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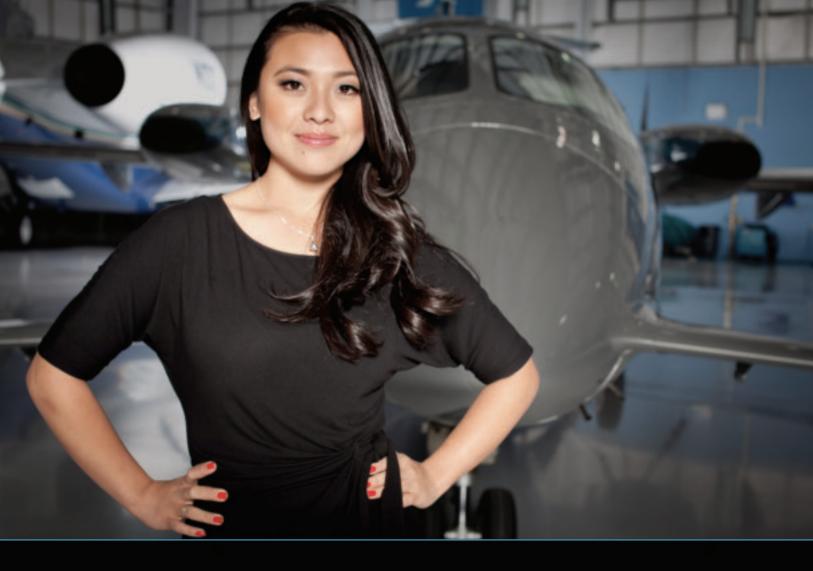


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Introduction

Optimism on the roller coaster ride of business aviation.

I had the great honour earlier this year of chairing the MEBAA Conference in Amman, Jordan and anybody attending that event could not fail to have left the event convinced that MEBAA is stepping up a gear. One of the biggest challenges that our industry faces is ensuring regulators and governments truly understand that business aviation is not the same as commercial airliner traffic. The Jordan conference, headlined by the head of the country's civil aviation authority who promised tough measures against the grey market operators, was a breath of fresh air. At last people are listening - and in the case of Jordan, also taking action.

Data for the Middle East, and external analysts are throwing up concerns that the region's growth is slowing down.

It is. Battered by the ongoing conflicts that affect our wider MENA region - and around one of the biggest customer bases in Russia - it is not surprising that numbers have dropped.

But there is an air of optimism around. There is investment in new operations - Dubai World Central is set to be a battle ground for FBO services and these guys don't invest if they don't see a justification from the traffic prospects. There are new aircraft orders and plenty of new service deals being done.

We close the year with the MEBA show, the highlight in the region's business aviation calendar and the place where the agenda for the next two years is clearly set. This year's MEBAA Review and Magazine looks in detail at some of those issues. We look at many different facets of the sector whether it be new models or new technologies and look in detail at some of the companies behind those plans.

I was also delighted that MEBAA is ensuring its membership gets complementary copies of the Pocket Guide to Business Aircraft which I hope will introduce even more people to what is available in the world of business aviation.

Looking forward to 2015 there are many new aircraft expected to take to our skies, and many more market opportunities - MEBAA's own event in Casablanca is such an opportunity. There is plenty to be optimistic about. I hope you enjoy this year's Review and wish you Safe Landings.

Alan Peaford. Editor-in-Chief. Arabian Aerospace

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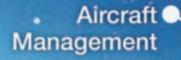


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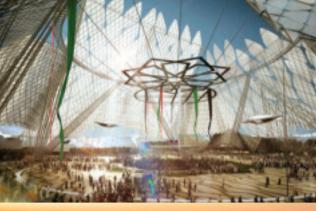
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Ian Croxton, Sales Manager - Middle East at Avinode, the world's leading tool for buying and selling air charter online, examines key business aviation trends in the Middle East over the past year.

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Many operators from outside MENA look on with interest at the region's business and private aviation activities. **Yahya Mahmoud** looks at how European charter carrier Klasjet, headquartered in Vilnius, Lithuania, views the market.

25 Breaking New Ground

The Middle East has witnessed the introduction of a number of new aircraft types over recent years. But as the depth of the market expands there are far more opportunites. **Kate Sarsfield**, Business Aviation Editor at *Flightglobal* takes a look at each of the key sectors and highlights the new models that this innovative aviation sector will bring to the global market over the coming years to whet the appetite of discerning customers.

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For Signature Flight Support the Middle East remains an important part of its customer base, and as **Phil Nasskau** reports, its excellent customer service is the key to it being the FBO choice for travelers across the globe.

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Completions centres around the world are full with wide-body aircraft being prepared for the VVIP market. **Alan Peaford** takes a look at the latest position.

53 AMAC sprints to become world leader in maintenance and completions

AMAC's Middle East credentials have stood it in good stead as it develops a stream of customers from the region for its aircraft completions, has developed MRO capabilities in Turkey and now has licence to offer an exciting new jet to the region. **Dave Calderwood** takes a visit to the company.

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Once you have bought an aircraft, giving it that personal touch can be more than skin deep. Liz Moscrop celebrates the renaissance of art in the air.

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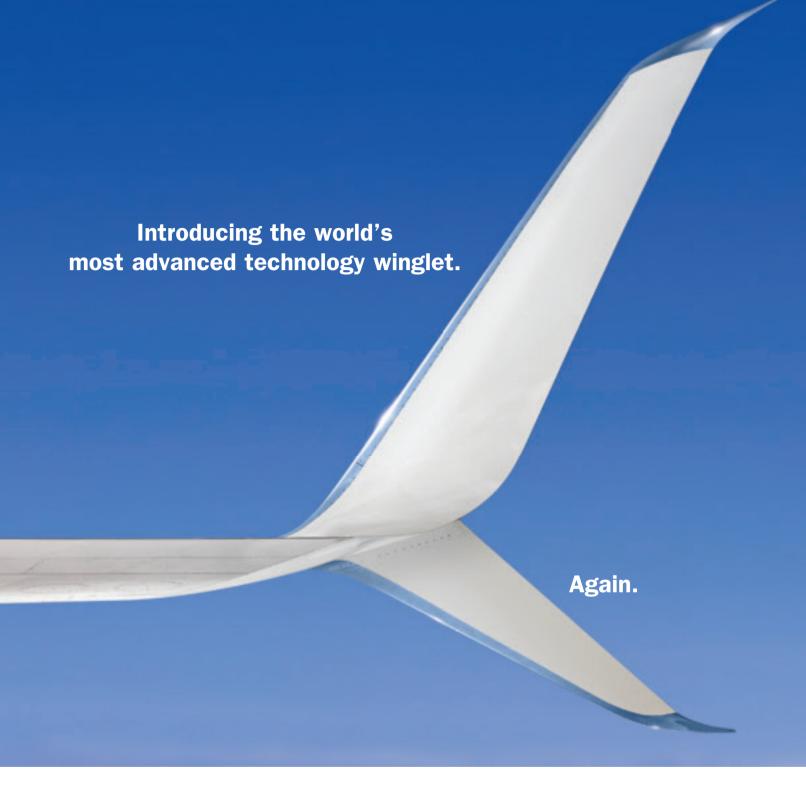
Business aircraft connectivity has moved from curiosity to necessity in just a few years as **Steve Nichols** reports.

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Foreword

by Ali Al Naqbi, Founding Chairman of MEBAA

here is an old Chinese curse which goes something along the lines of "May you live in interesting times." That phrase could have easily been written by somebody watching the business aviation industry.

In the past seven years since we first formed MEBAA we have seen global recession, we have seen hopeful upturns, we have seen focuses on new fuels and new technology and in this particular region we have seen political upheaval and unrest. But at the same time we have witnessed unbelievable success of our brothers in the air transport sector with three of the world's fastest growing airlines right on our doorstep.

Both the airline growth and the conflicts have made an impact on the progress of business aviation. The airline success has led a global emphasis on commercial aviation which often means that business aviation is put to the back, or at worst encumbered with the same rules and regulations as our airline brothers. And while conflict has led to specialist demand for private aviation to operate, it has also led to a drop in general demand to some key markets for Middle East and North African operators.

It is easy to perhaps bury our heads in the sand, and just reflect upon our current woes, but I am excited by the progress MEBAA has made since its inception.

Our activities have spread across the whole family of nations in the Arab League, across the whole of the Middle East and North Africa and we will see an example of that commitment to the greater region with the launch next year of the first MEBAA Show in Morocco.

That event at the Mohammed V Airport in Casablanca in September 2015 underlines the importance of North Africa to our industry. Morocco in particular offers an attractive investment market, with growing wealth, strong macroeconomic policies, and lower cost bases for business aviation players. MEBAA has identified enormous opportunities, and we are keen to promote a well-supported, regulated and safe business aviation sector in North Africa, while addressing transport issues faced by the region.

That – and events like our sixth MEBA show in December 2014 – are seen as the showcases for our Association, but in fact there is a lot of activity that goes on behind the scenes ensuring that the business aviation industry has a voice with governments and regulators across the whole region.

It is at events like the shows – and increasingly successful conferences – that we have the platform to address the issues affecting the business aviation community in the Middle East and North Africa and highlight our continual support for members. We have been making significant progress with government and aviation authorities who are beginning to cooperate with one another to implement initiatives such as uniform maintenance approvals.

In addition, as part of its growth, MEBAA increased the services available through MEBAA Aviation Insurance Scheme (MAIS) and continued to develop guidelines and promote the welfare of MEBAA members through training and safety schemes. Another highlight of the association was the launch of our Fly & Feed program in partnership with the World Food Program (WFP), an organization under the auspices of the United Nations, while MEBAA's lobbying efforts have been extended to IBAC to address illegal chartering (the grey market) within our market.

We have also seen governments, such as Jordan, take active steps to intervene and punish those operators conducting grey market flights.

In this *MEBAA Magazine* you can read about our members to know who they are – and you can also get a greater overview of the business aviation market as a whole and understand just how the Middle East fits in the business aviation world.

I am very proud of the progress MEBAA has made and I would like to thank you for your support and involvement in helping us achieve even greater successes.

Ali Al Naqbi, Founding Chairman, MEBAA

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Indicators for growth

In its 23rd annual Business Aviation Outlook, Honeywell is forecasting up to 9,450 new business jet deliveries worth \$280 billion from 2014 to 2024. But the Middle East numbers are slowing. We report on the global outlook.

he 2014 Honeywell outlook reflects an approximate 7 to 8 percent increase in projected delivery value over the 2013 forecast. Slightly higher unit deliveries are coupled with modest list price increases and the continued strong showing of larger business jet models in the delivery mix to generate the growth.

Honeywell forecasts 2014 deliveries of approximately 650 to 675 new jets, a single-digit increase in percentage growth year over year. The improvement in deliveries expected in 2014 is largely due to program schedule recoveries, new model introductions and additional fractional uptake.



Brian Sill.

"2015 industry deliveries are anticipated to be up modestly again, reflecting momentum from several new model introductions and some gains linked to incremental global economic growth," said Brian Sill, President, Business and General Aviation, Honeywell Aerospace.

SURVEY FINDINGS

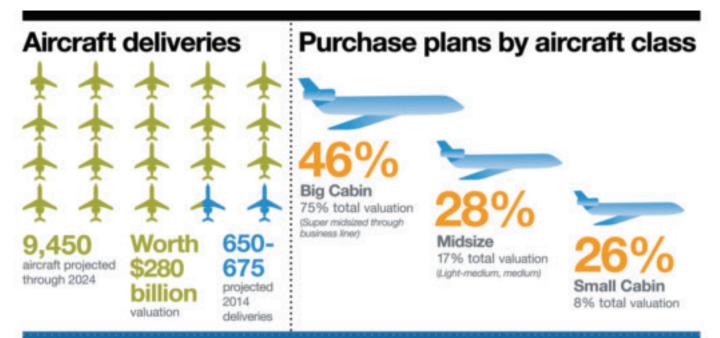
In its latest survey, Honeywell found that the operators interviewed plans to make new jet purchases equivalent to about 23 percent of their fleets over the next five years either as a replacement or in addition to their current fleet. This level of interest is several points lower than the past four survey cycles, but is in line with results of 25 percent or less that were the norm until 2006. Of the total new business jet purchase plans, 19 percent are intended to occur by the end of 2015, while 14 and 22 percent are scheduled for 2016 and 2017, respectively. The survey does not allocate projected demand to specific years beyond 2017. Purchase timing is shifted somewhat later compared with last year's results and leads to a modest slowdown in projected demand for the near term. However, presold positions for new models entering service in 2015-16 should mute this effect on recorded deliveries.

LARGER JETS REMAIN POPULAR

Despite lower overall purchase expectations, operators continue to focus on larger-cabin aircraft classes ranging from







We will continue to expect moderate growth in 2014–2015 on the strength of new model introductions and incremental gains in economic growth, but patterns of demand are shifting in the

short term , Brian Sill, President, Honeywell Business and General Aviation

super midsize through ultralong-range and business liner, implying these types of aircraft will command the bulk of the value billed from now until 2024. This large-cabin group is expected to account for more than 75 percent of all expenditures on new business jets in the near term. Volume growth between now and 2024 will be led by these classes of aircraft, reflecting 60 percent of additional units and nearly 85 percent of additional retail value.

"The strong desire for larger-cabin aircraft with greater range and advanced avionics is seen again in this year's survey," Sill said. "We are also seeing some improved interest in midsize and small-cabin models this year. As a full-spectrum supplier, we are pleased to see aircraft in every class with significant Honeywell equipment content among the most popular models cited in the operator survey."

"For many years, the Honeywell Operator Survey has pointed the way for the industry," said Carl Esposito, Vice President of Marketing and Product Management, Honeywell Aerospace. "The annual outlook reflects topical operator concerns but also identifies longer-cycle trends we use in our own product decision process. It



Emerging markets generally show higher, but historically more volatile, levels of demand and a more pronounced preference for larger aircraft. As traditional regional markets have coped with economic variability and political uncertainties, key emerging markets have been shaping recent industry growth,

service.

This year, Honeywell sees a realignment of near-term regional market shares. The

backlog and portfolio composition.

has helped Honeywell focus on

investments such as designing and

developing flight efficiency upgrades,

safety products and enhanced aircraft connectivity offerings. The survey also

on high-value platforms in growth sectors."Another notable finding in the

optimized propulsion offerings, innovative

contributes to our business pursuit strategy,

and helps position Honeywell consistently

2014 survey is the improved interest levels

operator purchase plans. While large-cabin

for midsize and small-cabin aircraft in

models still garner the largest share of

specific buying plans, the midsize and

smaller models recovered some share for

the first time in several years, reflecting improved prospects for popular production models as well as stronger interest in newer

models just now available or soon to enter

REGIONAL BUYING DETAILS Regional purchasing results are affected by each market's maturity, economic environment and other characteristics.

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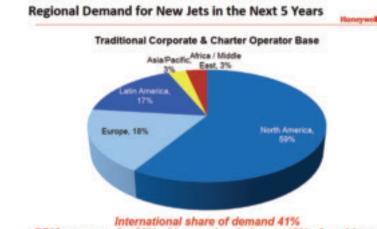
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overall level of forecast aircraft demand coming from inside North America slipped back after increasing for the first time since 2010 last year. Roughly 59 percent of projected demand comes from North American operators, down two points from the 2013 survey. "New aircraft acquisition plans in North America are still significant given the region's overall size," Sill said. "Coupled with projected gains in fractional fleet deliveries, North American demand should still support industry volumes as some of the traditional highergrowth regions work through another year of reduced growth rates."

Honeywell first began spotlighting growth in the BRIC countries (Brazil, Russia, India and China) in 2011. Last year, these results led the survey with 42 percent of respondents reporting acquisition plans. This has lowered to 29 percent in the 2014 survey, but remains above the world average of 23 percent. Of the BRIC countries, Brazil remained a bright spot by recording the strongest new aircraft purchase plans in the survey. Overall, the BRIC countries still retain a relatively strong near-term demand profile with 45 percent of intended new jet purchases scheduled for the next two years. Together, the results from BRIC countries evidence a continued tempering of



BRIC accounts for 29% of International share – 12% of world total

enthusiasm compared with a year ago but are still quite strong when compared with other regions, or with results accrued during the more than 20 years Honeywell has been conducting the survey.

Middle East and Africa

The share of projected five-year global demand attributed to the Middle East and Africa region moved below its historical range of 4 to 7 percent this year. In the Middle East and Africa, 18 percent

of respondents' fleets are projected to be replaced or added to with a new jet purchase, down from 26 percent last year. The level of purchase plans is under the world average and unsurprising in that it has been a year of significant political upheaval and ongoing conflict in the region as well as a year in which oil prices have drifted lower and health crises have emerged in Africa. Regional distress has taken a toll, with operators in the region scheduling their purchases later in the next

Survey highlights

of new purchase plans will be large cabin jets

of survey fleet replaced or added to new jets within the next 5 years

Increase from 2013 in value of forecasted deliveries

7–8%

of planned purchases to be completed by close of 2015. (similar proportion planning for 2014 and 2015 purchase)

19%

of worldwide sales originate in North America

Regional spotlight

Europe:

Rebound in European purchase plans leads all regions despite softness in Russia

of fleets planned for replacement with new jet in next 5 years



of new purchases planned by end of 2015

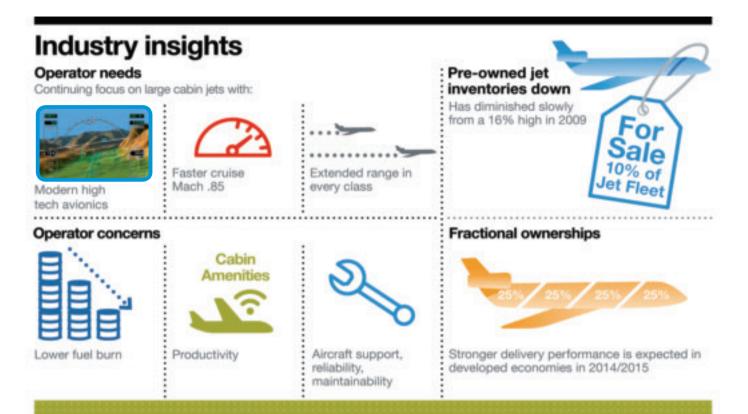
Latin America

Continues near double

digit fleet growth over the last 5 years

of Latin America purchases expected before 2016

Brazil still leads all areas in new jet purchase plans

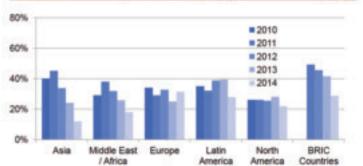


five-year window than expected last year, with only 21 percent of purchases planned before 2017.

Asia Pacific

Operators in the Asia Pacific region, where many of the industry's major players still have high expectations for long-term future growth, report new jet acquisition plans for 12 percent of their fleet. This is much lower than the 24 percent reported last year and has slipped below the world average. Disappointing growth figures from several major regional economies, higher levels of regional tensions and government austerity initiatives have muted operator enthusiasm in the current survey. As a result, the total share of global demand over the next five years for Asia Pacific is about 3 percent, off two points from 2013 levels. Fleets in this region have been growing at double-digit rates throughout the past five years and should continue to expand at strong, if slightly slower, rates over the next few years. This year, almost 30 percent of respondents are scheduling their new purchases within the first year of the five-year horizon. When comparing purchase timing in Asia Pacific between the past two surveys, it is evident that the front-loaded profile has resurfaced and should help bridge the gap to improved operator sentiments in the future.

Most operator concerns centered on the economic tempering, tensions and fiscal



New Jet Purchase Expectations by Region

European purchase plans rose and lead all regions -Latin America remains relatively strong, buffered by Brazil austerity affecting several of the region's major economies. However, this is a topical phenomenon as most forecasts call for a relatively strong recovery in economic growth within the region over the next five years.

"Survey findings from this part of the world rely on a smaller base of operator pools, and we do not believe the 2014 results represent any long-term structural change in the region's fundamental underlying growth drivers or commitment to business aviation," Sill said.

Latin America

Latin America's survey results indicate 28 percent of the sample fleet will be replaced or added to with new jet purchases, which is 11 points lower than last year's result. The 2014 results remain above the world average, and planned acquisitions remain more front-loaded than the world average, with almost 47 percent of this region's projected purchases timed to happen between 2014–2016. As a result of the current purchase plan levels, Latin America's share of total projected demand holds relatively steady compared with a year ago at 17 percent.

North America

North America, the industry's mainstay market, has seen new jet purchase plan levels slip about six points to 22 percent, just under the world average of 23 percent, after averaging near 25 percent for the past six years. Though buying plan levels might be moderate when compared with emerging markets, North America represents nearly 60 percent of projected global demand for the next five years based on the region's larger installed business jet base, affirming the region's unquestionable importance to the industry's future. Timing of North American acquisitions has been deferred compared with other regions, suggesting that despite aggregate five-year interest levels reported by potential purchasers, short-term conversion plans could be moderate until 2016.

Europe

Europe's purchase expectations jumped this year, to 31 percent, and are now back in line with the 30 to 33 percent levels seen in the three surveys before 2013. The European share of estimated global fiveyear demand also moved back in line with norms at 18 percent in the 2014 survey. European operators are still contending with sluggish growth and increased political tensions.

Within the current setting, the buoyancy of operator attitudes is surprising. Russia, which supported the region before 2013 with strong local purchasing ambitions, has slipped in reported purchase plans in the 2014 survey, as Western sanctions expanded over the Ukraine crisis. Honeywell must note that Russian responses in this year's survey were again limited, so the small sample has an added element of volatility.

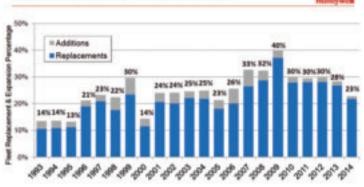
A comparison of the planned timing for European purchases indicates uneven proportions of demand in the next three years of the five-year window, with about 20 percent allocated through 2015 followed by a 13 percent dip in 2016 and a strong rebound to over 30 percent in 2017.

"The long-term macro trends that support demand for business jets are still in place. notwithstanding the topical issues we find colouring responses to the 2014 Operator Survey," Sill said. "We believe global business aviation growth will be aided by structural and regulatory reforms, longerterm economic growth and aircraft innovation. As a systems supplier, we believe product innovation in the form of aircraft connectivity and communication technology solutions like the JetWave Kaband satellite connectivity system, safety and situational awareness offerings like the IntuVue weather radar, as well as flexible service offerings and value-added upgrades, will support the expanded use of business aircraft as a key tool in the global economy."

USED JETS AND FLIGHT ACTIVITY

Shifting from jet purchases to flight activity, over the course of the past year the pace of recovery has improved but remains somewhat mixed. Much of the ground lost by operations during the 2009 recession still remains to be recaptured, while moderate improvements in international

Five Year Purchase Plans for New Jets



2014 purchase plans declined 5 points to 23% Operators cautious about slow growth, geopolitical concerns

flight activity and in U.S. operations in general have continued into 2014.

Among the indices followed by Honeywell, pre-owned jets for sale and flight activity continue to receive special attention.

The number of pre-owned jets for sale today has fallen from a year ago. Approximately 10 percent of today's fleet is up for resale, down from a high of nearly 16 percent reached in 2009. Current levels are normal in light of the past decade's history; meanwhile, asking prices continue to drift lower.

Before 2008, younger inventory (10 or fewer years old) usually made up 20 percent of what was for sale, but this year, the percentage of younger used jets still hovers at just over a quarter of all listings. This is down from record averages of about 30 percent reached in 2009. In 2014, improvements have occurred in the total young jet listings but in proportion to the decline in overall listings, keeping the overall share stable. Operator respondents increased their used jet acquisition plans moderately again in this year's survey by about two points, equating to 28 percent of their fleets in the next five years.

All regions posted increased used jet buying plans except Latin America. The used jet purchase plan increases over the last two surveys mesh nicely with the observed decline in used inventory for sale. Honeywell also sees increases in regions that experienced declines in new jet purchase plans, perhaps reflecting a shift in the near term to a more financially conservative approach to upgrading or expanding business jet fleets with used equipment.

Prospects for improved levels of flying activity in the near future remain modest. Honeywell expects U.S. business jet cycles to close this year with an expansion of about 5 to 6 percent, largely driven by international flight growth and relatively strong charter operations. 2015 should also bring growth in the low single digits.

European activity in 2014 — which does not include Russia in this case — is expected to decline approximately 1 percent. International flights (outside the EU) are actually slightly positive thus far this year. Modest growth is expected in 2015, driven in part by improved economic prospects in Western and Central Europe but remaining exposed to further drags imposed by the ongoing political tensions present with Russia.

FRACTIONAL MARKET

Flight activity for charter-like operations and fractional ownership appears to be doing relatively well in the U.S. but not yet translating into many new aircraft deliveries. Fractional operators have taken only 11 new jets through mid-year. Large order backlogs accumulated over the past two years should impact delivery performance favourably beginning in the second half of 2014 based on delivery schedules.

METHODOLOGY

Honeywell's forecast methodology is based on multiple sources including, but not limited to, macroeconomic analyses, original equipment manufacturers' development plans shared with the company, and expert deliberations from aerospace industry experts. Honeywell also taps into information gathered from interviews conducted during the forecasting cycle with over 1,500 nonfractional business jet operators worldwide. The survey sample is representative of the entire industry in terms of geography, operation and fleet composition. This comprehensive approach provides Honeywell with unique insights into operator sentiments, preferences and concerns, and provides considerable insight into product development needs and



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ENGINEERED WITH PASSION

Summer sees Dubai turn the heat on charters

Ian Croxton, Sales Manager - Middle East at Avinode, the world's leading tool for buying and selling air charter online, examines key business aviation trends in the Middle East over the past year.



Summer 2014 has been a strong period for the Middle East. The summer months are always a busy time for the region, but this year there was a notable increase in business jet departures during those months.

This can mainly be attributed to the market's recovery from the 2008 recession; the global market is certainly recovering and Avinode is seeing this trend replicated in the Middle East. More and more people are choosing to fly and they are choosing to fly more frequently. Brokers are not just relying on those who have always flown, they are seeing an increase in new customers too.

We can see from the requested business jet departures data, which represents the charter requests received by Avinode, the spikes in the summer months of 2012, 2013 and 2014. Demand this year, however, appears to be more stable which can be linked to travellers' confidence in the market.

The Middle East was booming prior to 2008 and was hit incredibly hard by the recession.

Those looking to invest in the region were the first to leave and have been cautious in coming back. However, with Dubai being selected to host the World Expo in 2020 – the first to be held in the Middle East – the anticipation is that demand for travel to the country will continue to increase, with millions of tourists and business travellers expected to visit.

Looking again at the data, the regular decline in requests in the summer each year suggests that people aren't travelling around the time of Ramadan. Similarly, September 2014 was a quieter month, though still an improvement on the previous year. November and December 2014 are expected to be strong months as well – many people fly into Dubai for the Christmas period while locals tend to head elsewhere.

Requested departure airports

Looking at Dubai, there has been an increasing number of requests for departures from Al Maktoum International Airport in Jebel Ali. This is due to the closure of one of the runways at Dubai International Airport between May and July 2014 for a refurbishment and upgrade project. As a result, the majority of business and private aviation traffic was diverted to Al Maktoum International. Although the runway reopened in July 2014, many operators have decided to keep their aircraft based at Al Maktoum which is why demand has increased and will most likely continue to do so.

Most requested aircraft

Avinode's data demonstrates that 70% of

ABOVE LEFT: Expo 2020 will boost charter movements.

ABOVE RIGHT: Avinode's Ian Croxton. the Middle East market is driven by heavy jets. Based on the top ten most requested aircraft at Avinode, the Challenger 604/605 is the most popular. Most travellers prefer it because of the cabin size and its ability to seat up to 10 passengers, the large baggage capacity and the range it can fly. From the Middle East, the Challenger can reach anywhere in Europe, making it ideal for trips to popular cities such as London and Paris.

With lots of business between cities such as Dubai, Jeddah and Riyadh, it would be easy to assume that smaller aircraft would be preferential. However, the larger sizes of aircraft, such as the Challenger, make for more comfortable travelling.

Charter in the Middle East

Talking to Avinode customers, the region is seeing an influx of managed aircraft. People are feeling increasingly confident as they watch the various business markets grow and improve – now is a good time to spend.

Although these new aircraft can't be seen on the charter market at this point, it is a sign of good times for business as it means that owners do not feel the need to charter their own aircraft. This in turn increases demand for charter aircraft.

While flying demand is high, it is still a tough market for brokers, despite an increase in new customers. Brokers have to fight harder to win clients, cutting commission in an attempt to entice travellers away from competing brokers and charter companies.

The Avinode Marketplace is the world's leading tool for buying and selling air charter online. More than 7,000 aviation professionals use Avinode to buy and sell charter flights worldwide. More than 3,000 aircraft are currently listed in the Marketplace and over 200,000 flight requests are processed each month. Avinode features include online quoting, availability reports, integrated scheduling and empty leg search as well as custom-built web and mobile applications.



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MENA private aviation is still facing challenges

Many operators from outside MENA look on with interest at the region's business and private aviation activities. **Yahya Mahmoud** looks at how European charter carrier Klasjet, headquartered in Vilnius, Lithuania, views the market.



he Middle East has been a real success story in the aviation industry, and its business aviation segment is not an exception. By 2020 the regional business jet fleet size is projected to grow from present 500 to 1,375, according to MEBAA, while the business aviation sector will be worth around \$1.3 billion.

The sector has proved its potential as traffic and flying hours across the region are up over 12% from last year. But even as the region continues to successfully recover from the economic crisis, there are still storm clouds on the horizon. With its GDP expected to grow at an average of 3.8% over the next 20 years, the Middle East remains a promising market for business aviation.

The rising importance of the segment in the region is characterised by the number of subsidiaries being launched by the region's major airlines.

For instance, Emirates has introduced its Emirates Executive service, while Qatar Airways has its Qatar Executive and Saudi Airlines has Saudia Private Aviation. The demand is also starting to attract companies offering some innovative business models, such as X–Jet, which plans to launch a service, covering all aspects of support for individually owned private jets for a fixed annual fee. "The rise of demand for private travel and related services in the Middle East is what we've been witnessing for some time now. While some 25 years ago business aviation in this region was mainly a tool for royal families and presidents, in the last 5 to 10 years the market has seen a major shift to corporate use. People started too see the benefits of private air travel as a tool to conduct business, save time and be more flexible. As a result, most of the aviation market experts are convinced that the greatest business opportunity lies in the corporate, not in the VIP market," said Vitalij Kapitonov, the CEO of KlasJet.

According to MEBAA, currently up to 70% of flights performed on private jets within the Middle East are for business purposes, while luxury travel accounts for the remaining 30%. Nevertheless, high networth individuals are still the key drivers of the business aviation growth in the region, and here comfort remains a must, as the owners are recognized as being among most demanding clients in the world when it comes to customisation and other services.

Thus, capturing the small but significant patronage of the region's high net-worth individuals is becoming increasingly competitive as more private jet charter companies tap into a market that is expected to grow by around 12% in the next two years. ABOVE: Vitalij Kapitonov, CEO of KlasJet sees Middle East market becoming more competitive.

BELOW: Klasjet aims at more MENA activity. However, despite the positive signs, several obstacles are limiting the potential expansion of business aviation operations in the Middle East.

"The market in the Middle East has been significantly damaged by a combination of political shocks and the global economic crisis, thus undermining demand from business users and wealthy individuals. As a result, business aviation is still almost nonexistent in such countries as Yemen, Syria and Libya. The lack of the skilled labour including pilots, flight planners, engineers and air traffic controllers should be taken into account as well," Kapitonov said.

According to the Klasjet CEO, other problems include airport congestion and the use of air space, which is becoming increasingly crowded as the big airlines launch more routes. The situation is further exacerbated by the fact that a large part of airspace is reserved for military use. Removal of these barriers would help to further accelerate the growth of the market in the Middle East.

"Of course, such problems are symptoms of success more than anything else. However, if the industry is determined to maintain its current trajectory and reach its full potential in the future, then it will have to find solutions to such issues sooner or later. For now, however, the main focus of the regional authorities has to remain on quality and safety of operations. With this in mind, opening the market for more certified competition would definitely help in keeping the bar high enough," Kapitonov said.



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Breaking New Ground

The Middle East has witnessed the introduction of a number of new aircraft types over recent years. But as the depth of the market expands there are far more opportunites. **Kate Sarsfield**, Business Aviation Editor at *Flightglobal* takes a look at each of the key sectors and highlights the new models that this innovative aviation sector will bring to the global market over the coming years to whet the appetite of discerning customers.









Corporate airliners and large aircraft



LOOMING LARGE

As the Middle East market clearly demonstrates, the top end of the business jet market has been left largely unscathed by the financial downturn due to continued demand for high-end aircraft from the world's wealthy elite and global corporations.

According to Ascend, a Flightglobal advisory service, this sector - which spans the \$31 million Challenger 605 to the Airbus ACJ321 - represented 69% of the \$18.5 billion business jet delivery value in 2013. Ascend expects the popularity of these top-end aircraft to continue for the next 10 years, as a wave of new designs enter the market. In its latest forecast it predicts nearly 10,000 business jets from across the spectrum will be delivered between 2013 and 2023, with a total delivery value of \$258 billion. Of this, the large-cabin/long range/VIP airliner segment is predicted to account for around 60% of the value share.

BOMBARDIER

This prognosis is supported by Bombardier. In its latest market forecast it predicts that 5,250 aircraft in the \$50-75 million category – the Global 5000 upwards – will be delivered between 2014 and 2033, representing 24% of overall business aircraft industry unit shipments and 46% of the total delivery revenues.

In light of this sanguine prognosis, it is not surprising that the newly restructured company has decided to review its development priorities. The appraisal could ABOVE: The Global 8000 becomes top of Bombardier's priority list

BELOW: The Global 7000 has almost 75 cubic metres of cabin space. lead to the ultra-long range Global 7000 and 8000 programmes being shifted to the top of its development pecking order.

The large-cabin and ultra-long range types were launched in 2010, with an entry into service date of 2016 and 2017, respectively.

Both aircraft will be powered by General Electric's 16,500lb-thrust (73kN) Passport 20 engine and feature an all-new, highspeed transonic wing.

The Global 7000 will have a 74.9m3 (2,650ft3) cabin -20% bigger than the

Global 6000, which currently sits at the helm of Bombardier business jet family.

The aircraft will have a high-speed cruise of Mach 0.90 and a range of 7,300nm (13,500km) at M0.85. Bombardier has given no indication of when the Global 7000's flight test campaign will begin, but it stresses that the aircraft remains on track for certification in 2016.

The Global 8000 will feature a 63.4m3 cabin and have a range of 7,900nm at M0.85.

DASSAULT

The French airframer is developing two new business jets in parallel, marking what it calls "an unprecedented financial investment" in Falcon jets. The firm now boasts a family of six aircraft at the upper end of the range, from the 3,350nm-range super-midsize 2000S – Dassault's entrylevel offering – to the latest "flagship" 8X, with a 6,450nm range.

Launched in May, the 8X will have the longest cabin and greatest range of any Falcon produced in the company's 50-year history, when it enters service in 2016.

The trijet is an enhanced and stretched -version of the airframer's former flagship -Falcon, the 7X, which entered service in 2007 and is now approaching its 250th delivery milestone.

The 8X offers 500nm more range than the 5,950nm 7X, allowing it to connect more city pairs than its stablemate – notably the Beijing-Los Angeles and Hong Kong-London routes. The growing Chinese





market was instrumental in the launch of the 8X, and the country now accounts for around 30% of the region's business jet fleet. The desire for long-range aircraft, mainly from Chinese entrepreneurs, has resulted in deliveries of 30 7Xs in the past three years alone, including 11 7Xs in 2013.

To allow for the extra range, Dassault added an additional fuel tank within the centre fuselage section, which enables the 8X to carry up to 15,800kg of fuel.

The 19-seat aircraft also features a redesigned wing derived from the Falcon 7X, which has an optimised leading edge profile and winglets. It will be powered by three Pratt & Whitney Canada PW307D engines, each delivering 6,720lb-thrust.

The 8X has an anticipated balanced field length of about 1,830m, an approach speed of about 107kt at typical landing weight and an ability to make approaches at up to 6°. Like the 7X, it will operate at many of the world's most challenging airports, including London City, Aspen in Colorado, La Mole-Saint Tropez in France and Saanen in Switzerland, which are normally not accessible to most large-cabin aircraft.

The cockpit will feature a new iteration of the EASy flightdeck, based on Honeywell Primus Epic avionics, with Honeywell flight management systems. Another facet of the cockpit is the head-up display technology, provided by Elbit Systems, combining enhanced and synthetic vision.

The 8X has the same cabin cross-section as the 7X, but more than 1.1m has been added to the length. This extra space has allowed Dassault to offer three floor plans in 30 different interior configurations, and up to 33 windows – four more than the 7X.

Two aircraft are being built for the certification campaign. The first aircraft is already assembled and undergoing vibration testing at Dassault's Mérignac plant in Bordeaux. First flight is planned for early 2015, leading to certification in the first quarter of 2016 and service entry later that year.

Dassault has already broken ground on a completions facility at its Little Rock, Arkansas site to accommodate the 8X and the all-new 5X.

Unveiled last year, the large-cabin, longrange 5X will be Dassault's largest business aircraft – eclipsing even the 8X – with a ABOVE: The Falcon 5X will be Dassault's largest business aircraft.

BELOW: The Falcon 8X will be flying in 2015 ready to take over as the flagship of the Falcon fleet. fuselage diameter of 2.7m and a cabin height of 1.98m.

The twinjet also boasts a new wing – similar in size to the 7X's – and a new digital flight control system, both developed in-house. The DFCS integrates all moving control surfaces for the first time. This includes a flaperon that enables steep approaches at slow speeds.

The 5X will feature the same newgeneration EASy cockpit and head-up display as the 8X.

Unlike the 8X, the M0.8 aircraft will be powered by Snecma's Silvercrest engine, marking the first time a Falcon has been launched with an all-new powerplant, or one produced by the French manufacturer.





The aircraft boasts a maximum take-off weight of 31,500kg and a range with eight passengers of 5,200nm.

The first development aircraft has been assembled and is on target to make its first flight in the middle of next year, leading to certification and service entry in 2016 and 2017, respectively. Three development aircraft will be built and the first will be retained for future development work.

The 5X could ultimately be grown to provide Dassault with a competitor for the –Bombardier Global 7000 and Gulfstream G650/ER, but the airframer says it has no plans to launch another programme until the next decade at the earliest.

GULFSTREAM

The Savannah, Georgia-headquartered airframer dominates the top-end of the business jet sector, after doubling its family of large cabin and long-range aircraft this year with the launch of three new models.

May marked the unveiling of Gulfstream's flagship, ultra-long-range G650ER. The twinjet – which received US certification earlier this month – is a longer-range version of the baseline G650, with the ability to fly 7,500nm with eight passengers. Gulfstream says its decision to launch the ER variant was due to customer demand for more range and capability. "While the G650 covers a huge numbers of city pairs with its 7,000nm range, there are always people who need to fly further," it says.

To accommodate this extra range, the G650ER incorporates about 1,810kg of extra fuel compared with the G650. This has been added without the need to strengthen the –airframe structure and landing-gear or increase engine thrust, the airframer says.

ABOVE: Gulfstream's G650 already popular in the Gulf now has extra legs with the G650ER.

BELOW: Boeing too is looking at improvements with its BBJ737 MAX. Take-off length is extended slightly by just over 134m to 1,920m, while maximum ramp and fuel weight are increased by 1,810kg to 47,000kg and 21,900kg, respectively.

Despite the extra mass, the G650ER will share the same ceiling and operating speeds of the G650, including its M0.85 normal cruise and M0.925 maximum cruise speeds.

With the exception of the minor adjustments, the G650ER is identical to its stablemate, which became Gulfstream's most successful product introduction ever following its launch in 2010, and now boasts a three-year waiting list. Some G650 position holders have already switched to the more expensive ER variant, which has begun rolling off the production line. For existing G650 owners, a \$2 million ER retrofit is available throughout Gulfstream's service centre network.

October marked the launch of two new clean sheet, large-cabin business jets. The G500 and G600 will be powered by a pair of Pratt & Whitney Canada PW800 turbofans - breaking a 50-year relationship between Gulfstream and Rolls-Royce – and will feature Gulfstream's Honeywell Primus-Epic-based Symmetry flightdeck and fly-by-wire flight controls. The \$43.5 million G500 is being developed first. Maiden flight is slated for 2015, leading to US and European certification in 2017 and service entry in 2018. Flight testing of the G600 will begin between 12 and 18 months after the G500's first flight. Entryinto-service for the \$54.5 million aircraft is slated for 2019.

BOEING

The airline manufacturer officially launched its line of Boeing Business Jets, based on its 737 Max, in April, following an order from an undisclosed existing BBJ owner.

The sale comes 18 years after Boeing and General Electric teamed up to develop the BBJ version of the 737. Unlike the initial BBJ, which was based on the 737-700, the first Max-based BBJ variant to be ordered is derived from the larger 737 Max 8, and is designed to succeed the current 737-800-based BBJ2. The BBJ Max 8 incorporates the aerodynamic and systems improvements of the standard Max, as well as the fuel efficient CFM International –Leap-1B engines, providing a range of 6,330nm – around 800nm more than the standard BBJ's.

Boeing is still studying plans for BBJ Max 7, based on the 737 Max 7, but the business case is not yet clear. The BBJ Max family will, however, include the larger BBJ Max 9, based on the 737 Max 9. The aircraft will have a range of 6,260nm.

The initial variant of the Max is due to enter flight tests in 2016, although the first BBJ version will not be delivered to a completion centre until 2018. The next available slot for a BBJ Max 8 is 2019.

Meanwhile, the first BBJ 747-8 was scheduled to roll out of the completion centre as this edition of the *MEBAA Review* was printed. So too is the first 787 modified into a BBJ. Boeing says it has three BBJ 787s in completion and a fourth will be delivered later this decade.



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ECFT operates two facilities. The original facility close to the Dubai International Airport was the first training centre of its kind in the Middle East to be approved by the European Aviation Safety Agency (EASA), the US Federal Aviation Administration (FAA) and UAE General Civil Aviation Authority (GCAA). Since 2012 ECFT is operating another ultra-modern facility in Dubai Silicon Oasis which has been growing rapidly to its full capacity within one years' time and ready for further growth.

Continuous expansion increased ECFT operations in the Middle East to its current position of servicing over 200 aviation clients and training more than 15,000 pilots and technicians a year on a range of Airbus, Bell Helicopter, Boeing, Bombardier, Dassault, Gulfstream and Hawker Beechcraft aircraft types.





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Mid size aircraft

MIDSIZE MANOEUVRES

The superlight and midsize sectors have also had a tough time. This broad segment – which spans the \$13.8 million Learjet 75 to the \$24.5 million Gulfstream G280 – represents 43% of the global business jet market according to Ascend, but its overall value has declined since 2013 by more than 10%. The decline has been more pronounced in the superlight sector, however, which saw its value of its deliveries fall from more than 25% of the total market in 2008 to around 10% in 2013.

There are signs that this segment has already started to rebound, and aerospace analyst Rolland Vincent is buoyed by its prospects.

"We are more bullish about this sector than any other," he says. "The purchase indications in our recent survey for the last 15 quarters reveal a great deal of interest in midsize models, particularly in the USA where over 70% of the fleet is based... Buyers are intrigued by the host of new aircraft being developed."

He argues the superlight/midsize sector offers more value to buyers than many of the light- and large-cabin offerings on the market today. "They have large stand-up cabins, long enough ranges to meet virtually all transcontinental US missions and even the occasional transatlanctic crossing from the US northeast," he says. Many new buyers are choosing to opt for a midsize business jet straight away rather than move up through the segments, he adds.

Ascend shares Vincent's optimism. In its

recent 10-year forecast, the data services provider reveals a steady year-on-year increase in deliveries across these two segments between 2014 and 2023.

This delivery surge is attributable to the plethora of tantalising, groundbreaking new designs and overhauled models that are taking centre stage in this busy market segment.

BOMBARDIER

The Canadian airframer has had a busy year. December marked the entry into service of the superlight Learjet 75 – a remodelled version of the 16-year-old Learjet 45, featuring more powerful Honeywell TFE731-40BR engines, a Garmin G5000-based Vision flightdeck and a new interior. Six months later the upgraded Challenger 350 entered service, replacing the industry's best-selling supermidsize model, the Challenger 300. The 10-seat Challenger 300 entered service a decade ago and ranked second in the shipment charts in 2013, with 55 aircraft shipped.



TOP: The Citation Latitude is expected to enter service in 2015.

ABOVE: Bombardier's Learjet 85 looks promising but lower on the Canadian company's priority list. The 350 is powered by Honeywell HTF7350 turbofans and features a Rockwell Collins Pro Line 21 advanced avionics suite and a revamped cabin with Lufthansa Technik's Nice high-definition cabin management system, contemporary seat design and a new modular galley.

Meanwhile, the future of Bombardier's newest midsize offering, the Learjet 85, is





unclear following the airframer's decision in July to review the certification and entry into service timeframe of the cleansheet design as part of a wider rethink of priorities with the Global 7000 and 8000 programmes. The 10-seat aircraft was launched in 2008 and entered flight testing on 9 April this year – more than two years late – due to what Bombardier vaguely described as challenges with the composite construction. The Learjet 85 has continued to perform test flights in Wichita, but Bombardier has steadily refused to clarify the entry into service date for the aircraft.

CESSNA

As with the light sector, Cessna is a preeminent player in the superlight and midsize segments. Two of its established platforms – the Citation Sovereign and high-speed X – have each undergone a major makeover in the past year.

Cessna will be hoping the improved performance, revamped interior and Garmin G5000 flightdeck will heighten the appeal and extend the life of the 10year-old and 18-year-old designs for some time to come.

As competition has intensified in this sector, however, Cessna has turned its attention to new designs to challenge rival offerings.

The first new aircraft to come to market will be the Latitude midsize business jet. Cessna has set its sights on 2015 certification and service entry of the midsize jet, which was launched in 2011 and falls neatly within the gap created between the 3,000nm (5,560km) Sovereign+ and the 2,100nm Citation XLS+.

The nine-seat twinjet has logged around 100h of flight time since making its

ABOVE: Brazilian manufacturer Embraer is expecting a hit with its Legacy 500 with performance exceeding expectations.

BELOW: The Legacy 500 cabin offers features typically found in a large cabin aircraft. maiden flight on 18 February, and Cessna says it has already achieved its full performance envelope, reaching its maximum speed of 440kt (815km/h) and altitude of 45,000ft. The Latitude shares the wing, aft section and the Pratt & Whitney Canada PW306D engine with the Sovereign+, but it introduces a wider and taller cabin, stretching the width by 28cm

(11in) to 1.96m and the height by 10cm to 1.83m. The 2,500nm-range Latitude also features the Garmin G5000 integrated flightdeck and Clarity cabin management system.

These interior features are also destined for the new super-midsize Longitude, which is scheduled to enter service in 2017. The Longitude sits at the top of Cessna's product line. It uses the same fuselage cross section, windows, passenger seats and aluminium construction as the smaller Latitude, but according to the technical specifications will be 2.74m longer. Powered by a pair of FADEC-controlled, 11,000lb-thrust (49kN) Snecma Silvercrest engines, the Longitude is projected to have a maximum take-off weight of around 55,000lb, a maximum range of 4,000nm and a maximum cruise speed of 490kt. Cessna is rumoured to be evaluating a change in the Longitude design. This may be its interim answer to a large-cabin offering, which the airframer is unlikely to consider in the medium term, given capital constraints and the underperforming light jet sector.

EMBRAER

Embraer is poised to deliver the first Legacy 500 business jet, having received certification for the midsize type in August. The Mach 0.83 10-seat aircraft will be joined next year by its superlight stablemate, the M0.82 Legacy 450.

The clean-sheet Legacy 500/450 were launched in 2008. The programmes have raised the benchmark for superlight and midsize products by offering features typically found on a large-cabin business jet. These include fly-by-wire flight controls, a 2m cabin height and an extensive baggage area. Both aircraft also feature Honeywell HTF7500E turbofan engines and Rockwell Collins Pro Line Fusion avionics.

The Legacy 500 beat several critical performance metrics during the flight test phase, and can now can take off in 1,250m (4,100ft), compared with the originally promised 4,600ft, increasing the number of missions the aircraft can perform. Embraer says its strategic aim with the Legacy 500 is to compete with established midsize players such as the Sovereign+ and the Challenger 350 in the super-midsize category, which has held-up well during the downturn.

Embraer's next task is to usher the midlight Legacy 450 through certification tests. The aircraft first flew in December 2013, and Embraer believes the flight test programme can be completed within 600 flight hours. Certification is scheduled for mid-2015.



Light and very light jets

LIGHT LETHARGY

It has been a long and miserable few years for the lower end of the business jet spectrum. The financial collapse of 2008 has been brutal to this huge sector, triggering the disintegration of traditional markets in Europe and the USA, and eroding a long established and previously flourishing customer base. The Middle East market has always failed to take up the lighter aircraft

This segment – which spans the \$2.9 million Eclipse 550 very light jet (VLJ) to the \$9.4 million Cessna Citation CJ4 light twinjet – commands a 40% share of the 18,500-strong global business jet fleet, but demand for these models has dissolved since the financial crisis and has yet to recover.

"This sector was hit harder than any other [mature] market segment," says Daniel Hall, senior analyst with Ascend. "A sustained weak market and intensifying competition [with 13 types in this sector] has resulted in plummeting values. Most ten year-old aircraft have seen their value halved in nominal terms,"

Hall believes the light jet market can only fully recover when the traditional markets have recuperated. Thankfully, the economic recovery in the USA – home to around 70% of the VLJ and light-cabin fleet – is beginning to take hold, with a GDP growth of about 3% expected this year.

With the exception of the UK and Germany, Europe – home to around 12% of the global VLJ/light jet inventory – remains very fragile, however. "The global financial crisis has been compounded by the euro currency crisis and the collapse of economics in specific [previous strong markets for light jets], such as Portugal, Ireland, Greece and Spain," says Hall.

According to fellow aviation analyst Rolland Vincent, a major barrier to recovery is the oversupply of aircraft in the US market. Large volumes of business jets, particularly in the light jet sector, were delivered during the 2006-2008 timeframe due to high demand. "Many aircraft are being used extensively, while others are being parked until a buyer comes along," says Vincent.

This over capacity has caused residual values to plummet. This is turn forced many aircraft owners to keep hold of their assets, rather than sell them at a huge loss. ABOVE: Embraer's Phenom 300 is expected to be seen operating from Abu Dhabi in 2015.

BELOW: The Very Light Jet (VLJ) Eclipse 550 is attracting interest from Turkey and the UAE. Citing Ascend data, Hall reveals that first owners sold their aircraft after four years on average in 2004. This dropped to less than three years in 2008, and in 2014 an owner is holding on to their aircraft for around seven years. For the many customers who have had no choice but to sell their aircraft – often at a huge loss – this has left a bitter taste in the mouth, Vincent says. "Luring these customers back to the fold will not be an easy task," he adds.

What is needed is a fresh approach towards light business jet design, as many of the offerings in this segment are "simply too small" for many owners, particularly in North America.

He points to research from the US Department of Health and Human



Products

Services, which reveals the average weight of an American man in the 95th percentile has increased by 24% – or more than 23kg (51lb) – in the 40-plus years spanning the era of the earliest business jet designs to the pre-recession period. Average height also increased during the same period by nearly 1in.

"The traditional customer has evolved over the years," says Vincent. "Many of the light business jets around today were designed with the smaller traveller in mind." Embraer broke the mould with the Phenom 100 and 300, which have proven very popular within the segment due to their spacious cabins. The types are the largest in the entry-level and light-cabin segments. The Phenom 300 was the most popular aircraft in 2013, with 60 of the twinjets delivered between January and December.

Other manufacturers are under pressure to increase the cross sections of their aircraft, or bring something unique to the market within this increasingly large and crowded sector.

CESSNA

Cessna has made no secret of its intention to launch a new family of "wide cabin" light business jets, and says the key drivers of this future line-up will be a larger cabin, modern avionics and improved efficiency and direct operating costs.

The Textron Aviation subsidiary is already a market leader in the light business jet sector, with five aircraft in its line-up. This includes the 1,200nm (2,220km) entry-level Mustang, the 1,600nm M2, 1,800nm CJ2+, 2,100nm CJ3+ – which entered service in September – and the 2,400nm CJ4.

The airframer is well aware of the market appeal of small jets with large cabins. In 1994 it launched its Excel business jet to huge critical and customer acclaim. The 1,900nm aircraft was launched as a competitor to Bombardier's Learjet 45 –



TOP: The Hondajet is likely to be the gamechanger when achieves certification in 2013.

ABOVE: The cabin of the Cirrus SF50, the first of the true personal jets to become available. which was introduced two years earlier, creating a new aircraft segment coined superlight.

Two years ago Cessna announced plans to launch a new family of "wide cabin" light business jets and unveiled a concept design to garner customer feedback.

Cessna declines to comment specifically on the current status of the project, but says it is "continuing to aggressively invest in new products". "Future new product

development opportunities will leverage



the expertise and technology from the combined Cessna and Beechcraft teams," the airframer says.

While the lower end of the business jet spectrum may be playing a very protracted and frustrating waiting game, this has not dampened the spirit of innovation which is still alive and well across the sector.

Both established and independent airframers are producing the current wave of new aircraft in an advanced stage of development.

CIRRUS AIRCRAFT

The US developer of the SR family of piston singles is on track to deliver the world's first single-engined personal jet late next year, and has already received 550 firm orders for the seven-seat Vision SF50.

The first production conforming aircraft, C0, flew for the first time on 24 March. It is being used for performance verification and, towards the end of the programme, will undertake in-air parachute testing. Aircraft C1 is scheduled to take to the skies before the end of the year and will be used for systems, ice and engine testing. A final flying prototype, C2, will join the flight test programme early next year and will undertake reliability evaluations. An earlier configuration technology demonstrator,V1, has accumulated around 800 flying hours and 1,000 engine runs since it was built in 2008.

The \$1.96 million, carbonfibre Vision is equipped with a Garmin G3000 flightdeck and an emergency parachute system. Powered by a Williams International FJ33 turbofan, the aircraft has a range of 1,200nm, a stall speed of 61kt and a cruise speed of 300kt (556km/h).

HONDA AIRCRAFT

After an 11-year certification effort, the HA-420 HondaJet is finally approaching the finishing line. Certification of the light jet is scheduled for the first quarter of 2015, leading to first deliveries soon after.

Joint venture partners GE Aviation and HondaJet clinched Part 33 certification for the 2,100lb-thrust (9kN) HF120 engine late last year, following an intensive programme that involved 13 engines and 14,000 cycles in 9,000h of testing. The light-cabin, Garmin G3000-equipped business jet has a maximum cruise speed of 420kt and a range with four passengers of 1,180nm.

PILATUS AIRCRAFT

The Swiss airframer made its first foray into the business jet market with the launch in May 2013 of its PC-24. The light twinjet was rolled-out in August, and will be making its debut at the MEBA show in Dubai having been scheduled to make its first flight before the end of the year. Pilatus – developer of the PC-12NG single-engined turboprop – says the PC-24 has been so well received that production of the Williams International FJ44-4Apowered aircraft is already sold out for the next three years.

SYBERJET

The Cedar City, Utah-based start-up is planning to fly its SJ30i later this year. The Mach 0.83 light business jet is a revamped version of the SJ30 – originally built by Sino Swearingen and later by Dubai's Emivest, before being acquired by its current owner MetalCraft.

The latest model will feature a Honeywell Primus Apex-based flightdeck called SyberVision and a new interior when it enters service in the second half of next year.

SyberJet is also developing a more powerful version of the seven-seat twin, dubbed the SJ30x. This model is scheduled to enter service in 2017, featuring more powerful Williams International FJ44-3AP-25 engines and dual FADEC controls. SybetJet says: "The SJ30x will offer more range, quicker time to climb, higher cruise speed at altitude, better hot-and-high performance, increased payload and singlepoint pressure refuelling."

Turboprop Aircraft



TURBOPROP TURNAROUND

This niche sector has been largely shielded from the downturn due to turboprops' versatility and favourable operating costs in the face of high fuel prices. Perhaps not surprisingly models such as the Quest Kodiak, Cessna Caravan and Beechcraft King Air have fared better over the turbulent six years than traditional VIP/executive models such as the Piaggio Aero Avanti due to their appeal across a broader utility market. That said, the sector has enjoyed strong government demand,

ABOVE: The Quest Kodiak is offering utility capabilities to the region.

BELOW: The first Epic 1000 is due to be flying by the year end. says Teal Group aerospace analyst Richard Aboulafia, "because customers continue to prefer cabin size over speed, as the VLJ segment shows".

The past few months has seen the introduction of the TBM 900 – Daher-Socata's latest iteration of the venerable TBM 700 – and over the proceeding two years a clutch of new and upgraded designs are set to enter this increasingly crowded market.

EPIC AIRCRAFT

Epic Aircraft is planning to fly its E1000 single-engined turboprop before the end of the year, and launched a major sales and marketing push for the aircraft at the NBAA Business Aviation Convention and Exhibition back in October. The \$2.75 million E1000 is a certificated, factorybuilt version of the \$1.95 million Epic LT kit plane, the last of which is now being assembled at Epic's Bend, Oregon facility, and will be handed over before the end of year.

While Epic is faced with some tough competition in this sector from established

Products

brands such as the Pilatus PC-12NG, TBM 900, Cessna Caravan and Piper Meridian, it is confident there is still space in this niche sector for a high-speed, low-cost aircraft like the E1000.

The growing orderbook for the Garmin G950-equipped aircraft proves his point. "Epic has sold 30 E1000s to date and its Russian distributor, Engineering LLC, has an order for 25 aircraft," says Mike Schrader, Epic's Director of Sales.

The Pratt & Whitney Canada PT6-67Apowered E1000 has a projected maximum cruise speed of 325kt (601km/h), a range of 1,600nm (2,960km) and a ceiling of 34,000ft. Certification and service entry are scheduled for late next year.

EVEKTOR

After nearly a decade spent scratching around for funding to bring its first twinengined turboprop to market, Evektor has finally struck gold. In July, the Czech company secured a \$200 million investment from Malaysian company Aspirasi Pertiwi, around \$50 million of which will help to bring the EV-55 Outback to market by the end of 2016.

The 14-seater was launched in 2005 and bankrolled by Evektor from profits generated by its light sport aircraft range and other engineering projects. The Czech government has also supported the programme, and with all the funding raised so far has enabled the airframer to build an EV-55 prototype (MSN001), which made its maiden sortie in 2011. It has now logged around 180h to date and a production conforming aircraft is now being assembled in preparation for its first flight early next year.

Powered by a pair of Pratt & Whitney Canada PT6A-21 engines, the EV-55 is Evektor's first foray into the business and utility aircraft market. The manufacturer says its objective with the EV-55 is to replace the huge fleets of "obsolete" six- to nine-seat piston twins – including Cessna 402/404s – and be a "successful competitor" to the ubiquitous marketleading Beechcraft King Air and the single-





engined Pilatus PC-12NG and Cessna Caravan.

KESTREL AIRCRAFT

ABOVE: Kestrel is

market

looking for a foreign

investor to help bring the turboprop to the

BELOW: The G90XT

is the first of several

King Alr upgrade

Aerospace

programmes being

planned by Nextant

Alan Klapmeier, founder and Chief Executive of the US start-up, is planning to bring on board a foreign investor that he hopes will put the Kestrel highperformance, single-engined turboprop on track for service entry in 32-36 months.

Kestrel – derived from the Farnborough Aircraft F1C3 prototype – would take advantage of new advances in carbonfibre airframe technology, which Klapmeier pioneered with the Cirrus SR20 and SR22 piston singles while at the helm of the Duluth-based airframer. The Honeywell TPE331-14GR-powered Kestrel has a projected range of 1,300nm and a maximum cruise speed of 320kt. The aircraft will also feature the Garmin G3000 avionics suite.

NEXTANT AEROSPACE

Having secured market approval for its first remanufactured aircraft – the 400XTi light business jet – Nextant has turned its attention to a second aircraft from the Hawker Beechcraft stable. Its revamped King Air G90XT made its first flight last month and Nextant is planning to certificate and deliver the modernised twin-engined turboprop next year.

The G90XT is the first of several King Air upgrade programmes planned by Nextant and its programme partner GE Aviation. This first model replaces the C90's Pratt & Whitney Canada PT6 turboprop engines with GE H80s – a modernised version of the Walter M601. Other upgrades include the addition of a Garmin G1000 flightdeck – unveiled in late July at the AirVenture show in Oshkosh – a new interior and a refresh of all life-limited components.

PIAGGIO AEROSPACE

Middle Eastern operators can expect to hear a lot more about this aircraft following the move by Abu Dhabi investment company Mubadala to take full control of the Italian manufacturer earlier this year.

The additional investment has seen Piaggio make some step changes.

It launched the third-generation P180 Avanti in May, in an effort to breathe life back into the beleaguered twin-pusher programme. The EVO – short for Evolution – incorporates a host of improvements and upgrades over its Avanti II predecessor, which entered service nine years ago. These include a revamped and quieter interior, enhanced safety features and increased performance thanks to an auxiliary fuel tank, winglets, redesigned engine nacelles, a reshaped front wing and five-blade composite scimitar propellers, which combined with aerodynamic changes reduce external noise by 68%.

EVO flight testing began in February, and the test aircraft has so far clocked up more than 100h, says the Mubadala-owned company. Certification and service entry are on track for year-end.

Business Aircraft book is a gift for MEBAA

Members of MEBAA will be receiving free copies of the *Pocket Guide to Business Aircraft* produced by Alan Peaford, editor of *Arabian Aerospace* and in association with Flightglobal and with support from Rolls-Royce and Rockwell Collins.

The book contains details on every one of the aircraft mentioned in Kate Sarsfield's analysis and plenty more besides. Every business aircraft still in production and all helicopters designed for corporate or VIP missions are included in the 2015 Pocket Guide. With more that 430 pages the book contains technical data, programme updates and analysis of each type.

"We decided to make the book available to members of MEBAA and VIP visitors to the MEBA show. It is the real authority for business aviation owners and operators and is essential reading for those working in the industry whether in flight operations or support services," said Ali Al Naqbi, Founding Chairman of MEBAA.

For those not able to claim their free copy, books are available for \$30 on the www.aerocomm.aero website.

Breaking barriers

Alan Peaford reports on one new business jet project that is set to get the Middle Eastern pulses racing.

erion's dogged 10-year ambition to bring the first supersonic business jet to market early in the next decade has taken a leap forward, after the American design team joined forces with Airbus to "collaborate on technologies associated with the future of highperformance flight".

The partnership said it will "exchange knowledge and capabilities in design, manufacturing and certification" to "further their mutual objectives".

Under the agreement, Airbus's Defence & Space division will provide technical and certification support – which includes assigning senior engineering staff to Aerion's expanding facility in Reno, Nevada.

"This is a major step forward for Aerion," says company chairman and principal investor Robert Bass. "It puts us solidly on track toward our objective of certifying the world's first supersonic business jet in 2021."

Over the longer term, Aerion will provide proprietary technology and assistance to

The Aerion Supersonic business jet now has a manufacturer in place.

Airbus in its high-performance aircraft technology development. These technologies include Aerion's extensive research, its proprietary design tools and patented aerodynamic designs.

The collaboration is a major breakthrough for Aerion as it enters a design phase in which propulsion systems, structures, avionics and equipment are specified and sourced, it says, but are yet to be disclosed. Aerion is targeting first flight of the \$100 million-plus AS2 trijet in the 2019 timeframe. But Airbus has hinted it could be even sooner. And that is great news for the proportionately high number of Middle Eastern potential owner who have already parted with their funds in order to secure one of the early production slots.

"This agreement accomplishes two major objectives," says Aerion Chief Executive Doug Nichols. "It provides validation from the industry leader in aerospace innovation, and it decisively kicks the programme into high gear. Each company will benefit. Aerion moves quickly toward building a supersonic jet, and Airbus gains exclusive access to more than a decade of successful research and proprietary highperformance aircraft technology." The AS2 was launched in May as a larger, reimagined version of Aerion's 10-year-old SBJ twinjet design. The aircraft has a target supersonic cruise speed of Mach 1.6 and a supersonic natural laminar-flow wing, which Aerion calls "the key enabling technology behind practical and efficient supersonic and high-subsonic flight".

It has a projected maximum take-off weight of 52,200kg (115,000lb) and a minimum projected range of 4,750nm (8,800km).

Underlying the new aircraft design is a completely different approach to the –propulsion system.

Aerion had previously selected the 1960svintage Pratt & Whitney JT8D –engine, but dropped the low-bypass ratio turbofan last year after new take-off noise regulations made it prohibitively expensive to adapt for supersonic speed.

At the same time, the company founded by billionaire Robert Bass launched a search for a new propulsion system, hoping that an engine manufacturer would agree to adapt a modern engine core for a supersonic application.

Products

Aerion had already decided to lead and finance the engine development project – a billion-dollar investment, potentially before Airbus stepped in to help.

"We intend to make this programme happen, and, frankly, to maximise our return on investment" said Aerion Chief Executive Doug Nichols.

The new aircraft and engine concept was driven by a change in market strategy. The design for the transatlantic SBJ concept was based on a 2005 market study. The AS2 design is based on the conclusions of a new study commissioned by Aerion last year, which Roland Vincent Associates completed in the first quarter. The new analysis concluded there is demand for more than 600 supersonic aircraft over the next 20 years. But the study's interviews with 130 operators spread across the globe found that customers wanted more range and a larger cabin, according to Aerion.

There has been speculation for most of the past decade that the Bass investment would never see the light of day. But the billionaire has been determined it will succeed.

A former Concorde passenger he became fascinated by the whole concept of supersonic flight. "The more I dug into it, the more interesting it got," Bass told US financial news organization Bloomberg. Bass struck a deal with Richard Tracy, whose patented computer model of laminar airflow over wings had inspired him, and assembled a team of a dozen people, including an engineer who once headed Boeing's (BA) high-speed civil transport programme, to make the dream a reality.

Estimates are that Bass has spent more than \$100 million over the past decade assembling an experienced management team and ironing out technical glitches.



ABOVE: The planned interior if the AS2 has flexible cabin sizes while below, the supersonic business jet has ramp appeal. The deal with Airbus will help finalise the design, construction, and certification of the supersonic business jet.

Airbus of course has plenty of supersonic experience having been formed from the companies that built the Concorde. Allan McArtor, chief executive officer of Airbus's U.S. unit and former head of the U.S. Federal Aviation Administration, told Bloomberg his company saw value in Aerion's technology and predictive tools for airflow. "We want to get out ahead of the future," he says. "We don't want to get caught by surprise. We don't want to read about it."

The industry has predicted demand for up to 600 of the type – and there are planned options for various sizes to accommodate specific market needs.

Reducing trans-Pacific flights to less than

six hours, trans Atlantic to less than four and similar estimates for Dubai to Johannesburg or Jakarta, then even at a projected \$110 million asking price there are great prospects for the type.

Aerion also argues it flexibility could lead to commercial carriers being able to once again offer supersonic travel.

Steve Varsano, Founder of The Jet Business, who acts as a consultant for a number of Middle Eastern owners said he has five customers with letters of intent for the AS2. "There's no question that there's a market for supersonic," he said. The need for speed is more prevalent in HNWIs than in the general airliner industry.

Now the challenge for Aerion and Airbus will be selecting the right engine for the job but the MEBAA show in 2020 could be just the right place for the first public viewing.



Dynamic duo come on Stream

As Gulfstream's newest jets aim for Middle East takeoff, **James Wynbrandt** looks at the impact the G500 and G600 will have on the region's preferred business jet.

egional market growth may have slowed in 2014, but any doubts about the Middle East's (ME's) importance to the fortunes of Gulfstream Aerospace evaporated with October's introduction of the OEM's two new business jet models, announced at its Savannah, Georgia headquarters. Sharing the spotlight at the launch of the G500 and G600, which boast advances throughout the cabin and cockpit, was the launch customer: Qatar Airways, which signed an MOU for 10 firm orders and 10 options for jets, split between the new G500 and Gulfstream's flagship G650ER, for its Qatar Executive charter arm. (Flexjet, the Richardson, Texas-based fractional ownership and jet card provider, will also buy G500s as part of an order for up to 50 Gulfstreams, including G450s and G650s; Gulfstream declined to provide firm/option breakdowns.)

The Gulfstream G500 and G600 together will be offering new levels of comfort for Middle Eastern buyers.

signal that regional business jet demand is finally expanding beyond the borders of Saudi Arabia and the United Arab Emirates, "the 800 pound gorillas" of the ME market, as Trevor Esling, Gulfstream's Sr.Vice President, Europe, ME & Africa, called the pair. While acknowledging the impact regional conflicts are having on current sales, Esling said Gulfstream sees "more consistent demand from the Gulf States, hitherto a flash in the pan," including strong growth in Abu Dhabi and steady sales in Kuwait, as well as hope for a rebound in orders from Egypt. That makes its outlook "fairly bullish despite the situation around the area," Esling said.

The Qatar Airways purchase may also

In a region ruled by long-range, largecabin models, the two new aircraft should bolster Gulfstream's position as the ME's leading business jet brand, currently with about 55 percent of the market, totaling <u>some 150</u> Gulfstreams according to Esling, including one of the world's largest G650 concentrations, with 10 registered. Range-wise, the G500 and G600 (capable of covering 5,000 nm and 6,200 nm respectively) fill in the 2,400-nm gap between the G450 and G550, but the real story of the new jets isn't about range but speed, comfort and efficiency. Finding a sweet spot between aerodynamic and interior design, Gulfstream has made the cabin cross-sections larger than the G450 and G550 - wider by seven inches - while also boosting cruise speeds over these models. Long-range cruise is now Mach 0.85 (up from Mach 0.8) and high-speed cruise bumped to Mach 0.9 from Mach 0.85. (The G500 and G600's Maximum Mach Operating Speed (MMO) are Mach 0.925, while the G450 and G550's are Mach 0.88 and 0.885 respectively.) Gulfstream clearly believes the velocity increase will appeal to potential customers.

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"In reference to speed capability over

distance, the G500 will have a 3,900-nm range at Mach 0.9," said Esling. "They'll be able to run up to London [from Dubai] at high cruise speed." Singapore, Hong Kong and Beijing will also be within high-speed reach of Dubai on the G500. "With the 600, they'll be able to go down to Jo'burg [Johannesburg] and back," Esling added, as well as to Tokyo.

Dial back to Mach 0.85 and the range becomes a selling point. "When we'd go to Dubai [for MEBA] 15 years ago the question was, 'Can it do non-stop Dubai to London?' Now it's 'Will it go non-stop Dubai to the East Coast of the U.S?" The G600 will, a distance beyond even an executive configured ACJ319's range. The long-range cruise numbers speak in part to the anticipated efficiency of the indevelopment Pratt & Whitney Canada PW800 turbofan series engines that will power the new models: the 15,144-poundthrust PW814GA on the G500; and the 15,680-pound-thurst PW815GA on the G600. Also enhancing efficiency will be a new, high-speed wing, based on the G650's. The G600's span will be eight feet longer than the G500's to accommodate an additional 10,000 pounds of fuel capacity. Together, the powerplant and aerodynamic advances make the new aircraft as much as 23 percent more efficient than others in their class, according to Gulfstream. Both new models will carry less fuel than the G450, while flying farther and faster.

Gulfstream estimates the increased speed will save heavy flyers 50 hours of travel time per year when traveling aboard the G600 vs. competing category aircraft, and with a capacity for up to 18 passengers (as the G500 has), that adds up to lots of saved time.

Passengers should arrive not only more quickly but less fatigued, thanks to environmental systems (the same as on the G650/ER) that maintain at 51,000 feet a cabin altitude of 4,850 feet, and at 41,000 feet a 3,000-foot cabin, while replenishing 100 percent fresh air every two minutes. Both models boast a six-foot-four-inch





Inside and Out the Gulfstream G600 looks good. A new cabin delivers fresh air while the external view shows a stylish look. than eight feet. The G500's cabin is 41 feet, six inches long, while the G600's is 45 feet, two inches. (By comparison, the G550 cabin is 43 feet, 11 inches long.) In both, the proprietary Gulfstream Cabin Management System allows fingertip control of lights, window shades, temperature and IFE. A variety of floor plans and living space options provide owners with a high degree of flexibility in interior layouts, including the choice of either fore or aft galley, and shower. Both aircraft have a fully certified crew rest area.

cabin height, and a width just one inch less

The flight decks of the new Gulfstreams, essentially identical, also incorporate significant advances, most notably the active sidestick controls commanding the fly-by-wire system; when either sidestick is manipulated, the other reacts correspondingly, as if mechanically linked, an industry first. Esling said Gulfstream had considered sidesticks before, but "felt from a safety standpoint it was important to have" active feedback capability before adopting them.

The new avionics suite, dubbed Gulfstream Symmetry, is derived from the Primus Epic system made by Honeywell, manufacturer of the PlaneView suite on current Gulfstream aircraft, which should simplify transitions to the new aircraft for Gulfstream pilots. The instrument panel design features 10 integrated touchscreens, eliminating almost all knobs and switches and giving the cockpit the spare and uncluttered look seen in the rest of the interior. The displays will incorporate immersive Phase-of-Flight intelligence that presents structured task lists and selection options for each portion of a flight. An enhanced vision system and synthetic vision for the primary flight display will be standard equipment, and both models will

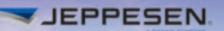
have the same Rockwell Collins head-up display as on the G650. Price for the first 50 G500s is \$43.5 million and the larger G600 is \$54.5 million.

If the market responds well to the G500 and G600, expected to enter service in 2018 and 2019 respectively, current Gulfstream owners and operators can take part of the credit. Through its Advanced Technology Customer Advisory Team, Gulfstream has "a very active mix of customers involved in the design process of the airplanes, and also in terms of their ongoing operations and support," Esling said, and those in the ME are an important part of the team.

Gulfstream has had a presence in the ME since the mid-1970s, and seeing the company's newest aircraft find its first home in the region prompted Esling to reflect on "the increasing acceptance of business aviation, the recognition of what business aviation does for you" he's seen in the region. Looking ahead at the trends that will drive continued acceptance, and adoption of business aviation, he cited Saudi Arabia's efforts to develop a consumer-based economy to complement its petrochemical-based one, and the region's growing economic ties with Africa.

"There's a huge amount of private investment going into Africa from the Middle East, into resource-driven economies – Nigeria, Angola, the eastern part of Africa," Esling said. "And Dubai's proved to be important in that investment area, so there's a lot of travel to and from" these locations.

Almost sounds like a sales pitch for the high-speed cruise range on the G500 and G600.



Exceed.

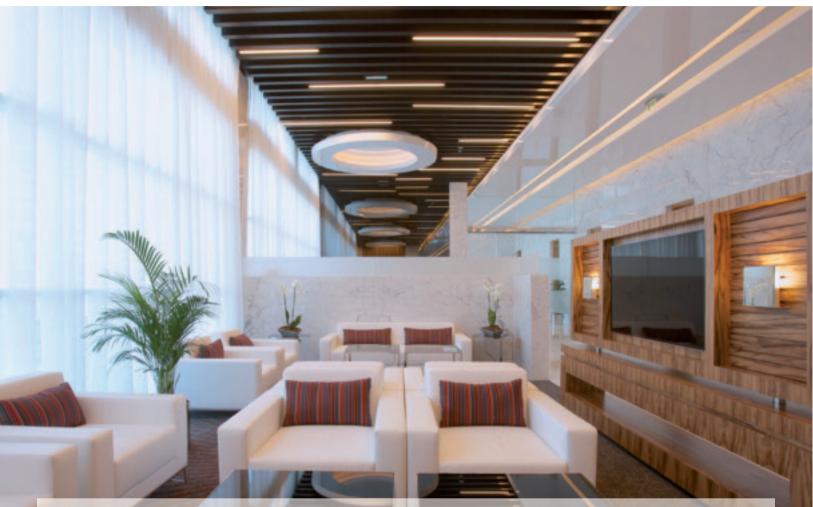
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Getting a fix

From barnstorming to Bahrain, Liz Moscrop looks at the rise of the FBO in the Middle East.

f you look at it with a cold eye, a Fixed Base Operation (FBO) is simply a place where you go to fill a great lump of metal with Jet A-1. That's if you had no soul of course. Fuelling your aircraft is just one part of what's on offer.

FBOs have a spirited history. Born of a community of American mavericks, the facilities encompass many different services. After the end of World War I in November 1918, civil aviation in the United States was primarily unregulated, comprised of "barnstormers," flying cheap surplus military aircraft from city-to-city, often landing in farm fields. These travelling aviators offered aeroplane rides, and frequently collaborated to create impromptu airshows, charging whatever they could get away with. As a result, mechanics and early flight instructors moved around the country, and had no established business in any one location. That all changed in 1926 when the Air Commerce Act came into being, insisting on licensing pilots, and adding more

The busy ramp at Jeddah offers plenty of opportunity for Jet

Aviation.

stringent aircraft maintenance and training standards. So people started to stay put and the pilots and mechanics that made their living on the road began establishing permanent businesses, hence the term "fixed-base operations."

Something of the spirit of those early years permeates the industry today, and, although providing executive aviation FBOs is a fledgling high-end sector in the Gulf, it is populated by pioneering spirits, many of whom have travelled in from faraway lands.

Although the concept is relatively new to the region, several FBOs are already in place, bringing in imaginative solutions for the burgeoning numbers of private jet users. Dhabijet, for example, has its home at Al Bateen, the only airport dedicated exclusively to private aviation in the Middle East. The FBO offers a 24/7 service and has no slot restrictions. Based in the heart of Abu Dhabi, the airport can take up to 90 jets on the stand, has no holding patterns and short taxiing times. It is five minutes' drive from the Abu Dhabi National Exhibition Centre, 15 minutes from the Yas Island Formula One Race Track and 50 minutes by car to Dubai depending on traffic.

The airport itself is set to create new airside, landside and facility space, as well as add new equipment, and improves the terminal. There are also plans for more hangars for both parking and maintenance, plus additional passenger processing and VIP lounges and the creation of a free zone.

Over in Dubai there are several established FBOs. ExecuJet Middle East has facilities at both Dubai World Central (DWC) and Dubai International (DXB), where it operates the largest business aviation terminal in the Gulf. This incorporates eight lounges and a spacious arrivals zone, plus duty-free shopping, VIP parking and limousine drop-off and pick-up access.

However, DXB is getting less friendly for business aviation users. With limited slots and pricey parking, some customers are eyeing other nearby options. Mark



Hardman, Execujet's Operations Director said: "The airport remains the ideal dropoff and pick-up location for clients with limited time in Dubai, as well as those connecting to commercial flights out of the country."

Whether GA will survive at DXB is a moot point as Emirates and Fly Dubai continue their inexorable marches forward. With an estimated US\$15–16,000 to park a regular business jet on site (and that only with a confirmed departure schedule), it is an expensive proposition for most. For now Execujet has a contract through 2016 to serve corporate aviation clients. Hardman added: "Much depends on the desires of Dubai Airports and capacity constraints. DXB is the first choice for many customers, because of its location."

That said, in addition to minimal taxiing time and unlimited slot availability, DWC is now home to five FBOs. Execujet's facility there is today the only transit lounge available. It includes a VVIP passenger area, crew rest, washrooms and showers. During the MEBA show the firm is offering 50% discounts on basic handling for clients on the static park for those quoting the special code, also for customers stopping at DWC for technical stops from now through till the end of December.

Jet Aviation also has two FBOs in Dubai. It took the opportunity to rebrand itself during the runway closures this May at DXB. In addition to the rebranding, its on site FBO now offers airside duty free shopping. In September it received the Dassault Falcon Authorised Service Centre (ASC) 2014 Award for exceptional service in the EMEA region in the "Go Team Response" category. The firm won the ABOVE LEFT: XJet is bringing us top ranked service from Denver to Dubai World Central

ABOVE RIGHT: MRO is part of the service offer from Jet Aviation in Dubai and Saudi Arabia. prize for supporting the most AOG instances in the region and ensuring minimum ground time for Dassault Falcon aircraft. Hardy Bütschi, Vice President and General Manager said: "We take great pride in being able to provide timely, reliable and professional dispatch services when they are most needed, such as during unanticipated maintenance events and lastminute AOGs."

A key player at DWC is DCAF, the joint venture between Stuttgart based DC Aviation and Dubai-headquartered Al-Futtaim. The JV has gone from strength to strength since its inception a little over a year ago, and now has European Aviation Safety Agency (EASA) approval to expand its maintenance capabilities to include the Bombardier Challenger 604/605 types.

It also offers line maintenance support to customers operating the Airbus 320 family, and Bombardier Global Express types, with maintenance performed in a 5,700 square metre state-of-the-art hangar, which has enough space to accommodate four ACJ or BBJ types, as well as two ultra-long range business jets such as the Falcon 7X, Bombardier Global Express or Gulfstream G550.

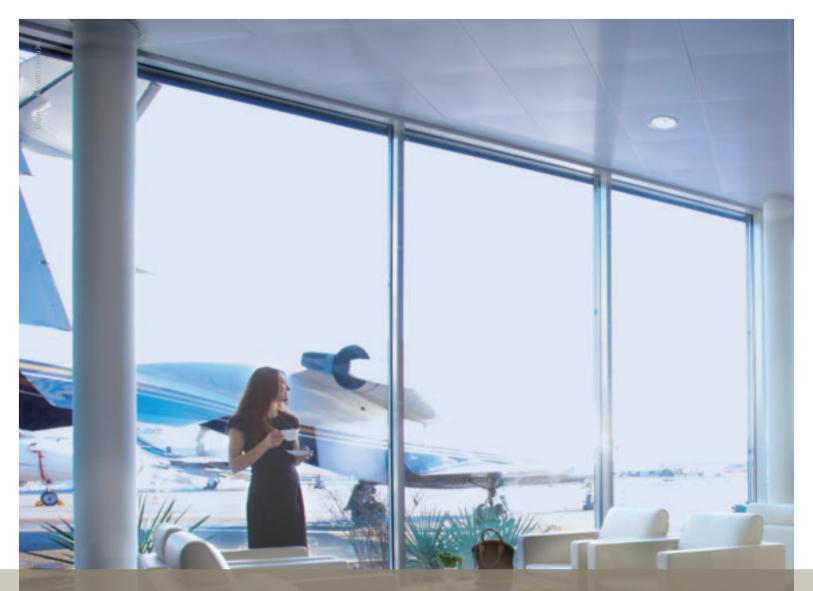
Holger Ostheimer, General Manager said: "We expect to see asset owners permanently shift their operations to DWC as owners and operators realise the convenience it offers in terms of easy access via the Dubai bypass, lesser operational restrictions and timely operations.

"By having no traffic restrictions and allowing the VVIP passenger to fly when needed and to being able to access the aircraft with is literally parked only a few steps away from the passenger lounge our facility offers all the convenience and comforts expected of a premium lounge facility."

Home grown Jetex is also on site. (The firm has other FBOs in Algiers; Amman, in Jordan; Paris Le Bourget; and Kiev, as well as a lounge at Oxford Airport in the UK). The purpose-built three storey DWC building provides crew rest quarters fitted with showers and beds, and will be fully operational in early 2015. It also offers a VIP lounge, ground support, fuelling, handling and security and concierge and catering services.

It is the official FBO for the major aviation events in the UAE held by F&E Aerospace at DWC, including this year's MEBA show. As the successful bidder for the contract, Jetex will provide pushback and towing to all arriving aircraft. The company will also offer a luxury lounge for passengers and crew, as well as CIQ (customs, immigration and quarantine), visa arrangements, aircraft parking and coordination of aircraft display areas.

The fifth venture setting up shop at DWC is Denver-based Xjet. The facility will become the company's global headquarters, extending its private club FBO model to the region. CEO Josh Stewart is passionate about delivering what he defines as "Seven Star Service," and explained: "It's not an FBO, it's Xjet, by which I mean we provide services driven by our owners' needs, such as asset protection with permanent hangar parking space if they wish." Xjet also offers a personalised programme with additional perks, like providing experienced



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Membership of the club is restricted to principals owning an aircraft of a Bombardier Challenger 650 size or larger, and revenues come from what Stewart describes as a "transparent pricing structure." This is negotiated at the outset, and includes hangarage. Xjet also offers temporary hangar space to transient clients. Stewart adds: "Most hangars are geared to maintenance. Ours are exclusively for parking." A former corporate pilot, Stewart says he wants to move his FBO model away from being 'pilot-centric' and towards being "owner-centric."

Indoor parking is not an issue for Gama Aviation in Sharjah. General Manager Richard Lineveldt said:"We offer plenty of hangarage. Some owners do want to have a permanent space, some don't. Long-term parking can be an expensive exercise, so many do not go for that. To paint a new Global or an older Gulfstream can come in at US\$150-200,000. Depending on the specific deal you have with a provider, a year's worth of parking would easily take care of that, unless you are prepared to paint your aircraft every year. Hangarage works out more efficiently in the harsh desert climate," However, he added that: "Some owners are not always certain how long they will keep an aircraft, so those costs may not come into their known operating budget for the year. We always recommend longer storage, so people don't get disappointed if there is not space available."

Until recently Gama had to share its facilities with the main airport terminal, but now has a dedicated separate part of the field just for its FBO customers, offering lounges, crew rest areas and CIQ. Lineveldt continued: "We have seen a 25% movement increase since we opened it, and are delighted that several of the business jet owners in the region have made Sharjah their home." There are at least ten aircraft based at the FBO now.



Home to the largest installed fleet of business aircraft in the region, as well as some savvy operators, Saudi Arabia is seeing its FBO offerings blossom. Jeddah has a new private aviation terminal, alleviating the pressure on the Royal terminal, which is only open to passengers of VVIP status. Spearheading FBO service provision in the Kingdom is Saudia Private Aviation, the business aviation services arm of Saudi Arabian Airlines. The company has an FBO in Riyadh, and has said it will build a new facility in the Saudi capital by 2016 in response to the growing competition at King Khalid International airport from other resident providers Arabasco, ExecuJet/NasJet and Jet Aviation. It also has FBOs at Jeddah and plans for expansion in Medina and Dammam.

Last year NasJet and ExecuJet Middle East opened a new FBO in Riyadh. The operation employs 33 staff, and consists of a crew room, ramp and operations offices and admin offices. According to Execujet's Hardman, the company handled around 1.500 movements over the year.

Jet Aviation also has an onsite FBO in Jeddah, where it offers executive and crew lounges, plus a prayer area. The firm also



ABOVE: Execujet has a contract through 2016 to serve corporate clients at DXB.

BELOW: Abu Dhabi's DhabiJet offers 24/7 service at Al Bateen. has a Saudi Arabia GACA -145 ticket to perform line maintenance services for Falcon 7X and Gulfstream GIV and GV aircraft and provide nitrogen/oxygen services for any type of aircraft.

Over in Jordan King Hussein Airport at Aqaba offers at least two dedicated VIP FBOs: one operated by Al Baddad, which provides VIP receiving and handling facilities. Jordanian Private Jets Services meanwhile operates an executive terminal for private jets, open since January 2013. JP Jets also renovated and manages the VIP Lounge at Amman Marka International Airport.

In Cairo, Universal Weather and Aviation has teamed with Zasair and will shortly be offering FBO services in Cairo. Egypt Jet Aviation offers FBO services there, too. In Turkey, Execujet and Bilen offer services at Istanbul Ataturk and Sabiha Gökçen Airports, while Bexair offers an onsite VIP terminal at Bahrain International Airport.

Elsewhere in the Gulf, ground handling and flight support teams frequently provide some traditional FBO services, even if there is no lounge or CIQ option available.

Although it has fewer operators, Beirut also offers VIP travellers a comfortable haven. Cedar Jet Center is part of Middle East Airlines Ground Handling, and based at the new General Aviation Terminal at Beirut Rafic Hariri International Airport, where it occupies the largest VIP lounge with a business centre, as well as an 1,800 square metre hangar.

In common with many operators in the region, CJC is seeing a massive opportunity for growth in the FBO sector, and the potential to forge a new FBO paradigm for pioneers of the 21st century, who are forging a new private aviation community in the Gulf. As it says on its website: "Someone has to be on earth while you are in the sky."

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Service is King

For Signature Flight Support the Middle East remains an important part of its customer base, and as **Phil Nasskau** reports, its excellent customer service is the key to it being the FBO choice for travelers across the globe.

t present it has more than 120 locations worldwide and according to Mark Johnstone, Managing Director for Europe, Middle East and Africa, business is going well. "It was a tough start to the year, but in the second half we are seeing economic activity pick up. The economic outlook is distinctly uncertain for EMEA, even with positive signs in the UK and other EU nations. However, in turn these are offset by some of the Russian and other Eastern European economies. It's a mixed bag in Europe right now, and I'd expect 2015 to be flat.

"But what really differentiates Signature from its competitors is our service. Since 2009 we have invested heavily in customer-centric training, and from the CEO to the people on the ramp, every year, every employee at Signature undergoes recurrent customer service training".

Johnstone said that by working with the most well known name in hospitality that the customer experience at Signature locations is simply second to none. And that because Signature facilities take care of the details, and boast a low turnover of staff, a customer will see the same people. "More importantly, our staff will remember the customers, and they learn what it is Mr & Mrs Big like. We've invested in a CRM database to ensure that each visit is nothing but excellent," he says.

Another angle in which Signature is keen to ensure customers have a flawless experience is with border services. Johnstone says: "in the UK the service level can be poor, as it can be across Europe. We've tackled that head-on with our own dedicated border services agents. Yes, it's an expense, but we're the only facility in the UK that can offer instant immigration and border control services.

"Or it could be something as simple as parking your car at our FBO and taking your keys with you. Some of our competitors won't do that. Above all, when a customer flies into a Signature location – they're guaranteed a level of service that delivers excellence," he adds.

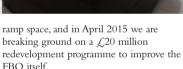


And while at present, it does not have an FBO in the Middle East; Johnstone says the company is looking at ways to have a presence there. "The significant capital investment means that right now it isn't economically viable for us to build our own facility. For example in Dubai, with the move to Jebel Ali there are around nine licenses available for FBOs. If you divide that by the traffic it's not going to provide the return on investment that we need."

However, one possible route of entry into the market could be through its pseudofranchising scheme Signature Select. Johnstone explains this as: "a chance to cobrand with a local operator, share customer data, and they get the same Signature training as our staff do. This means that we can effectively grow the network, and the existing facility can attract more traffic with our worldwide brand recognition. Not only does it increase the Signature footprint, but it can also direct more traffic to our other locations."

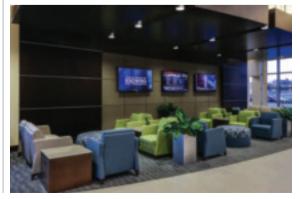
Johnstone says that its Middle Eastern customers remain important and highlights an example with its Luton facility: "For many years our Luton facility has been sub-standard. We were third for facility quality, but first for traffic. We've just completed a new hangar that can hold two BBJs at the same time. We're halfway through converting a hangar to additional TOP LEFT: A flawless service at border control is a key element of Signature's business according to Mark Johnstone.

ABOVE AND BELOW: Signature Select is available in many countries and opportunities exist to co-brand across the region.



"And Luton will have segregation facilities to adapt to the cultural differences – if Saudi families fly separately, we will have the capability to deliver the service they want, in the manner that they require," he explains.

As for other top destinations where Signature sees significant Middle Eastern traffic: "Hong Kong is starting to see more traffic, low numbers, but typically large aircraft. In the US it's typically Houston, New York, Washington DC, Florida and the Rockies for skiing," he says.



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IFFLIN-SCHMID DESIGN

Getting the big picture

Completions centres around the world are full with wide-body aircraft being prepared for the VVIP market. **Alan Peaford** takes a look at the latest position.

he first of nine Boeing BBJ747-8 head-of-state aircraft is nearing delivery. Across the globe, the specialist completion houses are busy putting the final touches to the projects that utilise the blank canvas of the giant airframe.

Kuwait, Qatar and the UAE have all ordered wide-bodies for their royal fleets, while other high-net-worth individuals have also identified aircraft, such as the Boeing 787 or the A330, as their business jet of choice. The first aircraft to be handed over is likely to come from Basle, where AMAC Aerospace is very close to completing the BBJ747-8.

The Swiss completions and maintenance house has been building a fourth hangar at its Basle base to cope with what chairman, Kadri Muhiddin, described as a "growing pipeline of interior conversions" on the large VIP aircraft.

Two years ago it opened its third hangar – a 8,400sqm (90,000sqft) space able to cope with two wide-body aircraft. It was immediately put to use with the 747-8 for a Middle Eastern customer. The interior includes the Aeroloft, developed by Greenpoint Technologies, which adds 325sqft of additional rest or recreational area with eight private sleeping berths in the aft, upper section of the aircraft.

At Lufthansa Technik, in Hamburg, work is progressing simultaneously on two 747-8s. The German company is hoping that the first could be delivered by the end of 2014, or very early 2015, with the second superjumbo following soon afterwards.

A spokesman for Lufthansa Technik said "We are not rushing to be the first, it is about doing it right." At the NBAA Convention in Orlando, Florida in October, Lufthansa Technik had a giant scaled model showing the spectacular interior of one of the 747s. Another centre to be doubling up is Texas-based L-3 Platform Integration, which is hard at work on two 747-8s, each for a different head-of-state. The first arrived in November 2012 and the second just a month later.

Customer delivery of both is anticipated before the end of 2014. The Dubai



Aerospace Enterprise (DAE) subsidiary, Associated Air Center (AAC), based in Dallas, also has a 747-8 in the works and the company said it is hoping for a customer delivery before the end of 2015.

AAC has also just begun work on a BBJ787, one of 14 of the type ordered from Boeing Business Jets. Monuments and furnishings for the interior configuration have already been completed ahead of the green aircraft's arrival and will be ready for installation once the supporting structure, wiring, plumbing and sound insulation have been installed. Interior design is being conducted by the in-house design team.

"The composite structure and advanced systems on the 787 require special engineering, tooling and technical capabilities – it's a whole new ball game," said AAC's president James Colleary. AAC plans the redelivery of the completed aircraft by the end of 2015.

Recently re-branded GDC Technics (formerly Gore), the San Antonio-based facility owned by a Saudi Arabia consortia headed by Mohammed Al Zeer, is already hard at work completing two 787s simultaneously, both being outfitted as headof-state aircraft. Greenpoint Technologies received its first 787 earlier this year and a second is expected in 2015.

The order book for VVIP Airbus ACJ350 XWBs rests at one aircraft. Al Zeer's MAZ Aviation cancelled orders for six of the type. Other Airbus wide-bodies have ABOVE: A VVIP A330 has been delivered to a Middle East customer from DAE subsidiary Associated Air Center.

BELOW: Lufthansa Technik shows off a model of how a B747-8 can look in head of state configuration. also been taking space in the completions hangars.

AAC delivered its first green Airbus A330-200 VVIP wide-body aircraft to a Middle East-based customer in September. The project included a full cabin (nose-totail) customisation, equipped with highspeed data, high-definition in-flight entertainment (IFE), a comprehensive sound insulation package, stand-up shower, full cooking and food preparation, forward and aft galleys and complete interior zonal drier and humidification system.

"The A330-200was a very large and complex completion programme," said Colleary. "As part of the process, we added staff and expanded our current facilities to accommodate this and future wide-bodies. There were many engineering challenges and customer revisions throughout the process but our employees delivered and we have returned a safe and beautiful aircraft to a very happy customer."





AMAC sprints to become world leader in maintenance and completions

AMAC's Middle East credentials have stood it in good stead as it develops a stream of customers from the region for its aircraft completions, has developed MRO capabilities in Turkey and now has licence to offer an exciting new jet to the region. **Dave Calderwood** takes a visit to the company.

t's been a fast 'n furious seven years for AMAC Aerospace, based at Basel-Mulhouse EuroAirport on the Swiss-French border. The engineering business started in 2008 with a single narrow body hangar to carry out completions on new aircraft, refurbishments on older jets and maintenance on all.

Since then, they've built another two hangars to handle wide body jets up to the size of an Airbus A380, broken ground on a fourth wide body hangar due to be completed in 2015, started a satellite maintenance operation in Istanbul, Turkey, become an agent for Pilatus PC-12 NG and PC24 aircraft, and launched an aircraft charter business out of Zurich.

Phew! If that wasn't enough, slots for completions are fully booked through 2015 and well into 2016, 16 aircraft are under full management including private charter, and 22 aircraft are under AMAC's Part 145 CAMO umbrella. The company is growing at the rate of employing two new engineers a month and is currently at 672 staff, mostly engineers, employed at the Basel site.

Once the fourth hangar is complete and in operation, it may be time for a breather... somehow, it seems unlikely given the ambition and abilities of everyone who works there. AMAC Aerospace has become the largest privately owned completion centre in the world in a very short time.



OPPOSITE: AMAC has become the largest privately owned completion centre in the world with impressive designs and standards.

ABOVE: The hangars are optimised to improve workflow. On the day of our visit to AMAC's hangars and workshops in mid-November, all three of the operational hangers were busy. One of the wide body hangars had no fewer than seven aircraft being worked on, while the other was dominated by the impressive sight of a brand new Boeing 747-8i being fitted out as a private 'Head of State' jet. With its canted winglets, revised engine cowlings and longer 'hump', this will be the world's first 747-8 'Intercontinental' completed as a BBJ when it's delivered at the end of this year - "on time and on budget", a point emphasised by AMAC's Chief Operating Officer Bernd Schramm.

Yet this is a business that very nearly didn't happen. The four founders, former employees of Jet Aviation also based at Basel Airport, started to talk about starting their own maintenance and completions business in 2007 shortly after Jet Aviation changed ownership. They quickly worked up the plan and found the finance to go ahead with building the first hangar, opening in February 2008 – just months before the worldwide economic crash. "If we'd been six months later, AMAC Aerospace wouldn't have happened," admits Mauro Grossi, Chief Financial Officer of AMAC, one of the four alongside Bernd Schramm, Kadri Muhiddin and Heinz Köhli (now retired).

Even given that early bit of luck in timing, AMAC's growth has been impressive. Bernd Schramm puts this down to the experience of the management - many with 20 or 30 years plus - and the skill of the workforce, many of whom have also been in the business for many years. CEO Kadri Muhiddin is a legend in the business with vast experience in aircraft and engine heavy maintenance, overhaul and modification going back 40 years. He's Chairman of the Board for other aviation ventures and his industry insights, powerful network of associations and knowledge of the technical, financial, commercial and legal requirements have proved invaluable.

Of course it helps that there's a local pool of experience around Basel. They range from knowledgeable engineers across all disciplines – airframe, powerplant, electronics and avionics, design and production – to talented cabinetry and upholstery workers.

Almost everything AMAC needs during a completion or refurb is available on site, including a paint shop for smaller items. Whole aircraft are outsourced to specialists (who also need to be Part 145 approved because of changes to the aircraft's weight & balance when the paint is applied).

The hangars' architecture is impressive both inside and out, huge arches of wood spanning the enormous roofs. Apparently China was buying up the world's steel at the time of the first hangar and the architects suggested wood as a better, less expensive and more environmental alternative.

The hangars don't just look great - they are optimised to improve work flows. Cabinetry designers, for instance, have a short walk to go and physically inspect the aircraft and check, say, mounting points, which helps speed up the process and help accuracy to boot.

Despite AMAC's rapid growth and size, it still retains a small company atmosphere. When the new wiring loom for the BBJ 747-8i was ready, weighing 2.8 tonnes, a small army of 50 people was rustled up to carry it from the Electro Completion Shop to the aircraft. It's AMAC's policy with wiring to remove the old loom and work on it outside the aircraft, adding new wiring where necessary. This means the fuselage is free from electricians and loose wires while the sheet metal and cabinetry engineers are fitting out the cabin.

Managing all these processes is a vitally important task. "The key to a successful completion is the sequencing of the various parts of the project," said Waleed Muhiddin, Vice President Strategic Operations & Business Development at ABOVE: AMAC has a team of talented cabinetry and upholstery workers.

BELOW: The inside view of AMAC's widebody work.

AMAC. "We have two wide body aircraft completions going on in parallel and we have to stagger the phases."

As well as the BBJ 747–8i nearing completion, there's also an A319 which arrived as a new 'green' aircraft from Airbus. It's being fitted out for a Chinese client with a light and airy, bespoke design. AMAC created a section of the cabin as a mockup for the client to approve the design before starting.

With aircraft being in the completions hangar for long periods, there are maintenance issues to be handled. For instance, there have been 130 Special Bulletins for the 747-8i during its 2-year stay in the hangar which need to be complied with. Aircraft are on special jacks - very impressive – so that undercarriage can be "swung" according to approved schedules. None of this is a problem for AMAC thanks to its maintenance abilities.

AMAC is keen to promote the maintenance side of its business. "We're not just completions," says Bernd Schramm. "Maintenance is just as important to us." Occasionally VIP aircraft will arrive at



AMAC having been to airliner-orientated MROs for maintenance with damage to cabinetry. "They are not used to VIP aircraft and damage the cabinets when removing them to gain access for maintenance," said Bernd. The point is, private VIP and VVIP aircraft need specialists such as AMAC to do the job properly.

Airliners are unlikely to have special fittings such as showers and dishwashers, two items AMAC has developed expertise in fitting. Both offer challenges, particularly in managing the high flows of water in and out, and of course, the installation has to meet certification standards.

AMAC has its own design department, which encompasses both the look of an interior and materials used as well as design to meet aircraft standards and regulations. A good example of this can be seen in a 2001 Global Express which has been through a nose to tail \$2 million refurbishment with AMAC.

"Everything you can see has been designed and replaced in-house by us," said Waleed Muhidden. The finished aircraft can be seen in the static display at this year's MEBA. The cockpit has been updated with latest avionics to meet current and expected navigation regs, the cabin completely refitted with carpet, tables, cabinets to a distinctive "red stripe" design carried through to the paint scheme. The aircraft is now for sale by its owner.

The attention to detail by AMAC is extraordinary. A selection of hardwoods from South America were selected for the 747-8i with complete trees being imported to make sure colours and grains matched. The 1mm thick veneer created from the woods is cut in-house and applied to a lightweight and certified honeycomb board to create the cabinetry. AMAC uses a natural drying process for the varnishing applied to the veneers, unlike the forced drying used by some completion centres which AMAC believes can induce cracking, if not immediately then further down the line.

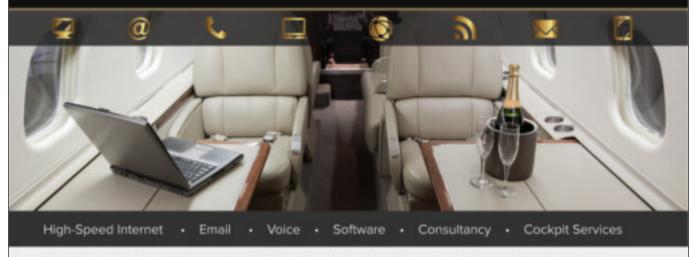
So what's the future hold for AMAC?

"Once Hanger 4 is built, we will have reached a critical size," said CFO Mauro Grossi, "and we will have a balance between maintenance and completions."

There appears to be no shortage of work ahead, with the market for "green" wide body aircraft completions growing, with subsequent maintenance required as well. Of course, when the aircraft are in for maintenance, the client will probably need to charter a replacement aircraft to cover the downtime so that side of the business has a future too. AMAC Aerospace has squared the circle.



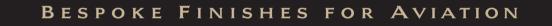


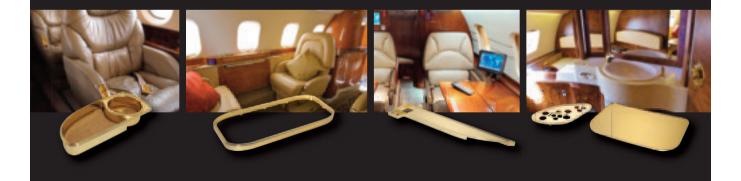


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The Da Vinci code

Once you have bought an aircraft, giving it that personal touch can be more than skin deep. Liz Moscrop celebrates the renaissance of art in the air.

ainting is concerned with all the ten attributes of sight; which are: darkness, light, solidity and colour, form and position, distance and propinquity, motion and rest. Who am I to argue with the genius of that great Italian polymath, Leonardo di ser Piero da Vinci?

Given the above premise, painters who choose metal that moves in three planes as their backdrops are truly pushing their artistic talents to the hilt. Not only do they need to work with different light outdoors, but they also have to account for atmosphere, altitude and angles. Da Vinci would have approved. He famously said: "I have always felt it is my destiny to build a machine that would allow man to fly," and several of his most flamboyant sketches depict just that.

French designer Didier Wolff of Happy Design Studio uses aircraft as his moving

Didier Wolff is Happy with the preparation.

aviation community several years ago, but really hit the world stage in 2011 when he created unique livery for a Dassault Rafale fighter jet. The artwork on the tail showed the character "Le Petit Prince" created by French author Antoine de Saint Exupéry, who served in the French Army at Base 113 at Saint Dizier, home to the largest number of Dassault Rafales in France. The paintwork celebrated 30,000 cumulative hours of Rafales flying from the base. He said: "It was a great honour to be asked to create a design for the Rafale, especially as it is for such a prestigious occasion." Other high profile military aircraft in his portfolio include the 1/12 Cambresis Squadron's Mirage 2000C, which he painted for the 50th Anniversary of the NATO Tiger Association.

canvases. He came to the attention of the

He constantly thinks in three dimensions and explained: "It is very important to imagine the aircraft in flight." Another star of his aerial showcase is his decoration of a Bombardier Global 5000, for which he has won several awards. The design was born from a bread plate. A man loved the symmetry and colours of a pattern of squares on a plate he owned and wanted to translate its essence onto his aircraft. Since a fuselage is a living entity for Wolff, he always pictures the shape it traces traversing the sky. After creating the piece, he spent several intense weeks at a paintshop in the tiny window of time allocated to the project, supervising a team of skilled painters, who applied each line by hand.

Wolff is a familiar name in the Gulf, thanks to his work for Maximus Air Cargo, as well as other striking projects. He now has two new airliner schemes underway, one of which is for an undisclosed Middle Eastern client. The joy of this for the rest of us is that when the project finishes, it will live on, gracing the sky and tarmac all over the world. A thing of beauty for many to enjoy.

Completions

While Wolff has his heart in the clouds, one of the world's most successful livery designers takes the opposite stance. Pilot and painter South African Craig Barnett's feet are planted firmly on the ground at the point before take-off. He visualises the aircraft in all phases of flight, and said: "Most owners see their aircraft on the ground, so the design has to work for that configuration." Indeed, often people choose to put a line along the fuselage, and may make the mistake of angling that up, as if the aircraft were climbing, which looks odd on the ground, particularly in smaller tricycle gear types.

DaVinci once said: "It had long since come to my attention that people of accomplishment rarely sat back and let things happen to them. They went out and happened to things." For both Wolff and Barnett this is the truth. Wolff always wanted to paint aircraft, and worked for several years as a photographer and teacher in Paris. He taught children with autism, which he reckons still inspires him in his work today. He said: "When I spoke with them I realised they had no filter between their thoughts and words, and did not judge themselves. They taught me a lot about creativity." He was so driven to realise his dream that he sold his home in 2009 to invest in his own company."I am my own business angel," he smiled.

Barnett founded Scheme Designers almost two decades ago, after creating a design for his own aircraft, which was so technically brilliant that the paint shop he took it to asked him to work with its software to replicate the idea. One airframe led to another and today his company has developed more than 11,000 paint schemes. He has always been fascinated by aviation. As a child, he helped his father restore a World War II Spitfire IX to flying condition. He earned his pilot's license at 17 and moved to the US in 1985, where he became an instrument rated commercial pilot.

It would seem getting underneath the skin of an object is vital to realising its form in paint. Da Vinci was all over musculature and spent many happy hours dissecting corpses at his local hospital in order to appreciate fully the human body as he portrayed it in paint. There is something, too, in delving underneath the surface that appeals to both designers. Speaking after he'd been shortlisted for the International Yacht and Aviation Design Awards earlier this year, Wolff told the Design Society the way he works is: "to forget all initial briefings and work from instinct. The aircraft as an object speaks by itself; it sets its own movements and strength, like muscles wrapping a body. These essential criteria will give a natural birth to the design, and only after that first deep set of work do I go back to the initial specifications, not before."

The designers work on projects big or small - it is true three dimensional art on a canvas as large as an Airbus or a small as a Chipmonk. Barnett, too, can see life within the metal form. His designs range from aggressive sharks and leaping dolphins to regular stripes – in fact anything that an owner cares to choose. He mused: "An aircraft's paint scheme is the most emotional and visible part. To engineer the perfect look, a designer has to have a visceral understanding of what brings out the beauty of each individual aircraft."

Da Vinci would have approved. He said: "Where the spirit does not work with the hand, there is no art."This is another part of the artists' skill. Both say that often clients do not really know what they want. Part of their expertise is to tease that out. Wolff explained: "I usually get a phone call from the owner. When we speak together I start to feel good about the collaboration. The result comes alive on the aircraft – you can't just adapt one livery across a fleet of different types – you have to look at each one."

The two men would agree on this one. Embry-Riddle Aeronautical University commissioned Scheme Designers to create new livery for its 38 new Cessnas and Pipers, adapted to each type. They put several schemes to several thousand students and alumni, who chose their favourite. "The paint scheme of a fleet of aircraft, be it in the flight training arena, or in airline or corporate operations, sets the personality for the entire organisation," said Barnett. "Embry-Riddle's new theme evokes the feeling of fluid motion and soaring flight. The scheme reinforces the University's reputation for excellence, reliability, and quality."

Scheme Designers charges a flat fee and prepares a range of initial design concepts based on a client's input. However, the designers won't stop until the customer is satisfied. They have worked with many Middle East clients, both on large projects and small for princes who are fascinated with all things aeronautical. Barnett said: "When I'm dealing with someone who is mad about aviation, we just connect on that level."

And connection is ultimately what it's all about. Da Vinci also famously said, "Realise that everything connects to everything else." And in this case the invisible force that bonds the artists – and I'd suggest most of you reading this tale – together is the magic of flight. It has hooked both Wolff and Barnett to the point they have given their lives to expressing it in three-dimensional works of art. I'll leave the last word to the genius himself. "Once you have tasted flight you will walk the earth with your eyes turned skywards, for there you have been and there you will long to return."



A Convenient Flag – Not A Flag of Convenience

We hear a lot about registries for business aircraft from the region but what does this mean and what are the options facing owners and operators? **Mark Byrne** reports.

Il aircraft have to be registered somewhere if they are going to fly. Depending upon where your aircraft is to be based you may have a choice of where it can be registered. Given that you have that choice, how do you choose the best register for your requirements? If you choose to finance your aircraft, your financier will also have an opinion on the matter.

Let's start with the basics. What is a registration for? As noted above, a prerequisite of being able to fly your airplane is that it is on a register recognised by ICAO (International Civil Aviation Organisation, a Montreal-based agency of the United Nations). As aircraft are valuable assets, owners want a register that will reliably record the name of the registrant and will not de-register or transfer the registration unless a strict and known process is followed. Having registered the aircraft, the owner will then want the registry to provide them with a high level of service and low levels of bureaucracy. They will want to avoid unnecessary bureaucracy all together.

If they finance their aircraft, and many do because they can make their money work harder doing other things, then the financier will also have an interest in which jurisdiction an aircraft is registered. Above all, financiers are interested in security and certainty. They need to know that there is a reliable mortgage register that will accurately record their security and that their interests will be observed and strictly applied by the Registry. More generally, they will want to feel comfortable that the rule of law is reliably enforced in the jurisdiction and that judicial processes are both reliable and accessible. They will also consider how



M-registered aircraft are popular all over the world as this Russianbased Global 5000 demonstrates

Picture by Phil Pain.

effectively or otherwise the legal environment gives protection to creditors' interests.

In the Middle East and Africa, national

aircraft registries tend to orientate themselves towards servicing their airline sectors, leaving business jet owners feeling somewhat neglected, with a lack of attention to their distinct needs. Financiers will also be reluctant to rely on jurisdictions with which they are not familiar. For these reasons, owner and operators will often look to the "offshore" registries, and particular those that have established themselves with the sole intention of providing a safe and reliable home for business jets.

Until recently there were only a handful of jurisdictions that were used to register aircraft for owners who lived elsewhere. Perhaps the most popular jurisdiction, although it seems strange to describe it as offshore, is the USA's "N" registry. Historically, the US was a popular jurisdiction because, if aircraft were second hand, the chances were that they came from the world's biggest business aircraft market, the US. Consequently, a buyer of a US registered aircraft would need to do nothing more than create a US "owner trust" in which to register the aircraft. As the majority of the world's business jet pilots were trained in the US, it was also easy for them to get a type rating for the "N" registered aircraft. Consequently, until recently at least, "N" registered aircraft would have been ubiquitous at airports across the Middle East and Africa. However, there are snags associated with the US Register. Firstly, non-US citizens are not allowed to own a US registered aircraft, which is why it is necessary to create a US owner trust This means that the "real" owner of the aircraft is not actually the "legal" owner from a US legal perspective. Some owners would have an issue with this, although it might not bother most financiers, who would most likely be comfortable with security placed on a US asset. There are also some service issues with the FAA, which is not always as flexible as an owner would want it to be. not least with its limited opening hours which are fixed.

Purchase

Other jurisdictions have traditionally offered a safe haven for aircraft owners and financiers alike, including the Cayman Islands (with the suffix VP-C) and Bermuda (VP-B). Aruba (P4-), has also been a popular registry. However, one of the newest, the Isle of Man's "M" register, has been the most successful and has eclipsed the older registries. The reason for this is that it has managed to combine a set of attractive characteristics that appeal to owners and financier alike. So what is so appealing about the Isle of Man's register that has attracted so many aircraft?

The starting point of the Register was unique in that it was specifically designed with professionally flown modern business aircraft in mind. Except in special circumstances, aircraft must have a maximum take-off weight of 5,700 kg or more to be eligible for registration. Furthermore, aircraft may not be operated under an AOC and so no public transport is permitted on an Isle of Man aircraft. Aside from these two restrictions, the aircraft register was designed to be as flexible as possible from the perspective of the owner or operator of the aircraft. A notable feature is that the Isle of Man will recognise the standards of any reputable ICAO country. This means that if you have an aircraft that is built and maintained to US specifications, it will be accepted onto the register. Similarly, if an aircraft is built to EASA standards then it will also be accepted. The same is true for Canada, Brazil, and almost any other commonly specified standard. This gives greater flexibility to the owner, who does not have to make expensive modifications to the aircraft to meet the Isle of Man's (or Manx) standards. This same flexibility extends to pilots. This means that the potential pilot pool for any given model of business jet is opened up to most likely every pilot on the planet, who is type rated for that particular aircraft.

In addition to this flexibility, the Register was determined to provide a business-like service for its business aircraft owners. In practise this means that telephone calls are always answered, paperwork is turned around on the same day, and aircraft are registered and serviced to meet the owner's schedule rather than the other way round. It also helps that by arrangement, the Registry will stay open to facilitate aircraft sales or purchasers regardless of the time of day or night. It also provides a mortgage register that is modelled on British law and the legal environment is both reliable and predictable, giving strong creditor protection. These characteristics are particularly prized by financiers who have surety that their security can be enforced. It also helps that the registry has an attractive suffix (M) that does not carry any political baggage while at the same time giving the impression of prestige. Lastly, it is important that there is a credible

ABOVE: Mark Byrne confident the Mregistration is without political baggage and gives the impression of prestine

BELOW RIGHT: Simon Williams, the new director of civil aviation on the Isle of Man enthusiastic about the Register's capabilities. Registry ethos that understands how to balance the requirements of competent regulation with service excellence. As at 18 November 2014 745 aircraft had been registered in the Isle of Man. This is a very impressive number if you take into account that the Register was only established in 2007. According to European Business Air News, of the 891 long range large business aircraft registered in Europe, 136 are registered in the Isle of Man. The Isle of



Man appointed a new DCA last month by the name of Simon Williams. As with previous holders of this office, Simon is a consummate professional (his cv includes search and rescue helicopter pilot, 757 and 767 pilot as well as a regulator at the CAA) who the Registry's customers will enjoy dealing with for his enthusiasm, knowledge and good sense.

In conclusion, what should African and Middle Eastern business aircraft owners consider when looking for a home registry for their aircraft? It is a given that the state of registry has to be compatible with the rules and regulations of the jurisdiction in which the aircraft is going to be based, and where the aircraft is expected to fly. Then, and above all, owners should consider the registry's safety regime and the security of title offered. After these two crucial considerations come service, flexibility and reputation. Get all of these factors right and your chosen registry should allow you to fly with the minimum of bureaucratic fuss whilst giving you the regulatory oversight and security you need.



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Off the charts

Trip support providers do so much more than suggest flight paths from A to B. Liz Moscrop checks out the X factor.

dmirers called him the 'Shooting Star' because of his fearless skill navigating the seas in the 15th century. Had the celebrated Arab sailor, Ahmad Ibn Majid, been born today, he would surely have been fascinated by the work of trip support companies, which help individuals and companies plan international flights all over the globe.

There are many similarities between his work and theirs. Ibn Majid gained fame in the west as the guide who helped Portuguese explorer Vasco da Gama find his way from Africa to India. He was also the author of nearly 40 works of poetry and prose describing the basic principles of navigation.

Among other topics, he covered rhumb lines, the locations of ports from east Africa to Indonesia, as well as accounts of the monsoon and other seasonal winds. Universal Aviation and Weather's Drew Barnes says experience of your destination is vital for trip advisors. Understanding weather and finding safe ports are as vital in aeronautical planning today as they were for seafarers all those centuries ago. Today's libraries are contained in the clouds, and constantly updated with topical data on weather, traffic and destination airfields.

However, without a grasp of what this means, such data is useless. Most trip support providers employ pilots, engineers and other aviation professionals, who help decipher relevant information for their customers. The Middle East has several such home-grown companies – Hadid, Jetex and UAS, for example. There are also long-established providers, such as Skyplan, Rockwell Collins (via its Ascend division) and Universal Weather and Aviation to offer counsel. Wise corporate aviators lean heavily on them for help with planning.

Often there is a maze of bureaucracy to work through when entering a country,

depending on entry rules, the origin of the flight and the nationality of the passengers. What tends to happen is trip support providers hire their own Ibn Majids in the form of country managers, who work alongside local ground handlers to enhance operational safety, minimise language and cultural barriers, and coordinate credit for aviation fuel and services.

The famous explorer would doubtless have loved the wealth of data available to today's travellers in the form of tiny downloadable apps that pilots and operators can store on smartphones, eliminating hours of research and making the sky a safer place.

Dubai-headquartered UAS offers its customers what it calls its "TMS" service via a free app. Clients receive a unique username and password to use the system, which gives them real-time access to all their past and current requests. Instead of having to make separate phone calls or

Focus

e-mails to different teams for elements like permits, fuel or flight itineraries, customers can use TMS to receive the same level of information as UAS' in-house staff.

Executive President Mohammed Husary said: "It's like having a full operations team right in your phone. We learned that the majority of our clients are technology enthusiasts, who highly value on-demand access and mobility."

Meanwhile, fellow UAE company Jetex Flight Support has a presence in Europe, Asia, the Middle East and Africa, with fixed base operations (FBOs) in Paris, Dubai and Shannon, and operations centres in Kiev, Beijing, Dubai, Paris, and Shannon, plus a supervisory network spread across Africa.

Its offerings include an app that allows clients to access fuel pricing at thousands of airports worldwide, request fuel uplifts, get status updates and have live chats with the Jetex operations team 24 hours a day. The firm has also collaborated with Honeywell on a trip planning application that gives its clients access to Honeywell GDC flight support services on the move.

Canada's Skyplan, too, has a presence in Dubai. The company offers dispatch services to both commercial and corporate carriers via flight planning, weather and notice to airmen (NOTAM) data from six independent sources, including a direct inhouse satellite feed. A spokesman said: "We can provide affordable and stress-free flight planning. Whether it's through our certified dispatchers, or remote access to our system via the internet."

The firm offers plans, including the most effective dynamic random route or a fixed route on multiple cruise modes: Mach, long-range, engine out, and special modes. It also looks at altitude control, as well as alternate landing sites, fuel uplift requirements and flexible flight plans.

The spokesman continued: "You should be aware that a number of countries require over-flight or landing approval prior to entering their airspace or operating into a specific airport. Governments track aircraft traversing their country and also charge navigational and landing fees."

On that note, it's worth pointing out that the Middle East is generally fairly easy to enter, especially the most popular destination Dubai, but it is also worth knowing where to fly and how long it will take to reach your destination once on the ground, since the Emirate can be very congested. Drew Barnes, master trip owner for Universal explained: "Dubai International is offering slots, but often these differ widely from people's desired schedules."

Colleague Hassan Hilliard elaborated: "There are three major airports to choose Celebrated Arab sailor Ahmad Ibn Majid's work led the way for today's flight support businesses. from: Al Maktoum International, Dubai International, and Sharjah. Al Maktoum is a great option, and approximately a 25minute drive to the Jumeirah hotel area. Arrival and departure airport slots are required, but there are usually no issues with availability. This location does not experience delays with landing and holding times, whereas delays at Dubai International may be up to 45 minutes."

He added: "Sharjah is another good option. It is approximately a 30-minute drive to the Dubai financial district and 35 minutes to the Jumeirah hotel district and Palm. Airport slots are not required, and ample aircraft parking is available."

Ibn Majid described the ports he visited for his readers. Today, too, it is vital to understand that different cultural requirements come into play when entering a country. In Saudi Arabia, for example, it is important that a sponsor meets female visitors. They must also wear an Abaya, and any alcohol should be locked up when landing.

Saudi Arabia also requires both visas and sponsor letters for many nationalities. Most other countries in the region want to know in advance the purpose of a visit, plus any contact information.

The Qatar Civil Aviation Authority requires business contact information prior to approving a permit. It's always best practice to secure required visas in advance. While Saudi Arabia will issue 72-hour crew visas on arrival, this can be restrictive. For example, if a crew member obtains a visa on arrival and stays beyond the approved 72 hours, he or she may be detained. US operators should also be aware that there are Federal Aviation Authority (FAA) sanctions in place preventing US-registered aircraft from over-flying or landing in Iraq and Syria until the end of 2014. The ban applies to all US air carriers, commercial operators and pilots, as well as operators of aircraft registered in the US.

The European Aviation Safety Agency (EASA), too, has issued a safety information bulletin that advises operators planning flights in the region to "exercise caution". However, Nick Klenske writes on the Jetex blog: "Despite what you read in the headlines, business goes on in Baghdad." He points out that, although some regional commercial carriers are avoiding the conflict zones – Emirates and Kuwait Airways have rerouted flights for instance – the majority of local airlines continue to operate there. He writes that Jetex ground handlers are reporting that flights continue to fly without incident.

Travellers must make up their own minds. UAW's Barnes suggested: "The best advice I can give is to contact your service provider and find someone who has been to the places you're going to. Talk pilot to pilot or operator to operator about the requirements and what are the hiccups you might encounter. You will get specific and useful information that way."

Some say that Ibn Majid's true legacy was the substantial body of writing on sailing that he left behind, addressing celestial navigation, weather patterns and charts of dangerous areas. Today's cartography comes from the cloud rather than the stars, but the spirit of adventure, coupled with the need for a skilled navigator are still a match made in heaven.



Management of Change....Taking a Closer Look

Validating your organisation's efforts to assure safety and operational integrity is a key element of maintaining a safe operation writes **Louis Sorrentino** and **Mike Smith** from Aviation & Marine Safety Solutions International.

he identification and management of hazards affecting the integrity of your operation is a fundamental objective of all flight departments or organisations working within a risk based environment. Within aviation, more and more operators are coming to the conclusion, and rightly so, that mere regulatory compliance is not an assurance for operational integrity and safety. The regulations are the lowest common denominator to assure regulatory compliance to standards designed to provide a foundation for operational stability and attention to some of the most basic, fundamental risks within aviation. While regulatory standards do portend to address some risk within aviation, there are too many moving parts, to many variables, too many behaviors too warrant a onesize-fits-all solution for managing risk and assuring safety. Additionally, enhancements to regulations often move slowly as the dynamic environment of aviation uncovers systemic weaknesses as a result of accident investigation and exhaustive root cause analysis.

Emerging technologies present a special challenge for regulators as businesses keen to embrace the operational and economic benefit that new technologies promise are constantly pushing the regulatory envelope with their introduction. Regulators face the impact of acquiring the understanding of new technologies, developing the resources to contemplate regulatory needs and then the often lengthy rule change mechanisms that aviation authorities are bound by. The regulator is thus not well positioned to be the sole source of safety assurance with the introduction of new technologies.

Change is needed and must be accepted by all.



Managing risk and identifying hazards is more than just regulatory compliance.

on those risks that are contributory to the overall performance of the flight department. The regulations provide a prescriptive regulatory standard and most operators will easily demonstrate compliance. Like checklists, which we expect every pilot or mechanic to follow, organisational and individual cultures and behaviors may alter commonly held expectation. And many of the most basic occupational safety and health requirements are ignored due to a lack of attention by the regulator "until' there is a problem or event requiring their attention.

Yes most operators have the basics down

addressing the obvious risks, but fall short

So, some basic questions:

- When was the last time your organisation performed an independent operational assessment (not audit) of your flight department?
- When was the last time an independent evaluation was conducted of your pilots and flight crew, mechanics and ground staff, observing what they do every day, on their home turf?

- For those that have a Safety Management System (SMS), when was the last time your SMS was evaluated by an independent external third party?
- Do you have a management of change programme or process?
- When was the last time you performed an actual occupational safety and health assessment of your workplace and work environment (yes, en route and away from base) to validate not only regulatory compliance but also to address present but unreported hazards and risks and emerging potential risks?

I would venture to say, based on experience, that most corporate business and charter organisations within the region "believe" their programmes address these questions, but few can provide the 'independent' assessment to validate their perceptions.

One of the contributing factors to this lack of *situational awareness* is our industry's over-reliance on the seemingly obvious partitions within various regulatory frameworks that govern aviation. The typical organisation addresses this by having the flight department focus mainly on the regulations affecting flight operations, while either Facilities, Human Resources (HR) or a true EH&S department or outside party focuses on ground hazards and risk or Occupational safety & health (and environment).

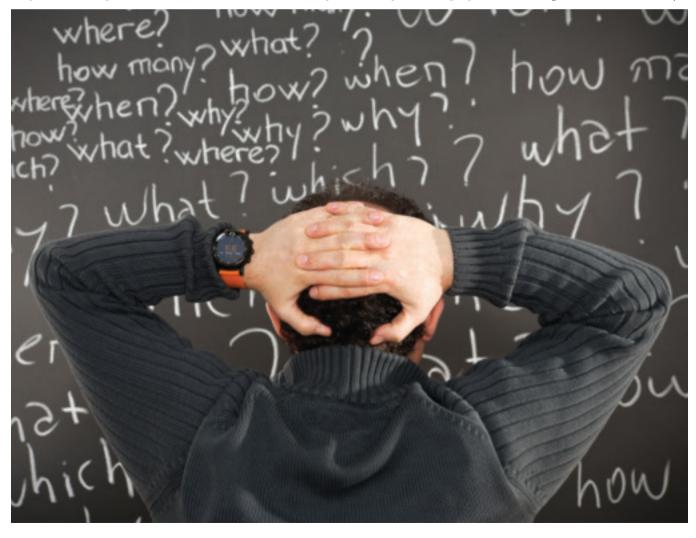
More times than not, many of these internal evaluations are, once again, based on the prescriptive requirements, and not at the actual dynamic environment and behaviours that is aviation. Many organisations merely follow the same checklist time and time again, building in complacency, rather than building checklists on historical experience and emerging trends. And this is all because of a deficiency in awareness to the dynamic environment of aviation – we are very good at being reactive, and even proactive when we see something happening to someone else. But what about predictive?

What is needed is a holistic approach to managing operational safety and integrity. From the organisation's stated and practiced goals and objectives; to regulatory compliance; to assessing known and Independent audits can help answer the questions and can identify potential weaknesses. potential hazards and resultant risk within the expanse of organisational operations; merely relying on the prescriptive standards is not enough.

Many corporate or charter operators don't see the obvious value of having a third party or external standards (IS-BAO for example) audit performed on a routine basis. Why? Well, that is a good question. Why wouldn't you want to know if standards and policies are not being followed, or if conditions within the workplace present hazards and risks that are not typical to the generalist inspection? Experience has shown that these independent external audits and reviews identify potential weaknesses or, put more simplistically, opportunities to enhance operational safety and performance. Look, believing in the quality of your flight department and support services is a good thing, but relying on that 'belief' without objective evidence, can be a mistake with consequences.

On a recent SMS development exercise for a large operator, we were able to encourage the organisation to perform a comprehensive risk profile, looking at past and potential accidents, incidents, injuries, near misses and conditions that would impact the operator's business. Once the data was collected and analyzed, it became apparent that the operator was missing a large number of contributing factors and conditions that impact on its overall performance, from inconsistent corporate guidance, to incomplete SOPs, to an overreliance on "this is the way we have done it for years". The organisation was provided with the much needed insight into why it performs the way it does, and a roadmap to change the way it communicates, encourages feedback and insight, and demonstrates regulatory compliance.

Routinely performing independent assessments, evaluations, diagnostics and even performance-based audits will help raise the level of organisational awareness and attention to the details. This raising of awareness, if done properly, will enable the organisation to communicate what is important, going beyond the regulations, so that every employee understands the shortcuts and not following SOPs are not welcomed, and reporting of incidents and potential incidents or near misses, should be encouraged so we can learn and analyze





what impact these conditions may have on our operation's ability to perform and perform safely.

Communication is the essence of the safety management system and something every operator should hold as a fundamental objective in its day-to-day operation. A universal characteristic of highly safe organisations is a reporting culture that extends to open discussion and dialogue across all levels of the enterprise. Even these organisations can benefit by involving a third party who will often elicit some very candid opinions from within the organisation that otherwise are not expressed.

A compelling reason for engaging external help in introducing a change to your organisation is our people. By its nature aviation attracts people who are naturally risk-averse and in this context, changeaverse. This is a good thing! We want pilots, mechanics, dispatchers and air traffic controllers who are risk-averse and who like to follow SOPs, to use checklists and to perform their duties in a predictably consistent fashion. These same people are the ones from who we draw our management teams, our directors of operations, directors of maintenance and our safety managers, all of whom will be expected to make significant contributions whenever a change is contemplated.

The key to effective implementation is engagement and communication. Many people in the organisation will want the benefits of the change, but will need to be given a high level of confidence or reassurance that the benefits will outweigh the costs. This is why communication is such a fundamental component of an organisation's Safety Management System and to inform that communication, hazard identification and the development of a risk profile are important elements.

Change management requires a unique set of skills is that are unlikely to be the strong

points of an aviation business's management team. Even in an organisation with a mature Safety Management System, it is probable that the development of a safety risk profile for any specific change will be biased by the paradigm within which the organisation's people operate. The concern here is that some risks are given an undeserved high score while others are all but ignored and this leads to an inefficient and perhaps even an unsafe allocation of mitigation strategies and resources.

From these observations there arise two logical points in the change management process that an external evaluation can provide added value.

Firstly, when developing the risk profile for a specific change, such as, for example, a new aircraft type, new airport, new approach, new ground support equipment (GSE), or amended process for evaluating a new external vendor, a third party can provide a fresh perspective on that change and its attendant risks and can validate the assumptions that drive the risk assessment process.

Secondly, and equally importantly, when conducting a post-implementation review of the specific change or new process, an outside view of the change can help uncover any unintended consequences that might otherwise go un-noticed by those close to the implementation process.

When deciding to engage a third party to perform an external evaluation of your change management plans, it's important to consider the experience of that third party with change. Many auditors in our industry carry the same risk aversion instincts with them from their operational experience. For an auditor, this might seem a highly desirable characteristic but it might not provide the best value when an evaluation of change is the subject. Look for an external evaluator that has change management expertise but also has the credibility that extensive operational Business aviation companies can take the extra step to embrace harmonised standards by volunteering for the ISBAO accreditation. experience brings. Choose an organisation that has a robust operational evaluation methodology that can provide a holistic approach to examining your change.

For example, AvMaSSI applies a Safety Architecture approach to operational excellence that provides our subject matter experts and seasoned auditors the latitude to explore the systems and components that comprise the liveware and hardware that supports the technical areas within that system. In this way, the evaluators are not encumbered by checklists and prescriptive standards.

Many of the world's air carriers and operators opt to go the extra step by embracing harmonized standards such as IATA's Operational Safety Audit (IOSA) and suite of programmes, and IBAC's International Standard – Business Aircraft Operations (IS–BAO) audit programme as they move beyond mere regulation and incorporate harmonised standards and best practices. These programmes, and others, are usually years ahead of a regulator's ability to engage and complete the rulemaking process while working with industry to educate and encourage implementation.

And as a sign of the changing times, several forward-thinking air carriers (mainly in the Middle East Region) are moving forward by requesting independent open architecture assessments, or as we call them, Operational Diagnostics, to assess the organisations true compliance to regulation, conformance to company programmes and the effectiveness of its change management programmes. The results have intrigued Boards of Directors and CEOs wanting to know the true operational health of their company.

Its basic risk management and it's as simple as *taking a closer look*.



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Food at altitude

Catering for VVIP clients is a specialised business. Liz Moscrop reports



uriouser and curiouser, as Alice in Wonderland would say. The world's most exclusive coffee has passed through a wild civet en route to the cafetiere. Like the eponymous pigs that turf up truffles in the Dordogne, the Indonesian wildcats have a knack of discovering the best coffee berries and ingesting them whole. Entrepreneurial farmers let nature take its course and collect the beans at the other end. Richard Hardwick director of London based Bespoke Beverages has been selling this Wild Kopi Luwak to high-end customers for several years. The company offers two coffees by invitation only, KL Ruby and KL Diamond, which originates in the Gayo region of Sumatra, Indonesia.

Hardwick said: "Our coffee is an ever evolving love affair. Working in the luxury business we have travelled the world and met coffee growers, farmers, roasters, baristas and connoisseurs whose enthusiasm fuelled our passion to seek out the finest of coffee, the true best of the best."

The firm has created a new level of washing, drying and sorting the beans. It

High end dishes are created to meet the expectations of business aviation passengers then collaborated with one of London's top master roasters. He added: "The result is a coffee so luxurious and available in such tiny quantities that every sip is a joyful reminder of our passion for the perfect cup of coffee."

So what's all this got to do with catering? Everything. Bespoke Beverages has collaborated with Stansted headquartered OnAir Dining to create "A suite of coffee desserts," using the beans. This will shortly be available to OnAir's customers. Owner Daniel Hulme is a chef who is passionate about delivering exciting menus that work well at altitude. He explained: "This coffee is so special that we wanted our clients to try it, and this is the best way we have found of serving it in the air for now. I am anticipating this will prove particularly popular with our clients from the Gulf region."

Given the nature of the passengers, expectations are high, but often not met. Fellow Brits, Royal Blue Executive Services also supplies high-end dishes to Middle Eastern clients and can offer Halal catering, as can Universal Weather and aviation subsidiary Air Culinaire. OnAir is in the process of obtaining its Halal certificate.

Paul Schweitzer Universal's VP sales and marketing said: "Huge pots and pans and dry storage areas are noticeably absent from our kitchens. The best way to categorise our cuisine is 'from scratch, small batch' cooking. This approach is crucial for each element that a dish contains. We want every meal to be a memorable experience."

Air Culinaire has provided inflight catering to hundreds of airports around the world since the year 2000. It has 20 owned-andoperated kitchens and hundreds of associate catering partners on six continents. Its signature dishes feature the latest trends in local cuisine, adapted for the unique inflight environment and developed by Michelin-star trained Executive Chef, Herve Bourdon. He said: "Based on research and client feedback, we've spent months in the kitchen testing and developing new dishes and culinary trends and preparing them in a way that will provide our clients a great inflight catering experience. We're using fresh local ingredients and flavours that work best



within the unique confines of the aircraft cabin."

One of the highlights of the latest Air Culinaire menu is the Lobster Armoricaine, a traditional dish where Air Culinaire Worldwide chefs roast locallyharvested lobster in butter, flambé it with cognac, and finish it off with lobster broth. Another is the Filet de Sole Bonne Femme, a traditional dish from the famous French Chef, August Escoffier, in which the fish is cooked lightly in a creamy white sauce.

Bourdon continued: "All of our products are farm-to-table, such as the free-range poultry that are raised locally, or the freshcaught seafood from the local fish market."

This is doubly important in private jet cabins, which are engineered to sea level pressure. The air is arid on board, largely because there are so few people travelling. Typical humidity levels can be as low as 20.8%. That's six percent lower than the Sahara Desert.

Consequently dishes have to bite. A big selling favourite from the OnAir stable is the Miso Braised Black Cod, along with Spicy Moroccan Chicken and Thai Curry. The tough spices in them blast through the dryness, so people naturally gravitate towards them.

Thanks to that instinctive pull Air Culinaire has been working on new choices. Schweitzer elaborated: "We offer the most popular menu items that are most often requested internationally. Our executive chefs and culinary teams have been busy with research and development in our test kitchens, and created new menu items that reflect their regions' culinary specialities and flavours." Freshness is vital, too. A spokesman for Royal Blue said: "We use only produce sourced locally on a daily basis from a selection of carefully chosen suppliers."The company also offers bespoke catering, tailoring menus to client desires.

Indeed, food is so important to high end clients that the Middle East's only dedicated executive aviation airport has signed an agreement with airline food provider Gate Gourmet, which has a new 770 sqm facility at Al Bateen, staffed by chefs producing gourmet meals from the highest quality ingredients. HE Khalifa Al Mazrouei, chairman of Abu Dhabi Airports Company said: "This is an exciting development for us, which clearly defines our company's strategy to engage in public-private partnerships with prestigious and world renowned organisations, to provide world class service to private jets departing from Abu Dhabi."

Company chief Andrew Gibson added: "The opening of this new flight kitchen with its business model focused on upscale airline catering requirements marks Gategroup's debut in the Middle East."

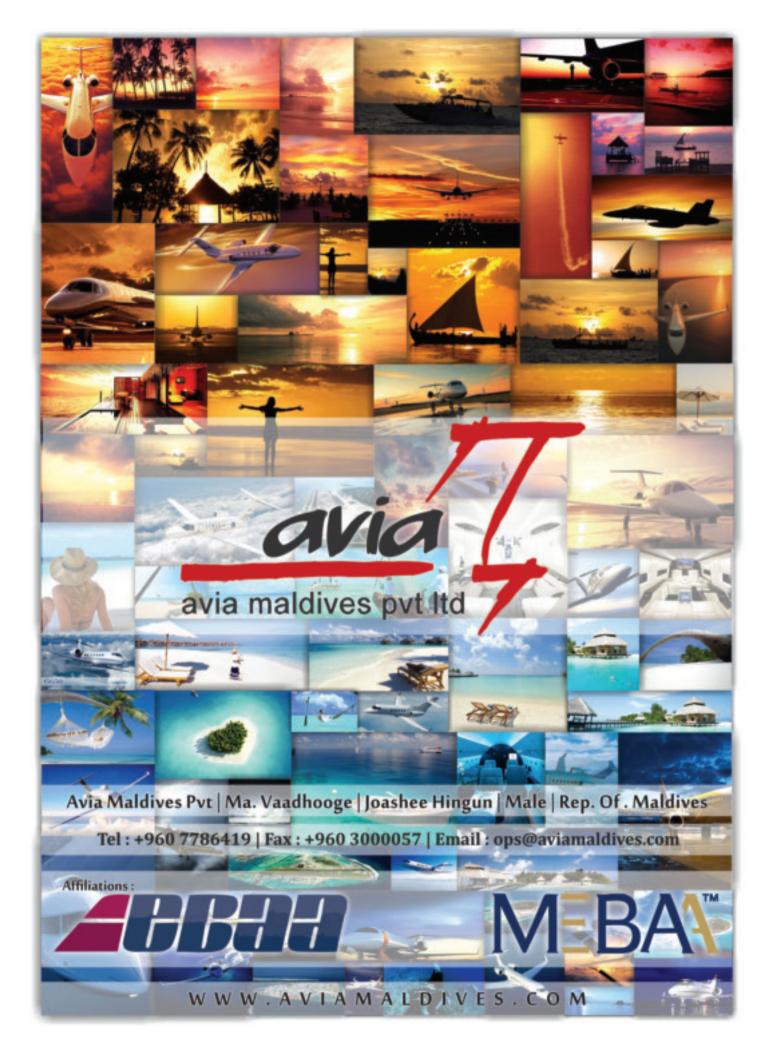
Local airlines are getting in on the act, too. Emirates, for example now provides catering to local private jet operators on request, as well as exotic ranges of fresh flowers in all kinds of arrangements, laundry services (the carrier owns and operates its own laundry service, Linencraft) and equipment cleaning. It removes all catering equipment, and cleans and prepares it for the next flight at its own secure facility.

Hygiene is essential of course, along with healthy eating choices. Paula Kraft, founder and co-owner of Tastefully Yours, has been in the food industry for over 38 years, and BELOW: H.E.-Khalifa-Al-Mazrouei believes Gate Gourmet services at Al Bateen has added to the reputation of the executive airport. has catered solely to private aircraft for almost 30 years. She is chair of the Caterers Working Group and the Caterer Representative on the NBAA's Flight Attendant Committee and also helped created the Mentor programme for cabin crew to join chefs in their kitchens to help bridge the understanding between them. She is passionate about providing the right menus.

She said: "Unfortunately you the passenger, or flight crew are, in part, at the mercy of your global food sources. Is that food source able to step off a programmed menu with scripted recipes and prepare a special request that meets your definition of healthy? Is the food source sophisticated enough to understand how to make their normal fare healthier? What choices are available to you in a given market for catering?"

She continued: "Eating healthily and meeting your nutritional needs means you should share with the person or persons responsible for ordering the catering for your flight, what you are trying to achieve. If you work with a company that allows you to choose from a preplanned menu from contracted caterers, insist that some of these choices fit a healthier lifestyle."





Rockwell Collins is taking the Direct approach with ARINC

Late last year Rockwell Collins acquired ARINCDirect. **Steve Nichols** looks at the integration and the outlook now for the company's business in the Middle East.

aunched in April 2003, ARINCDirect Business Aviation Solutions was created to provide support to private jet owners and operators.

More than 2,800 aircraft now rely on ARINCDirect to deliver a suite of services for every aspect of business aviation.

These include flight planning and operations management systems, weather, notices for airman (NOTAMS), safety management, communications, flight tracking, flight operations system (FOS) and international trip support services.

James Hardie, Director, Rockwell Collins ARINCDirect EMEA, said: "The powerful combination of the two wellrespected brands under one company does seem to be opening up additional opportunities and, as an example, we are transitioning some services management between our teams as we consolidate and integrate the ARINCDirect and Ascend services.

"For us to provide the services, we need to have the hardware on board the aircraft and Rockwell Collins can provide that with cutting-edge equipment, upgrades and retrofits of new functionality. For ARINCDirect, as a service provider we support all the equipment, whoever makes it, and aim to manage the continuity of aircraft connectivity by whatever means are available.

"We are all enjoying working more closely with our other Rockwell Collins colleagues who are also based in the region and have done some joint customer visits where appropriate."

He added that the company has two



ARINCDirect services now vital in the cockpit.

ARINCDirect business. "One looks after sales and account

management and the other is an engineer with extensive experience in avionics and cabin systems. Additionally, we now have the support of the Rockwell Collins field service team and are collaborating in a number of positive ways," he said.

Hardie said that many of the company's experts make regular visits to support specialist requirements and work directly with customers to better understand their needs.

"For example, we have recently coordinated trips to Saudi Arabia with the support of other specialists from our teams in Europe and the USA," he said.

"Local presence is important, but what really makes this work is the global support and wide body of experience that we can bring to bear in troubleshooting any kind of customer connectivity or flight planning problem. And, if the hardware needs replacing or upgrading, then we can get some support for that too."

Hardie said that ARINCDirect was in the unique position of not only owning its own extensive datalink network, which supports thousands of airliners and business jets worldwide, but also being a partner supplier for other networks that aircraft may access, including both satellite and

Technology

VHF datalinks. This gave customers resilient worldwide capability for making sure their aircraft was connected. The company has continued to invest and expand its VHF datalink capability across the Middle East and Africa to improve its network.

"We really understand the technology and its capabilities, so if there are any issues we can quickly get to the bottom of it with a customer aircraft," said Hardie.

"A typical airline would probably have a whole department dedicated to maxim ising the use of datalink information, but in business aviation we find that we have to help customers to get the most out of it and that is a key part of our service philosophy.

"We are also fortunate to have such an active community of customers, who constantly challenge us to do things better, and those improvements are a benefit to all our customers as we evolve our services," he said.

The data ARINCDirect delivers to the cockpit encompasses the full range of aircraft services, including direct instructions from air traffic control under the controller pilot datalink communications (CPDLC) programmes that exist; engine health monitoring reports that are delivered back to original equipment manufacturers (OEMs) for fault analysis and pre-emptive action; safety of flight messages, such as weather warnings and clearances; aeronautical operation control (AOC) messages; and much more.

The latest wind information and graphical weather can also be uploaded to the pilot to ensure that the aircraft's fuel load is still valid.

So how is business?

"In spite of the challenges of 2014 for business aviation in different markets we have continued to see growth in our service uptake globally and regionally," said Hardie.





ABOVE: Monitoring performance and improving information and communication are essential parts of the Arinc service.

BELOW: Rockwell Collins' James Hardie understanding the technology. "We have increased our overall number of customers across the EMEA region and have had some great successes in the Middle East specifically.

"We are also seeing growth in the volume of use of services such as Inmarsat Swift Broadband internet access in the cabin. Our combination of integrated services is stimulating interest and growth as customers buy into one service and realise it can be easily linked to another, which they may already have a similar version of from another vendor.

"What we are all aiming to achieve with the ARINCDirect solution is something that is greater than the sum of its parts, and that can only really be achieved by the close cooperation that we are now able to achieve within Rockwell Collins," he said.

ARINCDirect also has a state-of-the-art operations centre in Annapolis, Maryland, which maintains a round-the-clock service.

Its 'flight following' service is a premium offering to ARINCDirect customers, providing enhanced pre-flight, en-route, and post-flight support. With the service, ARINCDirect flight coordinators (FCs) take a proactive approach to flight planning, aircraft tracking, and pilot communications, providing crews with upto-date information on events and conditions that might affect the safety, efficiency, and comfort of the flight.

ARINCDirect was also the first business aviation service provider to integrate with the FAA's collaborative decision making (CDM) data exchange. Originally available only to the major airlines, this service allows the company to receive early FAA air traffic projections and traffic data.

And, because it is a CDM participant, customers receive higher take-off and landing priorities than non-CDM participants. In addition, it works hand-in-hand with the National Business Aviation Association general aviation desk and air traffic control system command centre, monitoring the state of the national airspace system for en-route flow constraints, anticipated or assigned reroutes, and airport demand.

Using this information, integrated with its flight following service software applications, it can develop and present pilots with flight planning alternatives before and during flight, mitigating disruptions to their schedule.

Dedicated flight following helps reduce or eliminate ground delays and mitigates schedule disruptions because of weather and/or ATC problems.

So what has been ARINCDirect's most popular service and how has it developed?

"We have seen increasing demand and uptake for our mobile services capability, which we demonstrate most clearly in two mobile applications that link to the back office of a flight department – FOS Mobile and ARINCDirect's flight plan app," Hardie said.

But what about business going forward?

"I think it is going to get increasingly competitive in the Middle East, not just for aircraft operators as availability of aircraft increases, but also for suppliers who have to meet the technology demands of the passengers and the operations," he said.

"Passengers are increasingly demanding the best possible connectivity on their aircraft, whether it is for charter or private operation. Being part of managing this and supporting this demand is a challenge we look forward to. Being so comprehensive in our full service delivery now gives us a great opportunity."



Exciting times ahead for inflight connectivity

Business aircraft connectivity has moved from curiosity to necessity in just a few years as **Steve Nichols** reports.

Inflight connectivity aboard bizjets has gone from being a technical curiosity to a necessity in just a few years. And it about to get even more useful as faster satcom systems come online.

High speed Ka and Ku-band systems allow TV, video calling and conferencing, highspeed broadband internet access, email, VPN access,VOIP and much more for the cabin.

And the flight deck is not going to be being forgotten either with wirelesslyupdated flight maps, real-time weather updates, and maintenance information.

So what is going to drive this growth over the next few years?

Inmarsat's GX programme is complex but effective. Inmarsat is due to launch its Global Xpress (GX) Ka-band service to the aviation community early in the second half of 2015.

Whereas Inmarsat's existing SwiftBroadband (SB) service uses L-band frequencies in the 1 to 2GHz range, Ka will use much higher microwave frequencies in the 26.5–40GHz area of the spectrum.

Just as an FM radio broadcast can offer higher quality than medium wave, the higher Ka-band radio frequencies being used means data throughputs can be increased dramatically, offering in the region of 30-50 megabits per second (Mbps), compared with 432kbps with SB up to a 100x speed increase. Boeing built the three 702HP Ka-band satellites that will form the Inmarsat I-5 constellation when they are fully operational next year and a fourth satellite has been ordered to act as a back-up in case of a launch failure.

The first I-5 satellite is now safely in position over the Indian Ocean and is ready to serve Europe, Asia, the Middle East and Africa. The second satellite will cover the Atlantic Ocean Region (AOR) and the Americas with the third covering the Pacific Ocean Region (POR).

The next two satellites are likely to be launched early in 2015, after a delay due to technical problems with the Russian



Proton launcher, one of which failed to put its payload into orbit back in May.

Leo Mondale, Inmarsat's President Aviation, wouldn't put an exact date on the next I-5 launch.

"We will have all our three I-5 satellites in service by mid-2015," he said. "But as for the exact launch dates we can't put them on the calendar just yet.

"I've been in the space industry a long time, and what we want is a successful launch. That won't happen until everyone is confident that it will be OK."

"Inmarsat's Global Xpress system is incredibly complex and the launch is only a small, but important part of its entire journey, so we want it right. What I would say is that the experience we have built up with the first I-5 satellite means the testing and introduction to service phases of the second and third satellites will be much shorter.

"GX will offer the only truly global Kaband connectivity service – that's the ultimate goal."

Honeywell is building the antennas and avionics needed for aircraft wanting to use GX. The bizjet offering is called Jet ConneX (JX) and will offer up to 50Mbps to VVIP aircraft and up to 33 Mbps to bizjets. Staying connected drives business as usual for corporate fliers.

that can track the satellite. Smaller aircraft, such as bizjets, will use a tail-mounted parabolic dish antenna.

Narrow and wide-body aircraft can be

fitted with a fuselage-mounted antenna

Tipping the scales at just 9lbs the lightweight bizjet antenna can easily be balanced on one hand.

Both antennas will have to sit under a radome made from specialist materials transparent to the microwave radio signals being beamed down from the three I-5 satellites 22,000 miles above the equator.

So with GX coming online in the middle of 2015, is that the end of Inmarsat's slower SwiftBroadband (SB) service?

Far from it. Inmarsat expects the two services to be complementary, not for GX to replace SB. In fact, Inmarsat is continuing to invest in SB which it feels has a long life ahead of it.

As well as offering data speeds to the cabin of up to 432kbps – enough for emails, small file transfers and phone calls using Voice over Internet Protocol (VOIP) – there is a lightweight version known as SB200, which uses smaller, lighter antennas and is therefore well suited to bizjets.

Data speeds give a similar experience to that found over a typical hotel Wi-Fi connection.

But Inmarsat is also currently flight testing



SB for aviation "Safety Services" – air traffic control (ATC) instructions passed from the ground to aircraft.

This will allow Aircraft Communications Addressing and Reporting System (ACARS) data messages to be passed over an SB satellite link.

Initial testing has been complete aboard an Airbus A319 and Hawaiian Airlines are due to start further testing shortly using a Cobham Aviator S terminal – the S standing for "safety".

Leo Mondale said: "This is the start of a revolution in communications for the flight deck. It shows the way forward for Future Air Navigation Systems (FANS) for the nearly 10,000 aircraft currently relying on our Inmarsat Classic Aero services, which were launched over 20 years ago.

"SB Safety provides prioritised voice and ACARS/FANS data transmission when an aircraft is out of reach of land-based communications, which is indispensable for aircraft flying over oceans."

Safety Services are currently approved for use over the Inmarsat I-3 "Classic" services. But one of the key milestones for SB Safety Services was the launch of the Alphasat satellite last year, which provides the extra throughput and capacity needed.

As well as ACARS, SB Safety also supports flight deck voice services and IP connectivity to the flight deck, enabling other flight operations and cockpit services, such as inflight updates to Electronic Flight Bags (EFBs) and Flight Data Recorder (FDR) downloads.

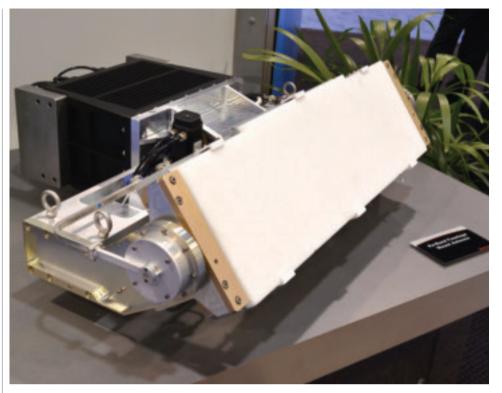
It also supports aircraft position reporting and tracking, and voice transmission for air traffic management (ATM) communications. A range of terminal variants will be available, ensuring SB Safety can meet the requirements of all aircraft types, including business jets.

SB Safety is expected to achieve FANS approval in early 2016, following successful flight trials with Hawaiian, which are being undertaken under FAA supervision.

So is there anything else in the pipeline for bizjet operators?

Iridium has also been another mainstay for operators in the MENA region. Using a constellation of low-earth orbiting satellites, Iridium's biggest plus has been the small antennas needed for the system to work. Often only the size of a hockey puck, this has meant installation costs could be kept low.

The downside is that Iridium only offers very low data speeds of around 2.4kbps – good enough to offer telephone services



and basic e-mail services, but not fast enough for video or large file transfers.

Iridum is also authorised for critical air traffic control communications (Safety Servcies) for aircraft operating in oceanic airspace.

This followed the completion of an FAA process evaluating aircraft flying in airspace under its jurisdiction to use Future Air Navigation System (FANS) 1/A over Iridium.

But times are changing and the company has plans for a new constellation of 66 satellites and a number of in-orbit spares to be launched called Iridium NEXT.

The constellation is expected to provide service to 2030 and beyond, while offering customers greater bandwidth and data speeds.

Matt Desch, CEO, Iridium, recently said: "Our Iridium NEXT program continues to track toward its first scheduled launch in mid-2015, as we've achieved several key milestones during the last few months.

"The first satellite engineering model is complete and has been delivered to Iridium's Technical Support Centre, enabling us to conduct a rigorous functionality and compatibility review with the entire network system."

But if you don't want SwiftBroadband or Iridium, and can't wait for Jet ConneX or Iridium NEXT, there is another alternative available to bizjet operators. Inmarsat's Ka-band antenna.

ViaSat's Yonder and Exede in the Air highspeed connectivity services promise cablelike performance, plus seamless connections around the globe, via Ku-band and Kaband satellite connections. Yonder offers up to 1.5 Mbps to the aircraft and up to 128 kbps off with STCs for a host of aircraft including Gulfstream, Boeing (BBJ), Cessna and Bombardier.

Viasat currently has extensive coverage throughout the world and there are plans to extend this further over the next few years, especially over parts of North Africa, Eastern Europe, the Far East and Northern Scandinavia.

There is currently good coverage over the Middle East.

Viasat Exede in the Air takes speeds even higher thanks to its Ka-band performance, but there is currently no coverage over the Middle East. Exede boosts cabin-available speeds up to around 12-15Mbps via a network of three satellites. Europe is covered by an agreement with Eutelsat for coverage over its KA-SAT satellite.ViaSat-2 is also coming in 2016, bridging North America and Europe Ka-band satellite coverage.

Viasat also has embryonic plans for Kaband coverage over the MENA region in the future.

So as you can see, the future of inflight connectivity for the business aviation community is a rosy one. There are lots of options to chose from and plenty of developments in the pipeline.

Taking the tablets

Alan Dron looks at how the Middle East's business aviation community is saying goodbye to paper thanks to Jeppesen.

he use of tablet-based electronic flight bags (EFB) is growing steadily in the Gulf as owners and pilots increasingly see the benefits of moving away from paper-based regimes or embedded equipment, says navigational solutions provider Jeppesen.

Keeping up with the stream of new software releases from tablet manufacturers is keeping the company on its toes, says Mark Long, Jeppesen's regional director, customer service, Middle East business aviation.

"We dovetail in with each software iteration as it comes out so we are constantly keeping up with the latest platform management software."

Long finds most of his efforts focused on the GCC states and, particularly, Dubai, Abu Dhabi and Saudi Arabia: "Business aviation is a particularly strong sector, but it's not huge." However, growth is considerable.

"It's a big market for us and it's important to us." As the region's economy expands, he has seen captains of industry tending to fly more in their own privately-owned aircraft as they move around the region setting up deals.

Long says that the advantages of moving to tablet-based EFBs are becoming more apparent to owners and pilots. If an EFB that is embedded in the aircraft develops a fault, the aircraft owner has to take it offline, take it apart and put it back together again. Whereas, if you happen to lose or break a tablet, "you walk into a duty-free and buy a new one," then just download the Jeppesen application on to it.

A lot of Long's time is spent helping his clients get authorisation to institute a digital chart environment within companies. "It's all about dovetailing with them to understand what they want to do with it and getting authorisation from the authorities. Business aviation operators in the Middle East are facing challenges that are common across the industry. Operators are looking to eliminate bulky paperbased flight materials through use of electronic flight bag (EFB) tools that increase operational efficiency, optimise pilot workload and reduce operating costs. Jeppesen, part of Boeing Commercial Aviation Services, is currently offering its data-driven Mobile FliteDeck EFB solution for iOS (iPad) and FliteDeck Pro version for both iOS and Windows 8 tablets to suit the individual requirements of business aviation operators.

The company argues that, not only does the replacement of paper-based systems save weight and thus fuel, it also improves safety margins through increased situational awareness on the ground and in the air.

It does this by FliteDeck Pro now including departure and arrival runway depiction (SID and STAR) rendering on the en-route map. A new 'Flight Info Drawer' feature redesigns the previous Route Drawer to create, load, view, and save the active flight data from either the terminal charts view or the en-route view. Pilots can now also create userdefined waypoints and comments to identify important points along the enroute map.

Flight information, including worldwide navigation charts is delivered to FliteDeck Pro through the JDM Pro enterprise solution. This scalable data management system distributes encrypted operational data and documents across a web-based system, ensuring timely and accurate delivery of current navigational and operational information to pilots. In addition, JDM Pro is designed to work in concert with Mobile Device Management (MDM) systems for end-toend control of EFB content and devices.

With Windows 8 tablets, pilots are now able to open two applications side-by-side

Operators are seeing the advantages of moving to tablet-based EFBs. on screen to access critical flight information such as text and enroute charts in a split view.

New integration and collaboration capabilities include app-to-app route sharing and the ability to now import flight plans from third party flight planning systems, says Jeppesen. The new device-todevice route sharing, for example, creates a more efficient working environment in a two-pilot cockpit. Shared data across devices includes origin, destination and any alternate airports. Navaids, waypoints, (including user-defined waypoints), airways entered into the route description and selected terminal charts for the flight are also included, facilitating crew resource management.



A-Z of MEBAA members

Numbers are growing at the Middle East and North African Business Aviation Association (MEBAA) as it opens dialogue with governments and regulators as the lobby point and main contact for any regulatory issues facing the business aviation industry in the region

As a member of the International Business Aviation Council (IBAC), MEBAA has global reach and is part of the representative body which provides technical and operational expertise to government policy and rulemaking organisations such as ICAO and other international policy establishments, MEBAA members are recognized as playing a key role in the industry sector by the authorities. The Association uses member events to develop strategy and identify the key issues.

Membership is open to companies and organisations involved in the business aviation industry including manufacturers and operators as well as affiliates who provide services or support or have an interest in the industry in the MENA region.

Members come from across the Middle East and North Africa and there are many examples of companies and suppliers working together to grow the market in the region. In addition a number of companies based in Europe, the Americas and Asia have joined MEBAA to ensure greater access and links to MENA operators.

The following directory offers a brief snapshot of MEBAA member companies as of November 2014.

The list is not exhaustive and material used has been obtained from a number of sources. Neither the companies concerned nor the publishers hold any responsibility for any specific claims or data that is listed here and the information is subject to change.

Further information about the members' services or products should be sought from the companies themselves either directly or via their websites.

The membership list is continually updated via the MEBAA website, which also provides details about how to join MEBAA.

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ABAG's mission is to defend and promote the interests of its members with integrity and professionalism, raising the recognition of society and government as its legitimate interlocutor with the General Aviation.

Affiliate

Abu Dhabi Airports Company (ADAC)

Tamara Bercebal, P.O. Box 94449 Abu Dhabi United Arab Emirates Tel: + 971 2 505 3296 Fax: + 971 2 575 8300 Email: tbercebal@adac.ae Web: www.adac.com

Abu Dhabi Airports Company (ADAC) is a public joint-stock company incorporated by Emiri Decree Number 5, of March 4, 2006, to spearhead the development of the Emirate's aviation industry. The company is establishing a dedicated executive airport at Al Bateen military airbase, 10 kilometers from Abu Dhabi. The Al Bateen facility will be developed as an exclusive corporate jet facility and ADAC will invest more than Dh200 million in additional facilities. ADAC will be offering passenger terminals, airport services, maintenance, repair and overhaul, fuel, handling and all other fixed-base operational services. It will be the third major airport in ADAC's portfolio, which comprises Abu Dhabi International Airport. Affiliate Association

Abu Dhabi Aviation

P.O. Box 2723 Abu Dhabi United Arab Emirates Tel: + 971 2 575 8000 Fax: + 971 2 575 7775 Email: adava@abudhabiaviation.com Web: www.abudhabiaviation.com

Abu Dhabi Aviation is the largest commercial helicopter operator in the Middle East, operating/leasing 57 helicopters including (15 x Augusta Westland AW139, 1 x AW109S, 22 x Bell 412, 19 x Bell 212), 3 x Bombardier Dash-8 fixed-wing aircraft; employing nearly 1000 personnel, including 154 pilots and 234 aircraft maintenance engineers. The bulk of the company's business activity is in support of Abu Dhabi Offshore Oil and Gas, Engineering and Construction Companies. Other business activities include SAR, firefighting, heavy lifting, VIP, medical evacuation, seismic survey, photography, and charter.

Abu Dhabi National Insurance Company

Khalifa St. ADNIC Building Abu Dhabi P.O. Box 839 United Arab Emirates Tel: + 971 2 408 0100 Fax: + 971 2 408 0604 Email: adnic@adnic.ae Web: www.adnic.ae

Abu Dhabi National Insurance Company (ADNIC) PJSC is a trusted insurance partner with long standing expertise in providing insurance products to individuals and corporates to manage unpredictable health, life and general risks. Founded in the United Arab Emirates (UAE), in 1972, ADNIC is a leading multi-line insurance provider with a wide network of branches as well as sales and service centers across the country. ADNIC is publicly owned and listed on the Abu Dhabi Securities Exchange (ADX).

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Supplier

Affiliate

Al Jaber Aviation LLC

Abu Dhabi

P.O. Box 95220 United Arab Emirates Tel: + 971 2 657 6666 Fax: + 971 2 657 6667 Email: mark.pierotti@ajaprivatejets.com Web: www.ajaprivatejets.com

AJA "Your Private Airspace" are one of the leading VIP and Executive Jet Charter Operators in the GCC and are experts in Embraer, Boeing and Airbus VIP aircraft.

Beyond executive aircraft charter, AJA offers a diverse range of tailored services to its discerning patrons. Bespoke amenities include aircraft management, sales and acquisitions and aviation consultancy. With an impressive fleet of premium jets and industry professionals, AJA "Your Private Airspace" undoubtedly exceeds its clients' expectations.

With royals, dignitaries, celebrities and the world's business elite among our guests, our clientele know they can rely on our intuitive, discreet and impeccable service.

Operator

Alpha Star Aviation Services

King Fahad Road Al-Mass Tower, 7th floor, Riyadh P.O. Box 15622, Riyadh 11454, Saudi Arabia Call centre: + 966 920025111 Tel: + 966 1 210 0303 Fax: + 966 1 210 0909 Email: info@alphastarav.com Web: www.alphastarav.com

Alpha Star Aviation Services was formed with one goal in mind, to be a benchmark in business aviation.

Our team consists of dedicated and experienced pilots, cabin crew, engineers and aviation professionals. Every aircraft in our fleet has been selected to suit a variety of needs. Whether clients are chartering one of our luxury and comfortable aircraft, or we are managing on behalf of our clients, our service includes – and is not limited to – the following:

- Aircraft Management
- Charter Flights Services
- Air Ambulance
- Engineering & Technical Support Services
- Aviation Consulting Services



Operator

Al Salam 319 Ltd (AMAC)

Almoayyed Tower Seef District P.O. Box 21712 Manama Kingdom of Bahrain Tel: + 973 3 604 0352 Email: vpccj319@gmail.com / aljordan@eim.ae

Al Salam 319 Ltd. (Branch) is a United Arab Emirates company, located in Dubai Airport Free Zone.

Operator

Arab Wings - International Wings Group

Marka Civil Airport Amman 15031 Amman 11134 Kingdom of Jordan Tel: + 962 6489 9790 Fax: + 962 6489 9796 Email: sales@arabwings.com.jo Web: www.iwg-aviation.com

International Wings Group is the Middle East's major aviation holding company. (IWG) is now the parent company of Royal Jordanian Air Academy, Queen Noor Civil Aviation Technical College, Arab Wings, Gulf Wings & Iraq Gate.

Services offered by IWG:

- Education & Training
- Aircraft Leasing (Dry & ACMI)
- Aircraft Acquisition & Sales
- Aircraft Management
- Executive Charter Services
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- Air Ambulance Services
- Aircraft Maintenance Services

Operator

ARABASCO

King Abdul Aziz International Airport Jeddah 21413 Kingdom of Saudi Arabia Tel: + 966 012 684 6900 Fax: + 966 012 684 6999 Email: emad.ghobar@arabasco.aero Web: www.arabasco.aero

For over three decades, ARABASCO has been the elite provider of aviation services in the kingdom, with strategic locations in Jeddah, Riyadh, Medina and Yanbu. A one-stop-shop for the business traveller and the aviation industry, ARABASCO offers aircraft maintenance, management and ground handling services to the business jet communities World Wide.

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Operator

Arabian Knight

Contact: Nick Horne

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Arabian Knight is the exclusive quarterly magazine for the Arab World. Circulated by hand and delivered by courier to the business, cultural and political leaders of the Middle East. In addition to select interviews, Arabian Knights' features calendar provides a rich and varied range of topics that excite and involve our readers. Regular features and themes include aviation, motoring, superyachts, exclusive hotels and resorts, personal products ad services as well as wealth management, property and investment.

Arabian Aerospace (Times Group)

3-4 Rumsey House, Locks Hill, Rochford Essex SS4 1BB, United Kingdom Tel: + 44 1702 530 000 Fax: + 44 1702 533 088 Email: mark.brown@arabianaerospace.aero Web: www.arabianaerospace.aero / www.africanaerospace.aero / www.timesgroup.co.uk

Now in its seventh year, *Arabian Aerospace* – with its quarterly magazine, online daily news, weekly newsletter and show daily specials – has become the market leader for aerospace professionals operating in and with the Middle East. In 2015 we are launching a weekly video news programme and for your regular subscription, please visit: www.arabianaerospace.aero

African Aerospace – officially supported by AfBAA and AFRAA – provides coverage of the latest issues and developments impacting the continent's growing aerospace sector. Its quarterly magazine, online daily news and weekly newsletter are supported by show dailies at major regional events. For free subscription visit: www.africanaerospace.aero



Affiliate

AsBAA - Asian Business Aviation Association

Contact: Cindy Du / Vivienne Bourke Suite 1610, Kunsha Center 1, 16th Floor No.16 Xinyuannan Road Chaoyang District Beijing 100027 China Tel: + 8610 8400 4004 Mobile: + 86 13520828806 Email: info@asbaa.org Web: www.asbaa.org

Asian Business Aviation Association (AsBAA) is a non-profit association which represents more than 100 entities. The purpose of AsBAA is to promote the benefits of business aviation in Asia and to help the companies who rely on business aviation aircraft succeed in Asian. AsBAA is to strive for a beneficial environment to encourage business aviation to thrive in Asia. In partnership with the National Business Aviation Association (NBAA), AsBAA coorganizes the annual Asian Business Aviation Conference & Exhibition (ABACE).

Affiliate

ASE Group (Egypt, Morocco & UAE)

P.O. Box 54882 Dubai United Arab Emirates Tel: + 971 4 214 6975 Fax: + 971 4 214 6978 Web: www.asegrp.aero

ASE-Egypt established in 1989, ASE-Morocco in 1998 and by 2008 ASE-UAE became our third star to serve our partner airlines at all Egyptian, Moroccan and UAE airports.

Within the Ground Services Providers industry, ASE Group "Egypt, Morocco & UAE" achieved an authentic reputation for its transparency, credibility and accountability.

Supplier

Aurora Aviation S.A

3003 Saba Tower 1 Jumeirah Lake Towers Dubai United Arab Emirates Tel: + 971 4 447 9644 Fax: + 971 4 447 9744 Email: info@aurora-aviation.aero Web: www.aurora-aviation.aero

Aurora Aviation S.A. is a young, dynamic, highly professional company providing quality innovative flight management services to clients globally.

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Atlantic FuelEx

Al Sapphire Tower office 702 Dnata Center Diera Dubai Dubai 28797 United Arab Emirates Tel: + 971 4 261 1166 Fax: + 971 4 230 6300 Email: info@atlanticfuelex.com Web: www.atlanticfuelex.com

Atlantic FuelEx member of Atlantic AIS Group located in Dubai with network of branches Germany and Turkey our main objective is to provide high quality of services for schedule airliners, corporate organizations and governmental entities around the world at the most competitive prices, as well as a comprehensive list of related services, as we have extremely reliable and solid network of fuel suppliers worldwide. Our specialized professional's team works concurrently with our extensive network of fuel suppliers, Intoplane agents and FBO's around the clock, seven days a week.

Supplier

Australian Business Aircraft Association Inc.

9 Guthrie Avenue, Cremorne NSW 2090 Australia Tel: + 61 2 9953 0363 Email: abaadbell@optusnet.com.au

The ABAA is one of 14 Business Aviation Associations throughout the world, which are members of IBAC.

Our membership has increased to 30 Operating and 24 Associate members. Members operate about 65% of the business jets based in Australia and some turbo props and helicopters.

The ABAA is represented on several Civil Aviation Safety Authority, Airservices Australia and Aviation Industry forums & working groups.

Avia Maldives Pvt. Ltd

Ma. Vaadhooge 20175 Joashee Hingun Male Maldives Tel: + 960 300 0058 Fax: + 960 300 0057 Email: ops@aviamaldives.com Web: www.aviamaldives.com

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Affiliate

Aviation Horizons

Mohammad Bin Abdul Aziz St. Aviation Horizons Bldg 197 First Floor Jeddah P.O. Box 16727 Jeddah 21474 Kingdom of Saudi Arabia Tel: + 966 1 2263 2095 Fax: + 966 1 2263 2163 Email: ops@aviation-horizons.com Web: www.aviation-horizons.com

Aviation Horizons is a Saudi aircraft operator company established on January 2007 based in Jeddah, Saudi Arabia. Aviation Horizons is a fully licensed aircraft operator by the GACA (General Authority of Civil aviation) and the Ministry of Trade in Jeddah, Saudi Arabia. Aviation Horizons is proud to provide an integrated and complete private aviation services to our corporate jet clients and VIP aircraft owners including but not limited to aircraft management, aircraft sales, aircraft leasing, aircraft finance as well as crew training and aircraft support services to all private jets and VIP aircraft types. Aviation Business Middle East

ITP Business Publishing Building #14, Dubai Media City P.O. Box 500024 Dubai United Arab Emirates Tel: + 971 4 444 3000 Fax: + 971 4 444 3030 Web: www.aviationbusinessme.com

Aviation Business is the only publication covering the aviation and airport sectors throughout the Middle East with a BPA audited circulation of 5370 subscribers. The title has covered the Middle East aviation sector for more than 10 years, becoming a trusted source of information for airlines and airports. Circulated to industry professionals in the MENA region each month, the magazine covers all aspects of commercial aviation and airport development, including aircraft, IT and airport technology.

Affiliate

Aviation Link

Suite One Sixth Floor 3204 Palestine Street Al Hamra District Jeddah 23321-6420 Kingdom of Saudi Arabia Tel: + 966 12668 1311 Fax: + 966 12668 4549 Web: www.aviationlink.aero

Aviation Link provides an extensive portfolio of corporate aviation services for VIP customers in the Middle East including aircraft acquisition, interior design, completion oversight, operational and maintenance management.

Operator

Avpro, Inc.

900 Bestgate Road Suite 412 Annapolis Maryland 21401 United States of America Tel: + 1 410 573 1515 Fax: + 1 410 573 1919 Email: info@avprojets.com Web: www.avprojets.com

AVPRO, INC. Is one of the largest corporate aircraft brokerage and acquisition firms worldwide.

Avpro has credit facilities in excess of \$100 million to facilitate its captive inventory business which generates a substantial amount of annual net profit with gross retail sales of \$1.0 billion annually, typically involving more than 100 transactions per year.

The company was founded in 1991 and enjoys an excellent reputation among its clients, industry manufacturers and leading aviation lenders -with over 50% repeat clientele.

Avpro is known throughout the industry for its creative approach to deal making and for its industry leading advertising and marketing.

Affiliate

BAOA - Business Aircraft Operators Association

Suite 306, G+5 Building Opp Terminal 1D, IGI Airport New-Delhi 110037 India Tel: + 91 11 4710 4513, 4710 4526 Email: info@baoa.in / secretary@baoa.in Web: www.baoa.in

BAOA is a **'Not for Profit'** Association formed in 2011, to represent the interest of the Business and General Aviation Industry in India. We consist of 70+ members which include all major aircraft/helicopter operators, owners, aviation support services, aircraft manufacturer etc. Our common aim is to work with Government of India (through MoCA, DGCA, BCAS, AAI etc.) to foster the growth of the Business and General Aviation Industry, whose fleet is almost double the size of the commercial airlines fleet in India today.

Ayla Aviation Academy

P.O. Box 2434 Aqaba 77110 Kingdom of Jordan Tel: + 96 2 3206 4777 Fax: + 96 2 3206 4770 Email: info@aylaaviation.com Web: www.aylaaviation.com

Ayla Aviation Academy was established in 2006. From its very first days in operation, Ayla was keen on setting a new benchmark in flight training in the region. Today, with its state of the art facility, the young academy has emerged as one of the most reputable flight training organizations in the industry.

Over is course of years, many cadets have gone through the academy's doors. Many of them today are flying for major carriers in all corners of the world. The programs offered at Ayla are carefully tailored to meet the ever changing demands in aviation.

Affiliate

BBGA - British Business and General Aviation Association

Unit 1, Brook Farm Barns Dorton Buckinghamshire HP18 9RT United Kingdom Tel: + 44 1844 23 8020 Fax: + 44 1844 23 8087 Email: Rachael.paskin@bbga.aero Web: www.bbga.aero

BBGA represents the interest of member companies at Local, National, European and International levels. BBGA support and promote the growth and wellbeing of a profitable Business and General Aviation industry. BBGA's task is to ensure that Business and General Aviation's importance is fully understood and appreciated by the public, local and central government. We have strong positive and active relationships with UK Government, other trade associations, UK CAA, EASA and Brussels.

Affiliate Association

Beechcraft Corporation

Beechcraft International Service Company (JLT Branch) Indigo Icon Tower, Office 3201 Jumeirah Lakes Towers Dubai United Arab Emirates Tel: + 971 56 758 9335 Email: David_dekock@beechcraft.com Web: www.beechcraft.com

Beechcraft Corporation designs, builds and supports versatile and globally renowned aircraft, including the King Air turboprops, piston-engine Baron and Bonanza, and the T-6 trainer and AT-6 light attack military aircraft. Its 5,400 highly skilled employees are focused on continuously improving the company's products and services which are sold to individuals, businesses and governments worldwide. In business since 1932, Beechcraft has built more than 54,000 aircraft and more than 36,000 continue flying today. It leads the industry with a global network of more than 90 factory-owned and authorized service centers. The company's headquarters and major manufacturing facilities are located in Wichita, Kan. For more information, visit beechcraft.com or follow us on Twitter @Beechcraft.

Supplier

Boeing Business Jets

P.O. Box 3707 M/C 1E-77 Seattle, WA 98124-2207 United States of America Tel: + 1 206 662 4300 Fax: + 1 206 662 4330 Email: business.jets@boeing.com Web: www.boeing.com/commercial/bbj

Boeing Business Jets is dedicated to bringing the best of commercial aviation into the realm of private air travel. We offer our customers a wide range of Boeing products which can be customized for the private, business or governmental sectors. The robust characteristics of these commercially inspired airplanes are an excellent value proposition when outfitted for the private market. They offer space, reliability and world wide support.

BEXAIR

BEXAIR Executive Terminal Bahrain International Airport P.O. Box 50280 Muharraq Kingdom of Bahrain Tel: + 973 1 732 5900 Fax: + 973 1 732 5969 Email: info@bexair.com Web: www.bexair.com

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Founding

Bombardier

Dubai Airport Free Zone Bldg 5E-B, Suite 646 Dubai 371039 United Arab Emirates Tel: + 971 4 250 0181 Fax: + 971 4 250 0296 Email: bombardier.dubai@aero.bombardier.com Web: www.bombardier.com

Bombardier is the industry's leading corporate jet manufacturer. Its portfolio of 11 business aircraft, the industry's largest and most comprehensive, includes the legendary Learjet, world renowned Challenger and industry leading Global jet families. Bombardier business aircraft are supported by Bombardier Customer Services, leaders in aftermarket sales support with a worldwide network of 64 maintenance facilities and parts depots in 27 countries, nine training facilities, and over 190 field and support staff deployed internationally.

Founding

CBAA - Canadian Business Aviation Association

55 Metcalfe St. Suite 430 Ottawa Ontario K1P 6L5 Canada Tel: + 1 613 236 5611 Fax: + 1 613 236 2361 Email: info@cbaa.ca

The Canadian Business Aviation Association (CBAA) is a non-profit association formed in 1961 as Canada's voice for business aviation. Since its inception, CBAA has assumed an increasing leadership role in its advocacy for Canadian business aviation interests. With a membership of 750 companies and organisations, including operators, management companies and suppliers, CBAA represents the entire business aviation community with a unified and collective voice.

Affiliate Association

Celerant Consulting M.E.

Fotouh Al Khair Center Tower 3 Floor 0 P.O. Box 44183 Abu Dhabi United Arab Emirates Tel: + 971 2 635 0520 Fax: + 971 2 658 5790

Celerant has a long track record in multiple sectors including energy, chemicals and government, but it also brings an expertise in skills-transfer essential to supporting businesses successfully implement Emiratisation programmes.

Established in 1987, Celerant has grown a worldwide business, with this latest opening taking its number of offices to 12 across the US and EMEA.

Cedar Jet Center-MEAG

General Aviation Terminal-Beirut R. Hariri International Airport, P.O. Box 11-3133 Beirut-Lebanon Tel: + 961 1 622 142/3 + 961 3 385 001 Fax: + 961 1 162 2145 Email: cedarjetcenter@meag.com.lb Web: www.cedarjetcenter.com

Cedar Jet Center (FBO) is a subsidiary of the Lebanese national carrier Middle East Airlines.

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With its professional and friendly staff, latest equipment, spacious hangar, upscale lounge, dedicated crew lounge and snooze room; CJC brings new levels of luxury, service, and safety to VIP & Executive Aviation in Lebanon.

Supplier

Cessna Aircraft UK

Farnborough Airport Farnborough Hampshire GU14 6XA United Kingdom Tel: + 44 1252 371651 Regional Sales Director: Ashley Namihas Email: anamihas@txtav.com Web: www.textronaviation.com

Cessna's Citation range of business aircraft offers the largest range of light and medium sized business aircraft in the market today, starting from the highly successful Citation Mustang, progressing through to the Citation X, the world's fastest business jet. Cessna Citations have, and continue to, consistently outsell all other light and midsize jets by a margin of nearly two to one.

Affiliate

CFM International

Rond Roint René Ravaud - Réau 77550 Moissy-Cramayel France Web: www.cfmaeroengines.com

CFM International is a 50/50 joint company between Snecma (Safran, France), and GE (USA). CFM has become the preferred supplier of commercial aircraft engines with a product line that serves as the industry benchmark for reliability and cost of ownership. CFM produces the best-selling family of CFM56 turbofans, with the most extensive support network in the industry, and is developing the LEAP engine, an entirely new baseline turbofan family that will power the next generation of single-aisle commercial jets including the Airbus A320neo, the Boeing 737 MAX and the COMAC C919.

The company was formed as a joint venture in 1974 and the partnership agreement have been extended to 2040. More than 26,500 CFM56 engines have been delivered to date to more than 530 operators worldwide.

Supplier

CIT Aerospace

1000 South Pine Island Road Fort Launderdale FL 33324 United States of America Tel: + 44 207 411 4641 Email: Graeme.Shanks@cit.com Web: www.cit.com/businessair

Founded in 1908, CIT is a bank holding company with more than \$35 billion in financing and leasing assets. It provides financing and leasing capital and advisory services to its clients and their customers across more than 30 industries. With more than 30 years of experience and originations exceeding \$20 billion, our Business Aircraft group is among the world's premier financial services organizations.

CIT does not require a private wealth commitment in order to finance an aircraft with us. Our financing programs include recourse loans, leases, progress payment financing, non-recourse and limited recourse structures.

Chapman Freeborn Aviation Services

Office 2056, Block 7WA Dubai Airport Free Zone Dubai, P.O. Box 54619 United Arab Emirates Tel: + 971 4 206 7300 Fax: + 971 4 299 7032 Email: Cargo Charters: cargodxb@chapman-freeborn.com Passenger Charters: paxdxb@Chapman-freeborn.com Web: www.chapman-freeborn.com

Chapman Freeborn is the world's leading air charter service company, with a proven reputation for innovation, expertise and professionalism.

Established in 1973, Chapman Freeborn has four decades of experience providing specialised air charter solutions for both passenger and cargo movements.

We have built a global network of over 30 offices strategically located across 6 continents, with an established presence in most major commercial and aviation hubs. We offer more worldwide buying power, service locations and local expertise than any other air charter company.



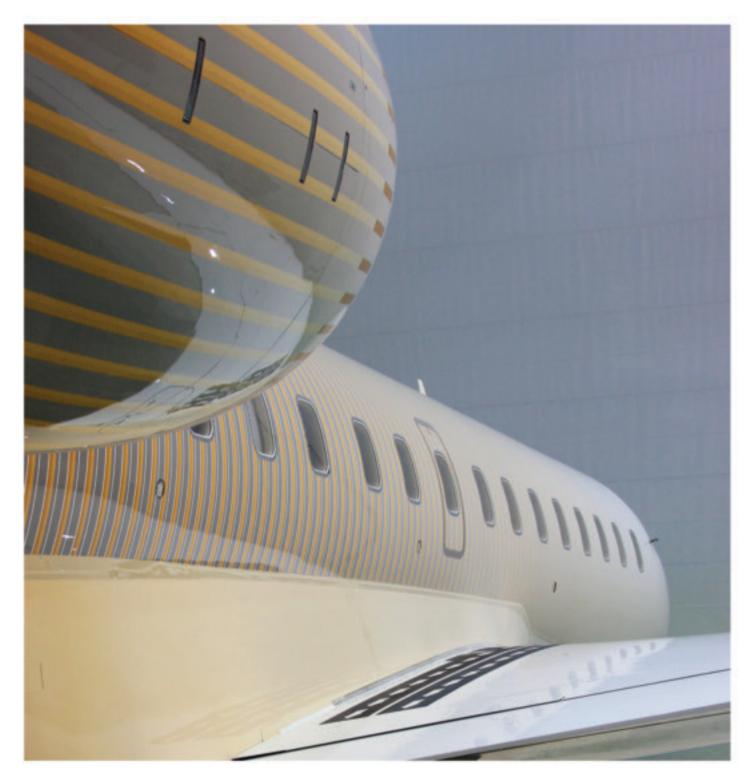
Supplier

Clyde & Co LLP

Rolex Tower Sheikh Zayed Road Dubai P.O. Box 7001 United Arab Emirates Tel: + 971 4 384 4000 Fax: + 971 4 384 4004 Email: mero@clydeco.ae Web: www.clydeco.com

For the past seven consecutive years the Clyde & Co aviation and aerospace team has been named as 'the world's leading firm in the field of aviation law' (Who's Who Legal), recognition that is mirrored by the various legal directories. Our global aviation practice comprises of more than 100 lawyers, including a team of aviation lawyers based in the Middle East, making Clyde & Co a natural choice for clients seeking in-depth experience and aviation expertise in the Middle East and across the globe.

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Comlux Middle East, based in Bahrain, is the commercial office of Comlux the Aviation Group for the Gulf Region.

Comlux The Aviation Group is a leader in VIP aviation services operating worldwide with the highest standards of safety and quality. Comlux offers a comprehensive set of services to VIP customers who wish to charter one of the most modern VIP fleet or have their own aircraft managed personally and professionally. This includes exclusive aircraft management, sales and acquisitions, cabin design and completion as well as maintenance and upgrade services.

Operator

Dallah Albaraka Flight Operations

Contact: Faisal Haddadin

P.O. Box 11032 Amman 11110 H.K. of Jordan Tel: + 962 6 592 1966 / 592 9962 Fax: + 962 6 592 9006 Email: faisal.haddadin@gmail.com

Dallah Albarak Flight Operations located in Amman / Jordan manages and operates the following aircraft:

- BBJ 3
- BBJ 1
- Global Express
- Global 5000

Credit Suisse AG

Credit Suisse AG Aviation Finance SGIA P.O. Box 100 CH-8070 Zürich Switzerland Tel: + 41 4433 31111 Fax: + 41 4433 45245 Web: www.credit-suisse.com

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The centre of competence for the financing of corporate aircraft – business and private jets – is specialised in providing tailor-made financing solutions to a select number of high-net-worth individuals worldwide.

Affiliate

Dassault Falcon

78 Quai Marcel Dassault, Cedex 300, 92552 Saint-Cloud, France. Tel: + 33 1 47 11 88 68 Web: www.dassaultfalcon.com

Since the rollout of the first Falcon 20 in 1963, over 2,300 Falcon jets have been delivered. Dassault Falcon offers a range of six business jets from the twin-engine 3,350 nm large-cabin Falcon 2000S to its new flagship, the tri-engine 6,450 nm ultra-long-range Falcon 8X.

In addition to setting industry standards in aircraft design, parent company Dassault Aviation has also led the industry in the development of new flight systems such as the EASy Flight Deck and the Digital Flight Control System, the first fly-by-wire control system on a business jet - the Falcon 7X. Falcons are widely recognized for their performance and efficiency and are considered as the most economical and environmentally responsible jets in their class. Over 2,000 Falcons are currently in operation around the world. They are supported by a global network of 43 maintenance facilities and 13 spare parts depots all strategically located around the world.



Affiliate

Founding

DC Aviation AI-Futtaim LLC

Contact: Mr. Holger Osteimer

DC Aviation Al Futtaim LLC, PO Box 644314, Aviation City, Dubai World Central, Dubai, United Arab Emirates. Tel: + 971 4 870 1871 Email: sales@dc-aviation.cae Web: www.dc-aviation.ae

DC Aviation Al Futtaim LLC - Our passion for excellence.

The company is a joint venture between DC Aviation GmbH, one of the leading European business jet operations, with its headquarters in Stuttgart, Germany and the AI Futtaim Group of Companies, headquartered in Dubai.

DC Aviation AI-Futtaim offers Business jet charter, Aircraft Management, FBO & Maintenance services. The company is the only full service FBO with its own hangar and VIP lounge facility providing services to private and business jet travelers at the newly opened Dubai World Central at AI-Maktoum International Airport (AMIA).



Diamond Jet Detailing LLC

Concord Tower, 6th Floor Office 16, DMC Dubai P.O. Box 126732 United Arab Emirates Tel: + 971 4 454 9882 Fax: + 971 4 454 2310 Email: info@djd.ae Web: www.djd.ae

Diamond Jet Detailing is the UAE's Premier Eco-friendly full service private / business aircraft cleaning, detailing and cosmetic maintenance company. We currently operate throughout the entire UAE with new locations being opened across the MENA region in the near future to deliver our unrivalled aircraft interior and exterior cleaning, polishing, detailing, refurbishment, repair, restoration and medical grade virus & bacteria sanitization services, all delivered by our highly skilled UK trained technicians.

Delta Interior

Don Brambilla, 19 23844 Sirone Italy Tel: + 390 31357 4960 Fax: + 390 31357 2154 Email: matteobulletti@deltainterior.com Web: www.deltainterior.com

Advanced design and production technologies integrated with traditional craftsmanship make Delta Interior Design an accomplished representative of Italian Style in aircraft interior industry with years of experience servicing hundreds of fixed- and rotary-wing aircraft with creativity at the highest standards.

The company is Part 145 (C6) certificated with DOA and POA capability and is able and qualified to take full responsibility of the whole project and for total product support worldwide.

Affiliate

Donald H. Bunker and Associates

Al Reem Tower, Suite 1606 Al Maktoum Street Dubai 42717 United Arab Emirates Tel: + 971 4 222 9747 Fax: + 971 4 222 8767 Email: bunker@emirates.net.ae Web: www.dhbassociates.com

Donald H. Bunker and Associates is the only aviation law firm in the Arabian Gulf, and is one of the few firms specializing exclusively in aviation law in the world. We specialize in providing legal and financial advice in connection with the sale, purchase, finance and lease of new and used aircraft and related equipment and management/operating agreements for aircraft owners and operators. We are able to negotiate an entire legal, financial and technical package. Our mission is to provide prompt, comprehensive, affordable and practical legal and financial advice to individuals, corporations, airlines and related organizations around the world.

Dubai World Central

Contact: Shamma Al Marri

P.O. Box 282228 Jebel Ali Dubai United Arab Emirates Tel: + 971 4 814 1111 Fax: + 971 4 814 1366 Email: marketing@dwc.ae Web: www.dwc.ae

An integrated master plan designed around the aerotropolis concept (airport city), Dubai World Central is a forward-looking development that provides an economic platform for businesses to take advantage of dynamic markets and opportunities. 140 square kilometres of land have been designated to create a self-sustained economic zone around a world-class airport with the planned annual capacity of 12 million tonnes of cargo and 160 million passengers.

Supplier

EBAA - European Business Aviation Association

Avenue de Tervuren 13 A Box 5 - 1040 Bruxelles Belgium Tel: + 32 2 766 0070 Fax: + 32 2 768 1325 Email: info@ebaa.org Web: www.ebaa.org

The European Business Aviation Association (EBAA) was founded in 1977 to defend the interests of business aviation. Today, more than 800 business aviation companies (direct members or members of associate organisations) rely on the EBAA to protect their business interests. It is the only voice to represent business aviation among the European institutions. For more information, visit www.ebaa.org

Dynamic Link

402 Al Maha Building Al Dhiyafah Road P.O. Box 75560 Dubai United Arab Emirates Tel: + 971 4 345 6644 Fax: + 971 4 345 6688 Email: ops@dynamicavio.com Web: www.dynamicavio.com

Dynamic Link is a Dubai based company offering long standing experience in the aviation industry, serving both civil and defense requirements for the Middle East and parts of Asia. Our company represents numerous leading manufacturers, fuel suppliers, ground handlers, service providers (MRO) and spare parts distributors.

Dynamic Link's role is to assist airlines, cargo companies, charter planes, private jet operators and air forces worldwide to determine how to operate more efficiently and reduce costs without sacrificing quality or reputation.

Affiliate

EBAA France - European Business Aviation Council – France

BP. 10 Aéroport du Bourget 1445 Avenue de L'Europe 93352 Le Bourget Cedex France Tel: + 33 1 4934 2231 Fax: + 33 1 4934 3128 Email: ebaafrance@aol.com

Affiliate Association

Affiliate Association

EH Aviation Advisors AG

EH Aviation Advisors AG Mühlestiegstrasse 5 4125 Riehen (Basel-City) Switzerland Tel: + 41 61 535 6396 Mobile: + 41 79 647 1137 Email: eugen.hartl@aviation-advisors.ch

EH Aviation Advisors AG, a Swiss based company, is offering highly professional VVIP aircraft completion management and interior design service. A team of dedicated project managers, interior designers, aviation engineers, certification specialists as well as contracts and legal specialist provide a wide range of services to their VVIP customers. The goal of EHAA is to reduce project risk & time, and to facilitate a better end product by applying concurrent project management and design techniques.

Embraer Executive Jets

1111 General Aviation Dr. Melbourne Florida 32935 United States of America Tel: + 1 321 751 5050 Fax: + 1 321 255 9215 Web: www.embraerexecutivejets.com

Embraer has seven executive jets including the entry-level Phenom 100, light Phenom 300, mid-light Legacy 450, mid-size Legacy 500, super-mid-size Legacy 600, the large Legacy 650, and ultralarge Lineage 1000 jets. The cabin sizes and flexible ranges are well-suited to meet diverse demands, permitting greater work productivity and saving valuable travel time.

Affiliate

Emirates-CAE Flight Training

P.O. Box 111066 Dubai United Arab Emirates Tel: + 971 4 286 9119 Email: dubai-centre@cae.com Web: www.cae.com

Emirates-CAE Flight Training is jointly operated by Emirates Airline and CAE, and has 2 pilot training centres in Dubai.

ECFT Garhoud, founded in 2002, is approved by the European Aviation Safety Agency (EASA), the US Federal Aviation Administration (FAA) and UAE General Civil Aviation Authority (GCAA). More than 10,000 pilots and technicians a year train on a range of Airbus, Bell Helicopter, Boeing, Bombardier, Dassault, Gulfstream and Hawker Beechcraft aircraft types.

ECFT DSO currently offers a wide array of training services including A320 and B737NG type ratings, conversion courses, recurrent training, license renewals and revalidations for airlines or individuals.

Eva International Media Ltd

25 Burcott Road Purley Surrey CR8 4AD United Kingdom Tel: + 44 20 8668 9118 Web: www.expvipaviationint.com

The experienced team at Executive and VIP Aviation International has been launching and running the leading business aviation magazine with great success since 2007.

Executive and VIP Aviation International magazine with The Future of Business Aviation Conference and FBO and Executive Handling Expo continues to evolve, launch new products and explore media innovations.

Founding

Affiliate

Affiliate

Execujet Middle East

Dubai Airport Free Zone Dubai 32072 United Arab Emirates Tel: + 971 4 601 6300 Fax: + 971 4 299 7817 Email: marketing@execujet-me.com Web: www.execujet.com

ExecuJet manages 165 business jets worldwide under the most stringent safety standards. Its commercial fleet is operated under the regulatory umbrella of seven regional civil aviation issued air operating certificates. Headquartered in Zürich, Switzerland, ExecuJet has operations in six regions - Africa, Asia, Australasia, Europe, Latin America and the Middle East, embracing a workforce of over 900 experienced staff.

ExecuJet established a base in Dubai in 1999 and was one of the first independent companies to offer business aviation services in the region providing aircraft management, charter, flight operations, FBO and maintenance services.

Executive Aircraft Sales Limited (EAS)

Al Sila Tower 1, Level 20, Sowwah Square P.O. Box 32195 Abu Dhabi United Arab Emirates Tel: + 971 2667 5524 Fax: + 971 2667 5525 Email: info@execairsales.com Web: www.execairsales.com

EAS is a specialised aircraft sales and acquisition company providing client tailored aviation solutions to airlines, governments, corporations and high net worth individuals. EAS' activities are divided between those of commercial aviation and corporate/VIP segments. With offices in UAE, USA and Russia, we strive to provide our clients with an unparalleled access to aviation assets. MEBAA, NBAA and IS-BAE certified.

Founding

Executive Aircraft Services

General Aviation Terminal Rafic Hariri International Airport Beirut Lebanon Tel: + 961 162 8260 Fax: + 961 162 8261 Web: www.fly-executive.com

Executive Aircraft Services is the leading charter, aircraft management, and ground handling company based at Rafic Hariri International Airport Beirut. EAS owns and operates the latest handling equipment. The opening of its hangar and the acquisition of its AMO by the Lebanese CAA completes the list of aviation services offered by EAS and the expansion of its VIP lounge, making it the largest dedicated crew lounge in Beirut's General Aviation Terminal.

Executive Aviation Malta

Gate 1, Apron 3 General Aviation Park Malta Intl Airport, Luqa (LMML) Malta Tel: + 356 9990 0747 Email: ops@executivefbo.com Web: www.executivefbo.com

Executive Aviation Malta was specifically created to cater for executive jets and business aviation in general. We are leaders in executive jet operations and professional aircraft logistics in Malta.

Executive Aviation Malta is the only fully equipped and dedicated service provider with a fleet of in-house luxurious vehicles consisting of two executive BMWs and a Mercedes Viano limousine configured to attend to VIPs and VVIPs.

Operator

F & E Aerospace

Dubai Airport Free Zone Building 6EA, Suite 222 Dubai 371391 United Arab Emirates Tel: + 971 4 603 3300 Fax: + 971 4 701 7226 Email: event@dubai.aero Web: www.fegroup.ae



F&E Aerospace is a division of F&E, one of the most influential names in the aerospace industry's events sector, and which launched the very first Dubai Airshow in 1989, in conjunction with Dubai Civil Aviation Authority, Dubai Airports and the UAE Armed Forces.

Covering all aerospace-related events in the F&E portfolio, F&E Aerospace has a long-standing relationship with the global aerospace industry, an in-depth market knowledge and a reputation for delivering event excellence. F&E is dedicated to facilitating relationships between buyers and sellers helping them to do business in the Middle East efficiently and profitably.

F&E focuses on producing events in the Middle East and the company's portfolio of events includes Aircraft Interiors Middle East (AIME) - 2-3 February 2015, MEBAA Morocco – 1-2 September 2015, MEBAA Show -6-8 December 2016, Gulf Aviation Training Event (GATE) 9-10 November 2015, and our flagship event the Dubai Airshow, 08-12 November 2015.

Founding

Falcon Aviation Services

P.O. Box 44044 Abu Dhabi United Arab Emirates Tel: + 971 2 444 8866 Fax: + 971 2 666 0550 Email: salem.al-kayoumi@falconaviation.ae Web: www.falconaviation.ae

Falcon Aviation Services is a leading corporate jet and helicopter service providers in the ME.

Operational and support services also include Aircraft Management, MRO, Oil & Gas Aviation Support, Aircraft Solutions and Aerospace.

Falcon Aerospace will be a state-of-the art facility and the region's first VVIP aircraft completion center.

The hanger facility which will be completed by mid 2015 is being built at DWC.

Falcon is also an authorized Service Centre for Embraer and Eurocopter.

FAI rent-a-jet AG (dba Flight Ambulance International)

Flughafenstrasse 124, Nuremberg 90411, Germany Tel: + 49 911 36009-0 Fax: + 49 911 36009-59 Email: info@fai.ag Web: www.rent-a-jet.de

FAI rent-a-jet AG is operating one of Europe's largest fleet of business jets consisting of 15 Learjets (2 x LJ 35 A-R/X, 1 x LJ 40 XR, 4 x LJ 55 + 8 x LJ 60), 4 CL 604 and 3 Global Express, totaling the fleet to 22 aircraft. 5 Learjets (2 x LJ 55 + 3 x LJ 60) are based in Africa, supporting peace-keeping missions, another 6 Learjets (2 x LJ 35, 2 x LJ 55, 2 x LJ 60) + 2 CL 604 are operating in dedicated Air Ambulance Service out of FAI's homebase Nuremberg/Germany while 3 Global Express, 1 CL 604 together with 1 Learjet 40 and 1 Learjet 60 are operating in dedicated VIP-Charter. FAI has also its own in-house Maintenance certified according EASA Part 145 as well as an in-house TRTO combined with FAI's EU-OPS 1 AOC. Beside VIP-Charter, Air Ambulance and Maintenance Service, FAI also offers turnkey Aircraft Management for aircraft owners as well as CAMO+ Services.



Operator

Flightserve UK Ltd

22 Grafton Street Mayfair, London W1S 4EX United Kingdom Tel: + 44 307 060 9320 Fax: + 44 203 006 8854 Email: journey@flightserveuk.com Web: www.flightserveuk.com

Founded in 2006 as a medical charter company to transport time critical donor organs Europe wide and patients in need of treatment globally, Flightserve extended its services to Private Jet Charter, recognising the need for a company who could combine a trusted, discrete and dependable service with value. Headquartered in Mayfair, London and operating globally, Flightserve is now expanding its services to include sales and acquisitions and aircraft management.

Founding

Affiliate

Fokker Services B.V

Hoeksteen 40, 2132 MS Hoofddorp, The Netherlands Tel: + 31 (0) 88 6280 299 Fax: + 31 (0) 88 6280 111 Email: Pauline.vanniekerken@fokker.com Web: www.fokkerservices.com / www.flyfokker.com / www.myfokkerfleet.com

Fokker Services has earned its position as unique and valuable partner for the global aerospace industry, supporting various aircraft types including from Fokker (as TC holder), Bombardier, Boeing and Airbus. Capabilities include component repair, engineering and documentation support and airframe maintenance, modifications, conversion and completion capabilities. In the field of aircraft interiors Fokker Services has the skills, knowledge and facilities in place to deliver full support to aircraft operators and owners. Fokker Services operates a VIP aircraft conversion & completion facility, which offers turnkey solutions for VIP aircraft operators. Fokker Services is an Airbus Approved Outfitter.

Whether you need a comprehensive set of aircraft support services, or a tailored package of Component MRO services, Fokker Services has all the skills and capabilities in house to exceed your requirements.

Fokker Services is part of Fokker Technologies, a group of highly specialized aerospace companies.



Affiliate

GBAA – German Business Aviation Association

Duisburger Str. 4 10707 Berlin Germany Tel: + 49 30 8329007 Fax + 49 30 8329007 Web: www.gbaa.de

The German Business Aviation Association (GBAA) was founded in Wolfsburg on 5th June 1985.

GBAA has set itself the task of representing and promoting the interests of business aviation both nationally and internationally.

There is a special focus on co-operation with and financial support of the IBAC which has a seat at the ICAO.

GBAA is a member of the EBAA (European Business Aviation Association).

Chairman of the GBAA is Peter Gatz, Private Wings GmbH.

GainJet Aviation S.A

Vouliagmenis Avenue & 1 Themistokleous St. Glyfada / Athens 16674 Greece Tel: + 30 21 0963 6101 Fax: + 30 21 0963 6845 Email: sales@gainjet.com Web: www.gainjet.com

GainJet is a leading worldwide private jet charter operator and management company based in Athens, with a sales office in London and a global network of strategic partners. Our large and versatile fleet offers a wide range of VIP aircraft positioned throughout Europe and the Middle-East. Whatever your travel requirements may be, we fly you wherever you want, whenever you want. We offer a customized travel experience tailored to your specific needs. So enjoy your flight and let us take care of the rest.

Affiliate

Go Aviation Middle East

Dubai Airport Free Zone Building 4WB, Office 653 Dubai PO Box 372002 United Arab Emirates Tel: + 971 56 343 7869 Emai: scheduling@goaviation.ae Web: www.goaviation.ae

Go Aviation Middle East is headquartered in Dubai with bases at Dubai International Airport and Al Maktoum International Airport. We are a full service aircraft appearance company providing light interior cleaning to complete paint and brightwork restoration and polishing.

Our management and operations team moved to the UAE from the United States. Our experience includes working with VVIP clients, fractional ownership companies, narrow and wide body aircraft and some of the world's largest airlines.

Greenpoint Technologies, Inc

4600 Carillon Point Kirkland WA 98033 United States of America Tel: + 1 425 828 2777 Fax: + 1 425 827 6105 Web: www.greenpnt.com

Greenpoint Technologies specializes in VIP and Head-of-State interior completions for Boeing Business Jets. Greenpoint is recognized worldwide for technologically advanced innovation, with in-house expertise spanning conceptual development through detailed design, engineering, certification, manufacturing and installation. Greenpoint also provides the 747-8 VIP Aeroloft[®] and Aerolift[™] products. The company is part of Zodiac Aerospace, a world leader in aerospace equipment and systems for commercial, regional and business aircraft, as well as helicopters and space applications.

Affiliate

Gulfstream Aerospace Corporation

Gulfstream International Corporation Concord Tower, Dubai Media City Dubai, UAE Tel: + 971 50 653 5258 Email: allan.stanton@gulfstream.com Web: www.gulfstream.com

Gulfstream Aerospace Corporation designs, develops, manufactures, markets, services and supports the world's most technologically advanced business jet. Gulfstream has produced more than 2,200 aircraft for customers around the world since 1958. To meet the diverse transportation needs of the future, Gulfstream offers a comprehensive fleet of aircraft, comprising the Gulfstream G150[™], the Gulfstream G280[™], the Gulfstream G450[™], the Gulfstream G550[™], the Gulfstream G500[™], the Gulfstream G600[™], the Gulfstream G650[™] and the Gulfstream G650ER[™]. Gulfstream also offers aircraft ownership services via Gulfstream Pre-Owned Aircraft Sales[™]. The company employs more than 15,000 people at 12 major locations.



Founding

Gulf Centre for Aviation Studies

GCAS – Gulf Centre for Aviation Studies Al Bateen Executive Airport P.O. Box 94449 Abu Dhabi United Arab Emirates Tel: + 971 2 494 2355 Fax: + 971 2 494 2366 Email: training@gcas.ae Web: www.gcas.ae

The Gulf Centre for Aviation Studies (GCAS) is a centre of excellence for airport and aviation training based in Abu Dhabi

GCAS is an ACI Global Training Hub, an ICAO Regional Training Centre of Excellence (RTCE) and TRAINAIR PLUS member, an IATA training partner and a JAA-TO regional partner.

With its unique location at the heart of a dynamic region, combined with global expertise & partnerships, GCAS offers the very best in airport & aviation training.

Supplier

HADID International Services

WW3, Dubai Airport Freezone PO Box 54508, Dubai, UAE Tel: + 971 4 299 7777 Fax: + 971 4 299 7700 Email: info@hadid.aero Website: www.hadid.aero



HADID International Services, headquartered in Dubai, UAE provides a diverse range of flight support services such as Permits, Handling, Fueling, Charter, Flight Planning, and Concierge services worldwide.

Pioneering in flight support for over 30 years, HADID's focus has turned to a higher level of support services and extra care for business aviation flights. Today its services are requested over 3000 times a day worldwide.

Having an international leading network of local flight support supervisory agents covering each and every airport enables HADID to provide expertise on the ground supplying exceptional services delivery with absolute reliability on time every time.

HADID's 24/7 team of qualified and certified dispatchers use high tech industry-standard flight systems to secure the smoothest flight planning and tracking.

Professional employees are the true key to HADID's success, for us vision means thinking outside the box, attention to detail, and understanding flexibility.

Fly the future you want with HADID International Services.

Head of State Operator

Queen Alia International Airport P.O. Box 39106 Amman 11104 Kingdom of Jordan

Operator

IBAA - Italian Business Aviation Association

Aviazione 65 20138 Milano Linate Italy Tel: + 39 02 7611 0952 Fax: + 39 02 7611 1110 Email: segreteria@ibaa.it Web: www.ibaa.it

IBAA mission is the social development of business aviation.

Honeywell Aerospace

Office 201, Building 2, Emaar Business Park Dubai, 232362, United Arab Emirates Tel: + 971 4 450 5800 Fax: + 971 4 450 5900 Email: aerospaceME@honeywell.com Web: www.aerospace.honeywell.com

For more than 100 years, Honeywell Aerospace has been a pioneer in aerospace innovation. Each day, aircraft with Honeywell technologies fly across our skies. In fact, our products and solutions can be found on virtually every type of commercial airliner, business and general aviation aircraft, military and space vehicle in operation today.

Honeywell understands business aviation and manufacturers and operators across the Middle East have come to rely on us to deliver innovative new products and technologies to address their operational needs. Our business aviation solutions include the latest advancements in propulsion systems, APU's, environmental controls, integrated avionics, touch screen cockpit displays, advanced safety solutions, cabin managements systems and aircraft lighting as well as the latest satcom solutions for seamless global connectivity. From takeoff to landing, Honeywell solutions help business aviation operators across the Middle East realize the Possibilities of Flight. Made Easy.

For further information visit http://www.honeywellbusinessaviation.com



Supplier

Supplier

ICF SH&E

90 Park Avenue Floor 27 New York 10016 United States of America Tel: + 1 212 656 9299 Email: Louis.Sorrentino@icfi.com Web: www.ICFI.com/aviation

ICF SH&E is the most experienced global aviation consulting firm providing advisory and implementation services to airlines, airports, charter and fractional operators, fixed base operators, flight departments, governments, civil aviation authorities, international agencies, manufacturers, MROs, and investors.

A trusted partner since 1963 and proud supporter of MEBAA and Business and Commercial Aviation.

Affiliate Association

ImperialJet Middle East

Markazia Building, 7th Floor Riad El Solh Square Solidere Beirut 114502 Lebanon Tel: + 961 1 999 677 (24/7) Email: fly@imperial-jet.com Web: www.imperial-jet.com

ImperialJet are a long-established global provider of tailored private jet charter, leasing, aircraft management and ownership solutions. As the holder of a German Air Operators Certificate and with two decades of proven experience, our industry-leading team is wellplaced to ensure the highest level of safety, quality and service. Our modern and diverse fleet of aircraft is strategically based throughout the Middle East, Europe and Russia and can be airborne within 2 hours of your call.

Operator

JBAA – Japan Business Aviation Association

c/o Marubeni Aerospace Corporation, Tokyo Takarazuka Bldg. 10F 1-1-3 Yurakucho, Chiyoda-ku Tokyo 100-0006 Japan Tel: + 81 3 5157-7525 Fax: + 81 3 5157-7510 Email: webmaster@jbaa.org Web: www.jbaa.org

Japan Business Aviation Association (JBAA) was established in May, 1996. Up until the present, we have contributed the popularization of business aviation and the improvement of flight access to Japan with our members cooperation.

Izy Air Ltd

Carlin Concept Umaru MusaYar Adua Road Airport Express Road Anuja Nigeria Tel: + 234 816 207 3001 Fax: + 234 705 299 9914 Email: info@izyair.com Web: www.izyair.com

Our aim at Izy Air is simple: to offer our customers the finest private jet charter and management service, in the whole of Africa. At Izy Air, we promise to deliver a quality of service unmatched in the industry. With our highly trained staff, and access to the world's most elite services, we guarantee a process that transcends luxury and convenience.

Affiliate

Jeppesen UK Limited Middle East

Dubai Airport Free Zone Building 4E, 6th Floor, Block B Boeing Offices Dubai P.O. Box 54289 United Arab Emirates Tel: + 971 4 213 4850 Fax: + 971 4 299 7052 Email: tawfic.hammad@jeppesen.com Web: www.jeppesen.com

For 80 years, Jeppesen has made it possible for pilots and their passengers to safely and efficiently reach their destinations. Today, this pioneering spirit continues as Jeppesen delivers transformative information and optimization solutions to improve the efficiency of air and sea operations around the globe. Jeppesen is a Boeing subsidiary and part of the Digital Aviation business unit within Boeing Commercial Aviation Services.

Affiliate Association

Jet Aviation

Aeschengraben 6 4056 Basel Switzerland Tel: + 41 58 158 8888 Fax: + 41 58 158 8889 Email: jmgt@jetaviation.ch Web: www.jetaviation.com

Jet Aviation, a wholly owned subsidiary of General Dynamics (NYSE: GD), was founded in Switzerland in 1967 and is one of the leading business aviation services companies in the world. Close to 4'500 employees cater to client needs from more than 20 facilities throughout the Middle East including Dammam, Dubai, Jeddah, Medina, Riyadh and Europe, Asia, North and South America. The company provides maintenance, completions and refurbishment, FBO, along with aircraft management, charter and staffing services.

Founding

Jet Support Services, Inc (JSSI)

Office Number: 6WA-129 Dubai Airport Free Zone Dubai P.O. Box 293716 United Arab Emirates Tel: + 971 4 260 2727 Fax: + 971 4 260 2729 Email: info@jetsupport.com Web: www.jetsupport.com

JSSI is the largest independent provider of hourly cost maintenance programs for aircraft engines, airframes and APUs. We offer comprehensive, flexible and affordable financial programs for managing the often unpredictable costs of operating and maintaining turbine-powered aircraft, including jets, turbo-props and helicopters. JSSI serves customers globally and utilizes a worldwide team of certified Technical Advisors.

Jet Energy Technology

DMCC

P.O. Box 340505 Dubai United Arab Emirates Tel: + 971 50 698 4598 Fax: + 41 4 4355 3192 Web: www.jetenergy.net

Affiliate

Jetex Flight Support

Building 6EA, DAFZ Dubai P.O. Box 54698 United Arab Emirates Tel: + 971 4 212 4000 Fax: + 971 4 212 4044 Email: info@jetex.com Web: www.jetex.com

Jetex has established itself as one of the most prominent flight support brands in the aviation industry today, providing safe and reliable services on a global scale. With experience in tending to some of the highest profile clients, our international teams provide dedicated round-the-clock service to and from any location. Understanding the challenges you may be faced with, no detail is too small and no destination too remote for Jetex experts to ensure trips are a success time after time.

JETGALA MAGAZINE

120 Lower Delta Road #13-11 Cendex Centre Singapore 169208 Republic of Singapore Tel: + 65 6273 0620 Fax: + 65 6273 0632 Email: business@oriental-publishing.com Web: www.jetgala.com

JETGALA is Asia-Pacific's only dedicated private jet consumer magazine. It offers focused content and a highly targeted circulation, which reaches the top achievers in the world's fastestgrowing executive jet region. JETGALA not only reaches current jet users, but addresses an audience with the means and potential for regular executive jet use.

Affiliate

Luftansa Technik AG

Weg beim Jaeger 193 Hamburg D-22335 Germany Tel: + 49 5070 5553 Fax: + 49 5070 5605 Email: marketing.sales@lht.dlh.de Web: www.lufthansa-technik.com

Lufthansa Technik is the leading single-source provider for VIP, corporate, governmental and special mission aircraft. With a unique portfolio, the company offers the complete bandwidth of services covering highly customised state-of-the-art interior completions, modifications engineering services and maintenance solutions in which it takes care of the entire life cycle of the aircraft. With its worldwide network every kind of operational, technical and logistical support can be offered anywhere in the world at any time. The company is officially authorised by Airbus and Boeing for all maintenance, refurbishment and completion activities. Based on the experience gained over 60 years, the company has carried out more than 90 full completions by owners and operators of VIP, corporate, government and special mission aircraft throughout the world.



Founding

Kenyon International Emergency Services, Inc.

Middle East & Africa Regional Office Regus Center, Azarieh – Block 3 5th Floor Riad El Solh Beirut 11-503 Lebanon Tel: + 961 1 964 517 Fax: + 961 1 964 501 Email: kenyonmiddleeast@kenyoninternational.com Web: www.kenyoninternational.com

Kenyon is an international leader in disaster management, providing pre-incident crisis planning and post emergency response services on behalf of the world's foremost companies. Kenyon remains the only firm in its business with over a hundred year history, comprehensive resources, and experience in every type of mass fatality accident including aviation disasters, natural disasters, war, and terrorist attacks. Kenyon Operations Services provide experienced, specialized personnel and equipment to respond to incidents. Kenyon Consulting Services provide incidentexperienced planning and training specialists to develop and implement crisis management systems. Headquarters in America, it has offices in London, Beirut, and Dominican Republic.

Supplier

Lux Media Middle FZ-LLC (Altitudes Arabia, Europe & Russia)

P.O. Box 502837 Building 8 Dubai Media City Tel: + 971 4 422 0970 Fax: + 971 4 429 0946 Email: s.richomme@luxmedia-me.com Web: www.luxmediagroup.com

Altitudes Arabia was launched in July 2008 as a bi-monthly publication and an extension to the successful Altitudes Europe which debuted in September 2003.

The Middle East is a market that requires specialists' understanding of the regional expectations and behaviour of its business aviation users.

Published in the English language, Altitudes Arabia has developed a solid reputation for its accessible style and editorial integrity, which has made it the Gulf's leading business aviation luxury publication.

Affiliate



Choosing the right partner means

Accessibility

UAS is strategically positioned worldwide with headquarters in Houston, Johannesburg, Hong Kong and Dubai with a local presence in 37 countries and alliances in over 100 more.



Join Our Global Family Network

Imagine a brand that is used over 3000 times a day worldwide 24/7. A brand that creates a better aviation future every day. A brand that has been helping connect business, people and places for over 30 years. Providing you with a diverse range of flight support services such as Permits, Handling, Fueling, Charter, Flight Planning, and Concierge services wherever you are. This is HADID International Services. Join us today and Fly the Future you want.



Macair Flight Support

Macair Flight Support Erbil International Airport Erbil Iraq Tel: + 964 750 386 2363 Email: ops@macairinc.com Web: www.macairinc.com

Customer-centered organization. World-class hospitality. Flawless aircraft handling. That's Macair Flight Support ... exclusive Fixed Base Operations at Erbil International Airport.

Supplier

Malakut Insurance Brokers

Office 2602, Indigo Icon Tower Jumeirah Lakes Towers Dubai 450644 United Arab Emirates Tel: + 971 4 395 8812 Fax: + 971 4 395 8813 Email: malakut@malakut.ae Web: www.malakut.com

Malakut Insurance Brokers is an insurance and reinsurance brokerage entity which has provided services worldwide for over 13 years, with 1 of our 8 offices conveniently located in Dubai to allow us to be within easy reach of all MEA clients.

By being a full-service broker, Malakut provides both direct insurance and reinsurance services for all types of Aviation Insurance.

Our team have strong relationships with world-wide insurance markets which allow them to find the widest, suitable coverage for your company.

We pride ourselves in helping our clients to reduce their insurance costs and be more competitive on the market.

Supplier

Mach Flight Support FZE

Dubai Airport Free Zone Building 5WB, Office 441 Dubai P.O. Box 98861 United Arab Emirates Tel: + 971 4 260 2331 Fax: + 971 4 260 2332 Email: ops@machflightsupport.com Web: www.machflightsupport.com

The Mach Flight Support team has an extensive background in both flight support and charter brokerage. We respect our commitments to our clients and work hard to deliver our services on time, with precision and to the utmost satisfaction. At Mach Flight Support we take care of our clients on an individual basis and consult with them closely to meet their requirements and achieve their goals. Service excellence is our goal.

Supplier

MBM AGI LLC

Al Habtoor Business Tower 28th Floor, Suite 1 Dubai United Arab Emirates Tel: + 971 4 447 5722 Fax: + 971 4 447 5721 Email: info@agi-trading.com Web: www.agi-trading.com

MBM AGI LLC, is the Managing Company of MBM AGI Group Of Companies. The company is specialized in the Consulting and Trading business for its partners and is incorporated in the Emirate of Dubai, United Arab Emirates. The company was founded in 2010 and has ever since strived for excellence in the Trading and Consulting business. With deliberate research and market awareness, MBM AGI has succeeded to acquire not only the attention but also the respect and consideration of the local market and Partners. Through those constant efforts MBM AGI has established a network in the Middle-East which is extensive.

MedAire (APMEA) Pte.Ltd

331 North Bridge Road #17-00 Odeon Towers 188720 Singapore Tel: + 65 6330 9534 Email: info-asiapacific@medsire.com Web: www.medaire.com

MedAire delivers medical and travel safety services around the world. Flight departments rely on MedAire advice and assistance 24/7/365, as well as medical training and onboard medical equipment. Visit MedAire to see MedAire Trip Ready, the first app focused on health and travel safety for pilots, flight departments and executives.

Midroc Aviation

P.O. Box 6549 Jeddah 21452 Kingdom of Saudi Arabia Tel: + 966 2 651 9223 Fax: + 966 2 651 5991 Email: Johnny-antoon@msn.com

Corporate Aviation Department based in Jeddah, KSA.

Supplier

NasJet

P.O. Box 305161 Riyadh 11361 Saudi Arabia 1st Floor, Al Salam Centre Muhammad ibn AbdulAziz (Tahliya) Street Olaya, Riyadh, Saudi Arabia Tel: + 966 (0) 11 217 2070 Email: sales@nasjet.com.sa Web: www.nasjet.com.sa

NasJet is the largest business aviation operator in the Middle East. Launched in 1999 in Riyadh, Saudi Arabia, the company manages a fleet of 67 fixed-wing aircraft with an insured value in excess of \$2 billion. NasJet provides a full range of services including Aircraft Sales, Advisory, Aircraft Management, Flight Support, Fractional, Charter and Fixed-Base Operations. The company's core fleet is comprised of Airbus, BBJ, Gulfstream (largest fleet in the Middle East), and Hawker aircraft.

NBAA - National Business Aviation Association

1200 Eighteenth St. NW, Suite 400 Washington, DC 20036-2527 United States of America Tel: +1 202 783 9000 Fax: +1 202 331 8364 Email: info@nbaa.org Web: www.nbaa.org

Founding in 1947 and based in Washington, DC, the National Business Aviation Association (NBAA) is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful.

Founding

Affiliate Association

NEXUS Flight Operations Services

6989 Abi Abbas Al Qadsi – Al Basatin Unit No. 6 Jeddah 23719 – 4232 Kingdom of Saudi Arabia Tel: + 966 12 215 2090 Fax: + 966 12 215 2070 Contact: Abdullah M. Al-Sayed Email: info@nexus.aero Web: www.nexus.aero

NEXUS Flight Operations Services, in our 5th year since inception by some of the most experienced business aviation professionals in the Middle East.

Providing Flight Operations Services to Corporate & Business Aviation and Commercial Airlines from our Flight Operation Centers in Jeddah Saudi Arabia, Bahrain, Mumbai India, Monaco Europe, Kigali Rwanda, and Pennsylvania USA.

The foundation of NEXUS vision is superior technical experience, highest level of customer commitment, excellent work ethic and customer centric attitude.



Operator

OMAN INSURANCE COMPANY (P.S.C.)

Al Maktoum Street I Maktoum Building No. 24 Opp. Metropolitan Palace Hotel P.O. Box 5209, Dubai United Arab Emirates Tel: + 971 4 233 7777 Fax: + 971 4 233 7775 Email: lorenzo.signor@tameen.ae Web: www.tameen.ae

Oman Insurance Company (OIC) was established in 1975 and is one of the leading insurance providers in the Middle East. OIC has operations across all Emirates in the UAE as well as in Oman, Qatar and a subsidiary in Turkey. OIC also owns a medical thirdparty administrator in Iraq.

OIC provides a wide range of insurance solutions for individuals and corporate clients in Life, Medical, General insurance. With a gross written premium of AED 2.9 billion, OIC is rated 'A' Excellent Stable Outlook by AM Best and 'A-' Positive Outlook by Standard & Poor's.

Additional information about Oman Insurance Company can be found at www.tameen.ae

NOFA Aviation

#20 Al-Namer Street North Al-Maather Area P.O. Box 14412 Riyadh 11424 Kingdom of Saudi Arabia Tel: + 966 1482 5068 Fax: + 966 1482 7190 Web: www.nofa-aviation.com

Operator

Omar R. Husseini

23 Sour Street, Abdoun Amman PO Box 141430 Jordan 11814 Tel: + 966 508920242 / + 962 79 717 0 777 Email: info@levantaeronautics.com Web: www.levantaeronautics.com

Omar R. Husseini at Levant Aeronautics provides aviation maintenance training in basic, aircraft type and regulatory subjects to airlines, aircraft maintenance organisations and private aircraft operators. The training is conducted using FAR/EASA compliant curricula and is delivered at the Customer's premises.

Omar R. Husseini at Levant Aeronautics also provides manpower solutions for interim vacancies, contract training positions, and consulting assignments in the Gulf and Middle East region.

Supplier

Individual Professional

OnAir

OnAir headquaters 71 Avenue Louis Casaï P.O. Box 42/1216 Geneva Switzerland Tel: + 41 22 747 6459 Fax: + 41 22 747 6852 Email: Aurelie.Branchereau@onair.aero Web: www.onair.aero

OnAir is one of the very few inflight connectivity providers in business aviation which offers inflight mobile phone connectivity as well as inflight Wi-Fi.

We have a range of onboard systems suitable for all types of aircraft, big or small. We provide flexible, lightweight solutions that are small and easy to integrate as linefit or retrofit during scheduled MRO.

Extensive experience providing our services on commercial airlines makes OnAir the dependable choice, whatever your needs.

OPMAS ApS

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Operator

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Maly Kakovinsky 4 121099 Moscow Russia Tel: + 7 909 635 4981 Fax: + 7 495 989 2012 Email: as@rubaa.ru Web: www.rubaa.ru

The Russian United Business Aviation Association (RUBAA) was formed in July 2009 through merger of the Russian Business Aviation Association (RBAA) and the United Business Aviation Association (UBAA). As of now about 68 entities representing the full spectrum of the Russian business aviation market are full and associate members of the association.

The purpose of RUBAA is to coordinate its members' entrepreneurial activities, to represent and protect their common business interests and to develop the business aviation industry in Russia.

Founding

Affiliate Association

SAAD Air Ltd

SAAD Air P.O. Box 1658 Manama Kingdom of Bahrain Tel: + 973 17 369291 Fax: + 973 17 369167 Email: ysdaoud@saadairlimited.com

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Sabena Technics

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San Marino Aircraft Registry

Via Consiglio dei Sessanta, 99 47891 Dogana, Republic of San Marino Tel: + 378 0549 941539 Fax: + 378 0549 9700525 Email: info@smar.aero Web: www.smar.aero

The Republic of San Marino is a landlocked sovereign State located in the northeastern part of the Italian peninsula.

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Affiliate

Saudi Aerospace Engineering Industries

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Supplier

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Founding

SKA Energy FZE

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Sukhoi Civil Aircraft Company

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The Company's shareholders are the Sukhoi Holding owing 75% -1 share and the Italian Alenia Aermacchi, a Finmeccanica Company, holding 25% + 1 share since April 2009. Sukhoi Civil Aircraft was founded in 2000 to develop new regional aircraft projects. Headquartered in Moscow, the Company enjoys several production branches seated in the cities of Komsomolsk-on-Amur, Novosibirsk and Voronezh. Today the company employs over 2,000 people. Currently the Company's major project is Sukhoi Superjet 100.

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Contact: Jorge Colindres-Marinakis

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3

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Wallan Aviation

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WALLAN (A) AVIATION

Founding

World Food Programme – Regional Aviation Safety Office

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