such as social networking sites – and regard access to these as a personal right rather than a privilege. Clearly, anyone accessing such services via a device holding sensitive corporate data is exposing the organisation to unwanted and unnecessary cyber risks.

- **The increasingly “elastic” aerospace and defence enterprise**

aerospace and defence companies are seeking to “do more with less” in IT and realise efficiency gains. In a globalized and interconnected world, these efforts inevitably include making increasing use of virtualisation, and sourcing a widening range of services from external suppliers – potentially including cloud-based providers and those based in lower-cost locations offshore.

A further effect of the drive to do more with less is to put pressure on budgets, including that allocated to IT security, creating further strains in cyber security initiatives.

- **The industry’s highly interdependent supply chain**

One of aerospace and defence’s defining characteristics is the close integration and inter-reliance within the industry’s value chains, which often encompass a wide array of specialised activities carried out by various businesses in different countries.

Some companies are effectively “master integrators”, acting as central managers and co-ordinators of an industry supply network that extends a long way outside the enterprise.

In IT terms, the effect is to create composite systems that are operated and accessed across multiple organisations all along the supply chain. These composite systems’ vulnerability to cyber attack will be determined by the weakest link within the supply chain. So each organisation faces risks not just around the quality and effectiveness of its own cyber security, but of all the other participants in the supply chain as well.

It is an absolute imperative that aerospace and defence businesses make securing and maintaining high quality cyber security a top priority.



Dr Alastair MacWillson: There are four key reasons why cyber threats are escalating particularly quickly for aerospace and defence companies.

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THE X-RAY FACTOR

Ian Sheppard looks at the new regulations that add security to the challenge for airlines.



The event that still forms the backdrop to the aviation security topic is the bombing of Pan Am Flight 103 over Lockerbie on December 21 1988. Since then X-ray examination has become the norm.

Detection of explosives, being non-metallic, depends on distinguishing devices from other electronic items – i.e. the operatives are the key to detection.

Following 9/11 there was a push to harmonise security rules and to have 'one-stop security' so as not to disrupt journeys more than necessary (for both passengers and cargo). However, the move to harmonisation has failed partly because each new threat that has emerged has led to a knee-jerk reaction where measures were introduced aimed squarely at preventing a repeat of each particular threat.

Examples include the printer cartridges incident of October 2010, the December 25 2009 failed bombing by Umar Farouk Abdulmutallab using liquids concealed in underwear (see *Every Day items* box), previous incidents involving liquids, aerosols and gels (LAGs) and going right back to shoe bomber Richard Reid in 2002.

Such events have created pressure to develop better screening techniques. For example, with X-ray devices, the rays can be analysed as they 'back-scatter' using sophisticated software to identify suspicious materials. Tomography has also been developed from medical CAT scanner technology so that operators can rotate 3D images to better examine suspicious objects.

■ International law

ICAO Annex 17 (to the Chicago Convention) covers security and dates from the 1970s and the establishment of an international security manual.

The prevention of unlawful acts against civil aviation was already covered by the Tokyo and

Hague conventions but only with the advent of the 1971 Montreal Convention were unlawful acts by those not travelling on the aircraft covered. This convention introduced the definition of an aircraft 'in service' with one of the offences being the placing of a potentially harmful device or substance on board prior to a flight.

However, the conventions are still seen by some as of limited use.

In 2002 ICAO member states issued a global strategy for strengthening aviation security around the world. However, despite a well-meaning plan of action, a review in 2005-8 showed many holes in legal coverage – for example the use of aircraft as weapons, and suicide attacks, with a particular weakness being laws dealing with those financing, organising and directing terrorist activity.

Cargo: the weakest link

Cargo is the obvious weak link in the system, as highlighted by the printer cartridge devices that were intercepted on Friday October 29 at East Midlands Airport, UK on their way to Detroit on a UPS flight from Yemen (albeit discovered on a tip-off from Saudi Arabia).

The EU Aviation Security Committee immediately underlined that Regulation 300/2008 would be used as the basis for strengthening security and that it covered cargo.

The EU, which has ten of the world's top 20 cargo airports, is taking a two-pronged approach – securing the supply chain and ensuring the security of consignments. Screening decisions will be based more on intelligence about previous points of call with a focus on the originator, with 'known consignor accreditation'.

Freight forwarders, hauliers will need to become 'regulated agents'. The implementation of all this regulation has to be in place by 2013.

Ultimately this led in August/September last year to the adoption at a Beijing diplomatic conference of two new legal instruments: The Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation; and the Protocol Supplementary to the convention for the Suppression of Unlawful Seizure of Aircraft.

At last using civil aircraft as weapons and organisers of attacks have no safe haven. When the Beijing Convention 2010 comes into force it will replace the Montreal Convention and Protocol.

ICAO has also recently adopted two conventions covering compensation – these are generally known as the 'General Risks Convention' and the 'Unlawful Interference Convention'.

The former establishes strict liability for damage caused by aircraft – and this liability is limited (to values based on aircraft take-off weight) if the damage was due to the negligence or wrongful act of a third party.

In June the Middle East Regional Aviation Security Committee issued the 'Abu Dhabi Joint Declaration' to set out key principles and standards, while ICAO member states in the region agreed to increase co-operation and co-ordination.

In future, united efforts should ensure that states meet international obligations set out by ICAO. This will also include better training and measures to make travel documents more secure.

Generally they agreed to establish technical forums to assess new technologies, develop enhanced detection methods, unifying and harmonising laws and regulations and encouraging/funding the rectification of defects highlighted by ICAO audits of states.

While some way behind the European Union, the Middle East is at least showing signs of taking



the same co-ordinated approach. The region is likely to look to the EU as an example of how states should work together.

In April, EU Regulation 300//2008 came into force in the EU (and some ECAC states that are not members of the EU) and the states will soon incorporate this into their national laws.

They must also amend their national aviation security programmes (NASPs) to reflect the changes. Regulation 300/2008 has to be observed by all carriers operating to EU airports and also by all those providing services in aviation security.

However, this standard is referred to as 'base line' in the expectation that countries with higher threat levels will require 'more stringent measures' (or MSMs) – for example the body scanners now being installed at numerous airports (both inside and outside the EU and US).

One problem for airlines is that they may not be aware of MSMs (as publicising them will also let terrorists know about them). The EC informs states about them and it is up to states to find secure channels to inform the aviation community. However, because they do not always do this, airlines are well advised to contact the relevant security authorities before operating a particular route so that they can plan and train staff.

Another issue is that regulators are running ahead of technology to some extent – for example, expecting a higher level of scanner technology to be implemented than is practical given the false alarm rates and through-put times. The EC wants liquid detectors to be widespread by 2013 but manufacturers are indicating that the technology will not be practical that soon.

In March, a draft European directive on security funding was amended to make it the responsibility of governments to fund measures such as body scanners, because protecting EU

citizens from acts of terrorism is a state responsibility, and shouldn't be left to industry.

While in the EU a body scanner impact assessment is out soon, the devices have become hugely controversial due to privacy concerns. Companies like Rapiscan and Smiths Detection are developing their scanners – the latter has 'Ego' scanners at London's Heathrow and Gatwick Airports. Devices which show less revealing images could soon show a standardised body with any potential threats superimposed.

Smiths also has a new machine which is good enough to mean passengers will not need to remove laptops from hand baggage any more. The US TSA has ordered this (the HiScan 6040aTiX) for deployment across the US.

It is US government funding and increasing competition in the growing security market that is making devices more advanced and more numerous.

Meanwhile, codes of conduct have been developed to help train operatives and reassure passengers.

■ Interpol

Interpol is at the centre of efforts to share intelligence. It created a 'fusion task force' after 9/11 to identify terrorist groups, share information (it maintains a terrorist database) and provide support to states.

It issues 'orange notices', for example, to warn of potential threats – following the printer cartridges incident last year FSF, which has six regional task forces including Project Middle East, issued an 'orange notice' security alert to Interpol's 188 member countries.

In December the Council of the European Union announced the creation of Airpol, to further enhance ties between police forces and border forces.

Every-day items still present a threat

Airborne improvised explosive devices (IEDs) remain a major threat but with security at airports now so tight, terrorists have taken to trying to initiate explosive chemical reactions on board.

The attempted bombing of Christmas Day 2009, which prompted the current world-wide rush to install body scanners, seems to have been a two-stage process – inject acid into TATP explosive, which would then detonate PETN explosive.

The bomber could have succeeded by using a detonating cap or exploding wire to set off the PETN, but getting either through security would be far harder. This is why the less reliable peroxide-based homemade explosive was used.

Security measures put in place after Lockerbie have helped, although the fact remains that plastic explosives such as PETN are still very hard to detect.

The 'shoe bomber' attempted to use TATP as a detonator in trying to bring down an American Airlines flight on December 22 2001, although he tried to use matches rather than injecting liquid. A TATP thread ran through the PETN and a powder fuse was built into his shoelace.

The liquid explosives plot of 2006 involved drinks bottles; the plan was to explode a mix of concentrated hydrogen peroxide and powdered fruit drink using HMTD detonator hidden in hollowed out batteries and a disposable camera to provide the electrical surge to start the detonation.

This illustrates how apparently every-day items can be brought together on board to create an IED. This is the added danger of suicide bombers – in the Lockerbie bombing Semtex was used and it is believed the element from an aneroid barometer was used to start a timer once the aircraft cabin altitude fell below a certain level (so it would still be effective if the flight was delayed).

The most frightening thing is that such devices only have to be the size of a pocket radio to bring an aircraft down, and that the components can be so easily disguised as other items. In addition, bombers could potentially become much smarter. Scanning systems are relatively hit-and-miss affairs and the human factor means personnel are likely to be somewhat hit-and-miss too – no matter how well trained, the sheer number of flights and passengers, an ever-growing number, poses a huge challenge.

Reports that Al Qaeda is encouraging operatives to develop internal bombs – coined by some as 'Frankenbomber' devices, placed deep inside suicide bombers – could make detection extremely difficult.

Early 2011 will see the EU publishing a comprehensive policy on aviation security and this will likely include exemption lists for states which already carry out audits and checks on other states.

With Europe being the hub for much activity between the Middle East and the US, in some ways it acts as a security shield for the US.

The recent printer cartridge episode served to underline this yet again and Europe is moving to act – although as ever this will push the terrorists to look at going direct or targeting airports pre-security, and even planning chemical/biological attacks.

Etihad announces Kuwait manager

Etihad Airways has appointed Nabil Matarweh Hijazine as country manager to Kuwait.

Hijazine, who has more than 25 years' aviation experience and was formerly manager of the airline's Tehran office, will run all commercial operations in Kuwait.

Peter Baumgartner, Etihad Airways' chief commercial officer, said: "Kuwait is pivotal to Etihad's growth strategy and we are delighted to welcome Nabil to this important post. He has acquired a wealth of experience and expertise in the airline industry and we will be able to use his extensive knowledge and contacts in the Middle East region to further accelerate the success of our operations in Kuwait."

Berryman steps up to head Emirates' UK

Emirates Airline has appointed Laurie Berryman as vice president for UK and Ireland.

Berryman is promoted from his current position of area manager - UK North, and replaces Conrad Clifford.

The move is a highlight of a 20-year career with Emirates for Berryman, 59, who joined the airline in 1990 ahead of its inaugural Manchester-Dubai service.

Richard Vaughan, Emirates' divisional senior vice president, commercial operations, worldwide, said: "Laurie has been a driving force in developing Emirates' hugely successful operations in the UK regions.

"Our services to and from Manchester, Glasgow, Birmingham and Newcastle are a cornerstone of the Emirates growth story in the UK and Laurie has done much to bring the airline to

BACKHOUSE MOVES TO LAUNCH OCEAN SKY IN THE MIDDLE EAST

International private jet company Ocean Sky is signalling the next phase in its growth with the opening of a representative office in Dubai.

It will be led by Neil Backhouse, who joins from ExecuJet Middle East, where he was charter sales manager for the company's managed aircraft fleet.

Backhouse originally moved to Dubai in 2001 with Bombardier Skyjet, tasked with introducing the Skyjet brand to the region.

The new office will serve as a base for Ocean Sky's expansion in the Middle East over the next several years. Initially, the Dubai operation will focus on providing air charter and aircraft management services, but the company anticipates expanding into further areas, such as aircraft acquisition and sales and fixed base operations.

Ocean Sky chief executive Steve Grimes said: "The Middle East is a natural fit for Ocean Sky. We start in Dubai with a strong offering in aircraft charter and management, but see exciting opportunities to introduce other elements of our fully-integrated business model. Neil Backhouse is a great addition to the team and brings almost a decade of experience of the Middle East, coupled with insights developed both as a broker and an operator. He is ideally qualified to spearhead our growth in the region."



Steve Grimes: natural fit for Ocean Sky.

a whole new audience. He has a wealth of knowledge and experience in the UK market."

Tyler to succeed IATA's Bisignani

The International Air Transport Association (IATA) has selected Tony Tyler, CEO of Hong Kong-based Cathay Pacific Airways, to become IATA director general and CEO when current post-holder Giovanni Bisignani retires next year.

RUAG Aviation goes for Berner as CEO

Philipp Berner has been appointed as CEO of RUAG Aviation.

Berner is an economist who studied at the University of St Gallen, Switzerland. He has been a member of management of RUAG Aerospace for seven years and has worked at RUAG Aviation since 2009.

In 2006, he became head of the military aviation business unit (main

SAS APPOINTS EICHE AS UAE GENERAL MANAGER



Stefan Eiche is the new UAE general manager for SAS Scandinavian Airlines.

Besides overseeing SAS flights in and out of Dubai from November 2010 until March 2011, Eiche will also handle other Middle East, and African markets.

"The significance of the UAE as well as the entire Middle East to the global economy has become increasingly important," said Eiche. "And to be appointed to lead SAS Scandinavian Airlines business in this market, along with other markets such as Africa, India and Middle and South America, is an honour and a privilege, as well as a challenge."

customer: Swiss Air Force) with around 1,400 employees in Switzerland, Germany and the USA. He has expanded the unit's international business in selected markets abroad and established a global sales organisation.

Executive aircraft role for Berry

Global aircraft charter specialist Chapman Freeborn Airchartering has appointed Alex Berry as director of executive aircraft for its worldwide operations, with responsibility for expanding the company's activity in VIP and corporate markets.

Berry's career spans more than 13 years – he has worked in a variety of senior managerial and commercial roles for companies including NetJets Europe, Marquis Jet and Bombardier Skyjet International, where he helped develop its jet card programme.



Transguard's Airside Services business focuses on meeting the needs of the growing aviation sector in the UAE, providing a diverse portfolio of services, from cargo and baggage handling to aircraft cleaning and passenger assistance.

It's all about the people



Mario Vodicka
Account Manager - Airside Services

My team works at all three terminals at Dubai International Airport and includes porters, loaders, baggage handlers, ramp loaders, tractor drivers and administrative support staff. We pride ourselves on our strong working relationships with our clients and our flexible approach to service delivery.

Transguard Group is an Emirates Group company

RICHARD LEWIS

Marcelle Nethersole speaks to the managing director of Marlborough recruitment.



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■ Who does Marlborough recruit for?

For more than 10 years Marlborough has served the aviation, travel and tourism community offering retained executive search services. We are experts at identifying talent and are trusted advisers to airports, airlines, aerospace manufacturers, travel companies, service providers and industry associations worldwide. Typical assignments we recruit for include Board members, C-level positions, including CEO, as well as functional heads.

In addition, Marlborough Consulting provides a comprehensive range of tried-and-tested professional services for mentoring and coaching managers and owners of businesses to support them through the challenges that stem from organisational change.

■ What does a working day involve for you?

We're located close to Brussels airport so I spend a great deal of time on planes, trains and automobiles meeting clients and interviewing candidates. Marlborough has grown enormously over the last decade but this is still part of the job I love the most; meeting new people, catching up with old ones and matching our client's objectives with that of our candidates.

We're often used as a barometer for the industry and so, throughout the day, I end up speaking to clients and candidates alike on the state of the market and generally giving career advice.

■ Which countries do you recruit in?

Our headquarters is located in Brussels, Belgium, which certainly helps us serve the whole of EMEA well. But, as one of the world's leading specialist aviation search agencies, our assignments take us all around the globe. With talent becoming ever more difficult to find, particularly at the highest Board or C-level, our search is now no longer confined to a regional or national level. Discretion at this level is critical so we rely on our vast 'black book' of contacts to identify a short-list of international talent.

■ You work a lot in the Middle East. Why is this region important to you?

Marlborough has been working with the leading airlines, airports and aviation companies in the region from the very start of its expansion, giving us a very clear and distinctive feel for what works and what doesn't.

There is no doubt that, in the early days, a lot of senior executives were parachuted in from across the globe to fill the experience gap. But now, after ten years, it's become increasingly important to bring through the next generation of home-grown talent to take up the reins. And while it is always better to employ locals, the best talent and cultural fit will always win through.

■ What sets your recruitment company apart from competitors?

Our distinct advantage is that we offer a thorough and personalised collaborative approach, at a one-on-one level, and for which boutique businesses are famous. We get to know our clients inside and out to ensure the right candidate is appointed, not just in terms of experience, but crucially also in terms of chemistry and cultural fit.

We can confidently lay claim to being able to access the business cards of upwards of 18,000 senior-level aviation executives worldwide.

EgyptAir Maintenance & Engineering extends EASA approval

As EgyptAir Maintenance & Engineering is seeking for continuous improvement, the company succeeded to add the aircraft types B757-200/300, B767-200/300, Airbus A330-200/30 powered by GE CF6 and Embraer E190/195 to its capability, providing all types of maintenance services which include pooling support and approved repair workshops to serve EgyptAir fleet as well as attracting more customers operating different aircraft types. Meanwhile, a new approved station at Marsa Alam will start to provide technical services starting from the 1st of February .2011

This was after the successful EASA audit on EgyptAir Maintenance & Engineering to renew the validity of its approval certificate. The audit was conducted in :two phase

The first phase: was conducted on the activities in outstations in Jeddah, Riyadh and Dammam in the Kingdom of Saudi Arabia. The result of this audit reveals the perfect compliance with the regulatory re-

quirements

In the second phase: A complete audit was performed on all the company's activities and the related facilities in which the activities are exercised in line maintenance, base maintenance, all overhaul workshops and engine workshops. All activities and applicable procedures were checked even interviews were conducted with the staff to evaluate their competency with respect to understanding the rules of regulations together with the company's procedures and .the technical tasks they are assigned to perform Noteworthy, EgyptAir Maintenance & Engineering is one of the biggest MRO providers in the Middle East and Africa for Airbus, Boeing and Embraer types. With more than 78 years of experience, EgyptAir Maintenance & Engineering serves more than 100 airlines in Europe, Middle East and Africa with a high potential workforce to satisfy its increasing customers with total care maintenance solutions



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