

The international guide to business airports, FBOs and ground support partners

# Business Airport

I N T E R N A T I O N A L

July 2017

*Discover new partners, routes and destinations*

## PROFIT PARTNERS

FBOs are teaming up with luxury brands to boost revenue and enhance customer service

### **In this issue**

#### **Expansion projects:**

How to win over stakeholders and secure funding

#### **Electric aircraft:**

What will battery-powered hybrids mean for airport infrastructure?

Location focus: Canada | Special focus: Fuel  
City guide: Barcelona | Interview: Bangor Airport, USA



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# Welcome

There are many conflicting reports and analyses of the state of business aviation flying around the internet and trade and mainstream media – so much so, it can be difficult to get an accurate read on whether it is a good time to be in the sector or not.

Admittedly, *Business Airport International* is not immune to these mixed messages. In this issue's Arrivals Lounge there's a report on skills shortages, but there's also news that reflects a sector with a bright future. We have reports of new airports, new aircraft technology and new ways for FBOs to diversify their business in order to increase revenues.

Another way to increase profits is discussed in-depth in our cover story (p36), which reveals how FBOs can partner and raise sponsorship with high-end luxury brands. Then, once you have grown as much as you can and it's time to build that new hangar or VIP terminal, what's the best way to approach winning over local stakeholders and securing finance? The feature on page 50 includes some great insights from experts and managers who have recently gone through the airport expansion process themselves, to make it easier for you when you want to start building.

Elsewhere we look at some of the well-established parts of business aviation. The feature on fuel (p22) reveals how suppliers and FBOs are seeking to differentiate themselves through digitization and improvements to customer service. We also analyze the latest developments in maintenance (p44), covering not

just the latest technologies but also ideas lurking behind the hangar door.

BAI has also been busy on both sides of the Atlantic recently. In June we visited Maine's Bangor Airport, and the resulting feature on page 62 describes how this international airport has capitalized on its geographical location as the business aviation gateway to the USA, to stay in a prominent position in a busy market. Meanwhile, over in Europe, the EBACE event in May was well attended, with numerous busy and large stands. The diverse and friendly nature of the European business aviation market was plain to see to anyone who ventured to the convention halls of Geneva.

So, is business aviation having a resurgence or not? I don't have a definitive, global answer, but one thing's for sure: things probably aren't as good as they used to be. But we all know they never are, don't we?

Nostalgia is a powerful and sneaky emotion. The industry should be self-aware enough to realize this, but maybe not so self-aware that it impairs its ability to promote itself. It should be vocal about its bright future and benefits and not be restricted by timidity about the more ostentatious aspects of its business – whether that's to the high-net-worth individuals who use its services, or to the young talent it needs to build its future.

**Ben Sampson, editor**  
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***"The industry should be vocal about its bright future and not be restricted by timidity about its more ostentatious aspects."***

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## AMBITIOUS PLAN WILL DEVELOP THE RUNWAY AT ALBENGA, ITALY, INTO **RIVIERA AIRPORT** – A MODERN BASE FOR JET OWNERS AND OPERATORS IN THE REGION

**A** regional airport in the western corner of Italy, which recently became the first airport in the country to be fully privatized, is planning a massive expansion program to cater for the growing business and private aviation market in the region.

The development plans were publicized for the first time at the EBACE event in Geneva, Switzerland, earlier this year. Clemens Toussaint, chairman of Aeropolis, the company behind the project, said, “The level of interest at EBACE was surprising. The industry was fascinated by the airport at Albenga and its closeness to the Italian and French Riviera, where there is such a high density of private aviation in the summer months.”

Toussaint said a substantial, three-stage development program is planned to start during the winter of this year. The airport will also be rebranded to become Riviera Airport. “This is the first full privatization of an airport in Italy,” he said.

### **Vital statistics**

**Location:** Riviera Airport

**Operating hours:**

8:30am–6:30pm

**Runway length:** 4,690ft  
(1,430m)

**Fuel:** Jet/Avgas



Image courtesy of Open Building Re



## Piaggio Aerospace partnership

Next to the airport at Albenga lies Piaggio Aerospace, where more than 1,000 employees design, develop and make the company's business aircraft, including the Avanti turboprop. The company is a partner in the project to redevelop the airport for business and general aviation users.

Renato Vaghi, CEO of Piaggio Aerospace, said, "Riviera Airport is one of the initiatives aimed at creating value for this area of the Italian Riviera, which adds to the creation of the center of excellence where Piaggio Aerospace operates."

"The attraction of new elite customers will favor local businesses and tourism, as well as the connection with Mediterranean strategic regions. We are delighted to provide the project with the visibility it deserves and we are ready to assess future potential partnerships with Riviera Airport."

Clemens Toussaint, chairman of Aeropolis, said, "Riviera Airport offers our clients the privilege of flying depending entirely on their own schedule, and it represents a competitive alternative in the existing mature market. Riviera Airport could also be a strategic option for the Principality of Monaco, which has no runway of its own. A binational airport, managed jointly by the Italian State and by the Principality of Monaco, would be a unique experience for both countries and would create extraordinary business opportunities in the entire area."

**"Our guests will be able to enjoy the freedom and liberty of private aviation"**

Clemens Toussaint, chairman, Aeropolis

"We plan to build a premier installation that serves the needs of the clientele and the industry. I'm not worried about attracting clients – there is a lot of potential to set up more infrastructure for business and general aviation here."

The experience passengers have at commercial airports is only going to get worse in the region, and if you can afford it, the service and experience you receive in the air should be reflected by the service and experience you get on the ground," he said.

The airport at Albenga is located close to the western border of Italy, near Monaco. It handled 3,000 aircraft movements in 2016. Cannes Airport, which is less than 150km away from Albenga, handled around 30,000 business aircraft movements last year.

There has been an airport in Albenga since 1922. It has been a military airport, as well as the region's main tourist airport, and was previously called Riviera Airport during the 1960s. Until recently it was run by local government.

Phase one of the development will start with ground work to extend the runway and apron and replace the existing terminal with a new building. The second phase is planned to include the construction of a 215,300ft<sup>2</sup> (20,000m<sup>2</sup>) hangar to accommodate a major charter operator or jet management company, substantial maintenance provision, office space and a helipad. "There's a real need for extra maintenance

Main: A new terminal is to be built to better meet the expectations of customers

Left: The existing Albenga airport is ideally situated for Italian and French Riviera access



Left and below:  
The existing  
runway and apron  
at Albenga will be  
extended as part of  
the redevelopment

***“The region has changed  
from a French and Italian  
province into a European  
region where people live  
and work year-round”***

Clemens Toussaint, chairman, Aeropolis



facilities in the region during the summer, so a large full-service maintenance site is an important part of the plans,” said Toussaint.

The third phase plans are for more extensive VIP and executive club facilities at the airport and a crew hotel. Further down the line, there may be opportunities to work with Piaggio Aerospace (see sidebar), which is located next to the airport, with training and sales facilities, added Toussaint.

According to Toussaint, the Riviera is the third most popular destination in Europe for private aviation behind London and Paris and has changed from being a leisure destination to a place where people live and can work the whole year. “This region has changed in the past 30 years from a French and Italian province into a European region. It’s now the Gold Coast of Europe. The infrastructure has developed to northern European standards to let people live here all year round,” he said. “But the real key is the expansion at Nice Airport. There are plans to more than double passenger traffic to 30 million there, which affects Cannes. You are working with slots at both airports, and they are getting much denser.

“At Albenga, you can come and go as you want. We have enough interesting qualities at a fraction of the price of the French airports. Further development of the site will enable us to offer better services, such as transportation to the jet on the runway. I have not had one person I have talked to about the plans tell me it is a bad idea,” added Toussaint.

Nice Airport was privatized in 2016 to a consortium that includes Italian airport and motorway operator Atlantia and France’s EDF Invest. ○



Images courtesy of Open Building Research

Above and center: **The new terminal’s design complements its environment and offers views of the surrounding countryside**

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## LONDON LUTON'S EASYJET PASSENGERS SIGN UP FOR PRIVATE JET TERMINAL ACCESS

Signature Flight Support has partnered with EasyJet to offer commercial customers access to its luxury private jet terminal at London Luton Airport. EasyJet passengers can choose to arrive at and depart from the recently opened terminal, leaving their cars at the front of the building. Customs, immigration and security screening can be processed at Signature's terminal, and customers can use the amenities the lounge has to offer, including complimentary refreshments, a luxury vehicle to drive them directly to the aircraft, a 'snooze room' and a shoe shine machine.

The service costs £475 (US\$615) for one passenger on top of their flight ticket and £120 (US\$155) per additional passenger in the group, and reservations can be made online before traveling.

Speaking about the partnership, Evie Freeman, managing director for Signature Flight Support's Europe, Middle East and Africa division, said, "We are pleased to extend this extraordinary customer experience to our newly inaugurated ultra-luxury terminal at London Luton. Customers can now enjoy an elite experience normally only available to those using private aircraft. It provides a truly unique experience and our staff can accommodate all passengers' needs in a world-class manner."

There has been discussion among aviation experts about what Signature and EasyJet's partnership could mean for FBOs, and whether



***"The initiative is a smart way to promote business aviation to more people"***

Graham Stephenson, aviation consultant

they have tapped in to a trend that could make private terminals appeal to the masses. Some have argued that the total sum of the luxury service and a seat on an EasyJet flight is not much more than an economy seat on a premium airline, potentially opening up the service to customers who have a slightly larger budget.

Graham Stephenson, a senior aviation consultant with almost 60 years' experience in the aviation industry, including a role as ExecuJet Aviation Group's head of fixed-base operations, commented, "The partnership is a great way for FBOs to increase revenue, by making their facility available to commercial airline passengers for a fee. Having security and check-in within FBO and pre-boarding eliminates hassle for passengers and gives them the opportunity to be treated in the same way as business jet passengers."

"The initiative is a smart way to promote business aviation facilities to more people, whetting their appetite for the advantages of using a chartered business jet."

When passengers who have opted to access the private terminal arrive in London Luton, they will have similar privileges to departing travelers, having their luggage collected directly from the aircraft and arriving at the lounge to pass through customs and immigration immediately.

Andrew Middleton, head of ancillary revenue at EasyJet, added, "While EasyJet will always be famous for low fares and its onboard service, for some this is a chance to combine those things with a VIP experience for their loved ones and we think it will be particularly popular for those celebrating a milestone birthday, anniversary or other special occasion, or for those traveling on business." ○



Above: EasyJet passengers can leave cars outside the private terminal by paying extra

Left: The luxury terminal was opened in December 2016

Below: The passengers have full access to the lounge





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## TURBOPROP OPERATORS **HENDELL** AND **FLY7** SET ON EUROPEAN EXPANSION AFTER RULE CHANGE

**F**inland-based Hendell Aviation has been operating single-engine aircraft commercially in Europe since 2013, when an exemption to the regulation meant it could operate everywhere in Europe apart from the UK.

However, full EASA approval this year opens up the UK to the operator, which flies four Pilatus PC-12s. The company is looking for an airport in the UK to be its base.

Matti Auterinen, chairman of Hendell Aviation, said, "We are expanding operations all over Europe, but especially in the UK. We are looking for our ideal airport. Our aircraft can run on a shorter than average runway and fly closer to cities."

European safety regulator EASA gave approval for single-engine turboprops to fly passengers and cargo at night or in instrument meteorological conditions (IMC) on March 1.

The approval of commercial flights for single-engine turboprop aircraft in Europe is creating opportunities for airports as established operators seek to expand their footprint and customer base, leading operators of the aircraft type have said.

The EASA approval has been broadly welcomed by business aviation as a way to create new opportunities for charter operators and business airports. It also brings Europe into line with regulations in the USA.



### European aircraft makers line up to benefit

Pilatus and Daher are the two main European aircraft manufacturers looking to take advantage of the EASA regulation changes for single-engine turboprops.

Switzerland-based Pilatus's PC-12 aircraft isn't cheaper to buy than business jet aircraft with similar passenger capacity, but is generally seen to depreciate less. It also has a lower direct operating cost. "For example," said Matti Auterinen from Hendell Aviation, "a US\$5m PC-12 could depreciate to US\$4.2m in 10 years. They just keep their value better because they are more versatile. The Swiss-made aspect is also perceived to mean it is very good quality."

Yves Roch from Fly 7 Executive Aviation said, "The aircraft is amazing to fly to a whole host of smaller airports and can be used for more things – VIP flights, medevac, cargo. It's an aircraft that can be anything."

There is a global fleet of about 1,500 PC-12s operating worldwide and Pilatus makes about 100 a year. It is unlikely there will be an increase in the production rate, with the company busy with its PC-24 twin-engine business jet.

French manufacturer Daher has produced more than 800 of its TBM "very fast" turboprop aircraft since the first was produced in 1991. The company's latest TBM 910 and 930 aircraft added new avionics, upgraded the cabin interior and are aimed more at the charter operator market.

"The EASA approval in March for commercial air transport operations with single-engine turboprops in IMC and at night is a tremendous opportunity for the business aviation community," said Nicholas Chabbert, senior vice president of the Daher Airplane Business Unit.



Main: The Pilatus PC-12 flying over St-Tropez  
 Right: The 900 and 930 are the latest aircraft in Daher's turboprop range



Photo: Daher

***"The PC-12 can access 2,000 airfields in Europe that are not accessible by jet and at a much more affordable cost. We are going to see a new customer base"***

Yves Roch, Fly7 Executive Aviation

#### Smaller airports

Hendell has partnered with Swiss charter company Fly7 Executive Aviation since 2015. Fly7 has a fleet of seven PC-12s and runs a PC-12 training center in Lausanne.

Yves Roch, Fly7 Executive Aviation, said the company is opening up more airports to private aviation in Europe with the PC-12. "We are receiving more inquiries. We are helping people to discover parts of Europe they couldn't get to before. It is revitalizing the smaller airports we are using. Places like Montpellier want us to come and base our aircraft there.

"Consider that the PC-12 can access 2,000 airfields in Europe that are not accessible by jet and at a much more affordable cost. We are going to see a new customer base of people who had previously dismissed private air charter."

#### Competition

It has been predicted that the EASA rule change will result in more turboprop traffic because the aircraft offer an opportunity to reduce costs. Other experts believe that the rule change could open up many new routes between cities that were previously uneconomic to operate in Europe, leading to the creation of new FBOs.

However, Roch expressed caution at the impact of the change: "The operation of single-engine aircraft commercially isn't happening six months in the future for us in Europe, it's now. We've been doing it for years. How the regulation change impacts the rest of the industry remains to be seen."

"We are not afraid of competition," added Auterinen. "There is plenty of room in the market. We all need to work together on promoting the flight safety of the aircraft to help it take hold in the market." ○

Left: Single-engine turboprops have proved popular for city-to-city journeys in the USA

Right: The PC-12 aircraft can access a wider range of runways than bizjets



Photo: Pilatus

## THE DEVELOPMENT OF A **SUPERSONIC BUSINESS JET** TAKES A STEP FORWARD WITH TECHNOLOGY TO MITIGATE THE SOUND OF SONIC BOOMS



Main: **NASA's design for a quiet supersonic aircraft**  
Left: **Spike Aerospace's supersonic business jet**

Engineering firm Honeywell Aerospace and NASA have developed a business aviation pilot interface for supersonic flight that they say can mitigate the noise created on the ground by sonic booms, which are created when aircraft break the sound barrier.

The business aviation pilot interface has successfully completed a two-year testing program conducted by Honeywell and NASA. The tests showed that the predictive sonic boom software and display technology developed by Honeywell can be successfully integrated into business jet cockpits.

To mitigate the effect over populated areas, the interface visually informs pilots flying supersonic jets where on the ground people may hear sonic booms.

One of the major barriers to supersonic flight is an almost worldwide ban on the creation of sonic booms by aircraft when over land.

"We are pleased to complete this important milestone of the pilot interface testing in civilian airspace with Honeywell," said Brett Pauer, commercial supersonic technology subproject manager, Overland Supersonic Flight, NASA.

"This technology could prove useful for NASA's future planned Low Boom Flight Demonstration experimental airplane. This plane is being designed to gather community noise response data that may help remove the regulatory speed restriction to overland commercial supersonic flight."

Flying at supersonic speeds would change the business aviation industry dramatically, enabling



***"This predictive display brings the vision of the return of commercial supersonic flight closer to reality"***

Bob Witwer, vice president, advanced technology, Honeywell Aerospace

pilots to cut business jet travel times roughly in half. For example, travel time from New York to Los Angeles would be reduced from five hours to 2.5 hours or less. Several companies around the world are currently developing supersonic business jets, including Boston-based Spike Aerospace and Nevada-based Aerion.

"With predictive technology and knowledge, pilots can change course and minimize the boom over populated areas," said Bob Witwer, vice president, advanced technology, Honeywell Aerospace. "Honeywell and NASA have developed this predictive display for civil aviation that has been tested in commercial airspace, bringing the vision of the return of commercial supersonic flight closer to reality."

As part of the completed two-year test program, Honeywell and NASA integrated the software with Honeywell's Interactive Navigation technology into a modern business jet's avionics suite, which allows pilots to predict sonic booms over the aircraft's planned flight path. This provides them with actionable information and visuals to assess the boom impact of a flight plan and display trajectories before the boom is generated, preventing the loud sound from disturbing populated areas. ○

*To find out what our readers think about the possible reintroduction of supersonic flight to business aviation, turn to Back Chat, page 72*



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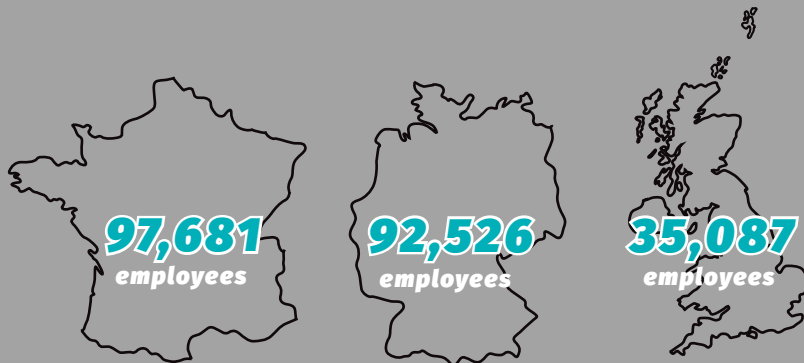
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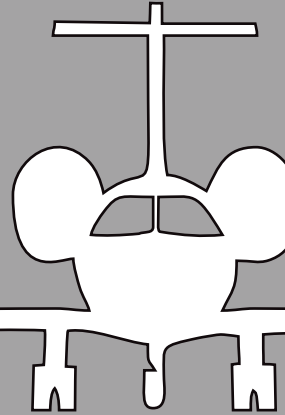
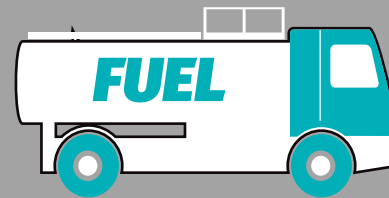
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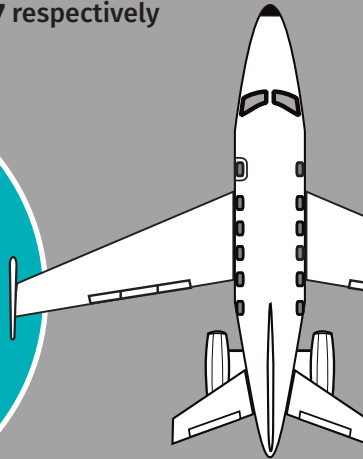
**France, Germany and the United Kingdom** have the most business aviation employees within Europe, with **97,681, 92,526 and 35,087** respectively

Of the 371,362 people that work in business aviation in Europe, just over **76% (283,424 people)** are indirectly employed, delivering products and services used by the sector



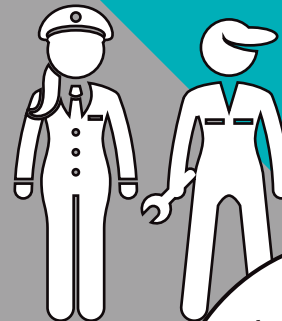
Within the EU's nine major players – the UK, France, Belgium, Germany, Switzerland, Czech Republic, Poland, Portugal and Italy – **56% of employees** are involved in business aircraft manufacturing, while **FBOs account for just 1% of the total labor force** with 1,040 people

The worldwide business aviation fleet is expected to grow from **32,740 to 42,682** by 2023



# WE ARE HIRING!

By 2034, **609,000 technicians** and **558,000 pilots** will be needed across the world



The top three factors that attract young talent to the industry are **training and development, good career prospects and challenging work**

**T**he European Business Aviation Association (EBAA) has warned that the industry should prepare for a skills shortage and take immediate remedial action, following the findings of a study conducted by Korn Ferry Hay Group and Booz Allen Hamilton that was commissioned by the association.

For the study, Shortage of Skills in European Business Aviation, researchers considered the skill sets available to the industry and the likelihood of future struggles to fill essential positions. It assessed the workforce situation in different regions, producing a comparative study of Europe, North America and Asia.

The study also analyzed the attractiveness of a career within the

business aviation industry for students and graduates.

It concluded that there is little awareness about the impending issue of workforce shortages and there is evidence that the demand for a range of highly skilled aviation professionals across different regions will rapidly increase in coming years.

Brandon Mitchener, CEO at the EBAA, said, "This study is an advance warning that we need to raise awareness among our members and in the wider industry, and find ways to attract more talent to the sector. This includes developing a compelling brand proposition for the sector, concerted talent marketing activities, initiatives to attract more women, and a sector-wide information plan." ○

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# Helmut Gross

BUSINESS AIRPORT INTERNATIONAL GETS TO KNOW  
THE OWNER OF FBO **MTS AVIATION**, WHICH OPERATES  
AT SWEDEN'S MALMÖ AIRPORT



## What was your career path to your current role?

Educated as an engineer, I started my career in the Austrian army, partly because I wanted to visit lots of different countries. I later moved to Sweden, where I got married and started in a position on a private yacht, cruising around the Mediterranean and Caribbean for over four years and obtaining a Yachtmaster degree.

After a stint sailing on the ferries between Malmö and Copenhagen, the two countries were considering building a bridge to join them, so I couldn't see my future there. I instead started my aviation education in Ljungbyhed at an old and well-known Swedish Air Force base.

During this time, I realized there wasn't an adequate service for private and business aviation at Malmö Airport, so I set up my FBO and 10 years later I still say that the price of greatness is responsibility.

## What services do you offer at Malmö?

We offer complete ground-handling capabilities, including de-icing, refueling and defueling, ACFT parking in our hangar, flight planning, and a crew refreshment facility. We also have other valuable services available, such



Left: Helmut with the Test Pilots and Technicians of Dassault Falcon France

Below: The airport offers services such as hangar parking, storage and de-icing



as conference and florist arrangements, cargo storage, ramp access for passenger vehicles.

## What is the best part of your job and why?

The customers are incredible and it feels great to receive positive feedback for all the hard work put into making MTS Aviation the very best it can be. The crew I have working for me make a brilliant team, and they really appreciate their role within the company and understand what our goals are to be the best FBO we possibly can at all times.

## How do you stand out from competitors?

I wouldn't say we have any competitors as our business model is unique and tailored to Malmö Airport, but top-level customer service and reliability is essential. Customers are less likely to return if they have a bad experience, so I like to ensure excellent customer service is achieved at all times.

## What is your dream holiday destination and, if money were limitless, what aircraft would you choose to fly there in?

I look back on my time sailing around the Caribbean very fondly, and I would love to go back there and explore the different islands and cultures. Despite my deep-rooted aviation links for over a decade, I would actually prefer to get there on a luxurious 130ft sailing yacht!

## What makes a successful FBO?

The attitude of the management trickles down into every part of a business operation. A positive and professional outlook will be reflected in the level of customer service delivered and the feedback we receive. Having a reliable and dedicated team that shares your working ethos is also very important.

## What does the future hold for MTS Aviation?

We are currently looking at starting up an FBO at another airport on the west coast of Sweden, which is lacking business aviation capabilities – much like Malmö was a decade ago. We are in negotiations with an aircraft operator, and are looking to create a wonderful, educated and experienced team with progressive thinking. We are also looking to employ a broker with experience in the Far East to support operations across our FBOs. ○

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# ***“Business aviation is showing signs of a resurgence. There will always be people happy to pay for luxury”***

**Siegfried Axtmann**



The chairman of FAI Aviation Group, Germany’s largest business jet operator, on supply and demand and the importance of finding a niche in business aviation

**F**AI Group specializes in providing fixed-wing air ambulance services. Sixty percent of our business is air ambulance and the remainder is charter, aircraft management and maintenance. We operate a fleet of 25 aircraft – a mix of Learjet 60 and Challenger 604 – on mostly long-haul medical flights, airlifting around 1,000 patients a year and logging 10,000 hours of airtime. It’s a niche business and provides consistent work.

We offer bed-to-bed transport for patients from the Middle East and Europe who are undergoing special treatment and surgery worldwide – including flights to hostile areas, unless there is a UN embargo. We use FBOs and business airports a lot. Our regional hubs include AI Bateen Executive Airport, Abu Dhabi and Dubai World Central.

## **Reputation**

A key element of our success is being able to keep the non-occupied percentage as low as possible. This is driven by the high volume of requests for transport, a result of the market position we’ve built up over the past 20 years. It is difficult to gain such a foothold. As a startup you would need at least five years to gain a good reputation and acceptance in the assistance and insurance industry, which mostly pays for medical transport. With a smaller fleet, the empty-leg factor would be higher, so it would be a challenge to maintain profitability.

My advice to those setting up in business aviation is to try and concentrate

on a niche and dominate it. For example, in charter, go for long-haul intercontinental business or light-jet transcontinental. There is lots of availability in the charter market and the margins are tight, but the important thing is to operate with high use per aircraft. Unlike air ambulance, in the charter business you get your new AOC and a broker will book you tomorrow. In my view, the primary drivers behind bookings are the price and age of the aircraft cabin, followed by the operating history.

The introduction of new jet card subscription-type programs are good for the industry. They attract and motivate new users. It’s a bit like Uber. Many customers were airline users before but the lower rates on offer have created a new group of clientele for small jets and single-engine turboprops. It’s the flexibility that business aviation offers that is the key attraction.

## **Rising numbers**

There is limited aircraft storage available in Europe and a growing number of aircraft for sale on the pre-owned market. We recently opened a 4,800m<sup>2</sup> (52,000ft<sup>2</sup>) hangar at our Nuremberg Airport headquarters for parking and storage. We anticipate that demand will be high. We also use it to present aircraft for sale.

As the pre-owned bizjet inventory continues to grow, aircraft values are unlikely to recover. Loss of value is also an issue in the new aircraft market. Many



corporations are opting not to replace their corporate jet every 5 to 10 years. Instead, they use it for double the time. Many first-time buyers aren’t coming back to buy another new aircraft, either. There simply aren’t enough buyers in the market to absorb the supply. The loss of value is hurting the industry. Nevertheless, the business aviation market is showing some signs of a resurgence. Equally, there will always be people happy to pay for a luxury. New aircraft will always sell, just as luxury yachts and cars will – some people justify the cost based on lifestyle choice. With all the many advantages that business aviation can bring, you can understand why. ○

Siegfried Axtmann is chairman and co-founder of FAI Group, based at Albrecht Dürer International Airport in Nuremberg, Germany. Founded in 1986, FAI operates Germany’s largest fleet of business jets, and the air ambulance division is one of world’s leading fixed-wing air ambulance operators

Above: **An FAI Air Ambulance Challenger 604 jet**

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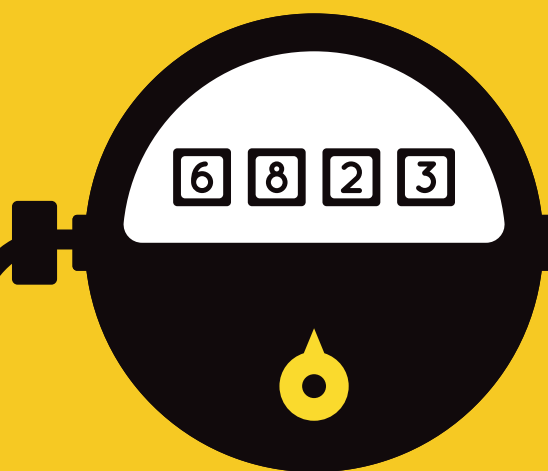
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Words | **Ben Sampson**

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**W**ith aviation fuel being such a highly developed and competitive market, suppliers are seeking to differentiate themselves through digital technology, promoting the environmentally friendly and sustainable aspects of their business and offering additional services.

The business of delivering fuel to business jet owners and operators is essentially a logistical one and as such is about physical infrastructure and commodity pricing. But as in many other logistics sectors, digital technology is affecting the supply and distribution of fuel.

Irene Lomas, global general aviation sales and marketing manager for aviation fuel supplier Air BP, says, "Crude oil is still around US\$50 a barrel and globally there haven't been any big changes in the supply chain. The changes are in what customers need and want – easy access solutions, efficiency and competitiveness on price. These are important factors for customers buying fuel. But we also provide the technical solutions and safe reliable operations our customers still value. It's about the entire offering and our customers are increasingly looking for something more."

Lomas is betting heavily that the "something more" her customers are looking for is the RocketRoute app. Most of Air BP's future strategy is invested in the route planning app, in which the company has acquired a minority stake. Since that investment in April 2016, the app has been developed so users can buy Air BP's fuel with it. More recently it has been expanded so that customers can buy services provided by third parties, such as ground handling, concierge services and trip planning. More services will be added as companies sign up. The aim is for RocketRoute to be a comprehensive marketplace for the business aviation sector, like Amazon in the e-commerce consumer sector, offering not just its own products and services, but also those from third parties.



***"The prevalence of technology in the fuel decision-making process means that FBOs must be more proactive with prospecting"***

Jon Boyle, vice president of contract fuel, Avfuel

Although any customer, including contracted customers, can use the app, Air BP wants general and small business aviation customers to adopt it first. Lomas believes the community will find it the most useful. "We believe everyone will be using the app in the future," she says. "This is a global solution for fuel and other aviation services you can access anywhere, free of charge from any device. We think it's a unique offering."

Lomas also believes the app will have a positive impact on airports and FBOs and help to make them more competitive. "Our app should help airports," she says. "The marketplace lets an FBO know what is coming, what type of services the customer is going to request and the level of demand. It gives airports a lot of advance visibility and brings them more traffic."

### Transparency

Jon Boyle, vice president of contract fuel for supplier and logistics company Avfuel, says that an increase in the use of technology has changed the way the end user approaches the fuel transaction.

"Often, the first point of contact is online through fuel pricing indexes," he says. "The market has become more transparent and flight departments are better able to plan trips by comparing prices and services. The prevalence of technology in the fuel decision-making process also means that FBOs must be more proactive with prospecting, reaching out to customers rather than waiting for customers to reach out to them."

The company has responded to this change by working to ensure that fuel pricing, scheduling systems and its website are using the latest software and internet technology for tablets and phones. The use of mobile devices with internet connectivity has also enabled faster and easier transactions, by using point-of-sale software and remote access to a database of customers' accounts.

Above: **Air BP fuels more than 6,000 flights every day**

Left: **Avfuel can plan trips to optimize fuel usage to increase efficiency and reduce costs**

Below: **Established loyalty program AVTRIP rewards customers with cash awards**





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### Revenue opportunities

According to Boyle, FBOs would still rather make their money on fuel than on a ramp fee. He sees an opportunity for FBOs to increase revenues from fuel by working closely with flight departments that are planning trips with multiple legs. "While large jets with international capabilities could fill their tanks at their home base, where fuel might be more economical, it could actually be costlier for them. The extra weight means it takes more fuel to make the ascent and a heavy load when landing is hard on landing gear.

"For these reasons, some flight departments we've talked to would be willing to work with FBOs on negotiated fuel rates to fuel up incrementally, rather than take one large load from their home base."

By analyzing a jet's trip patterns to determine a fuel price that is competitive with the price at the point of origin and point of destination, operators will be more likely to buy the fuel from FBOs. "Even if that means a fuel discount, selling fuel at a lower price is still more lucrative than not selling it at all," says Boyle. Avfuel's Contract Fuel team offers this trip analysis and fuel pricing service.

### Green partnerships

Parallel to developments in customer services and pricing through digital technology is the technical development of aviation fuel, primarily to make it more environmentally friendly and sustainable. The Avfuel Technology Initiatives Corporation (ATIC), which was founded in 2012, is involved in developing bio and renewable fuels and no-lead avgas replacements, domestically and internationally.

The head of the ATIC is involved in the Piston Aviation Fuel Initiative, a cross-industry US program to identify an unleaded fuel alternative for general aviation operators by 2018 (see next page).

"In terms of an alternative fuel, any alternative must be fairly distributed to achieve competitive, realistic pricing, equal and consistent access, and quality fuel. We are prepared to help with the supply and distribution of alternative fuels to meet that market's needs when the time comes," says Mark Haynes, vice president of sales for Avfuel.



Top: Avfuel has a fueling network that covers more than 3,000 locations

***"You should choose two or maybe three fuel suppliers to work with, as that will cover 98% of your global fueling needs"***

Craig Sincok, CEO and president of Avfuel

## How to choose fuel?

**Craig Sincok, CEO and president of Avfuel, gives his views on what motivates operators when purchasing fuel**

With such a diverse, global fuel-buying climate, it's no wonder I'm constantly asked, "How should I buy fuel?"

Let me tell you a little secret. There is no one solution – one company – that can provide fuel at every location around the world at the best price. So how should you buy fuel?

First, take the 'logical man' approach. Most fuel providers have redundancies, covering the same airports. Though I should be telling you to always buy from Avfuel, in the logical man approach you would choose two or maybe three fuel suppliers to work with, as that will cover 98% of your global fueling needs. As a sophisticated and active participant in aviation, you already know which companies are at the top.

Second, choose companies that are invested in the industry and will be around for the long term. These are likely the same fuel suppliers that offer the most comprehensive services, the widest range of locations and highest service levels.

Third, consider hidden costs. Companies committed to aviation and consumers will be close in price. Your evaluation should include a review of additional charges, such as card processing fees, interest rates on late payments and credit extensions.

There are also two areas that are often misunderstood and can create risk for your company and flight department. First, many flight operators aren't aware that they are exempt from certain taxes or are unsure which taxes apply to them when purchasing fuel through third parties. To address this issue, we process in excess of 4,500+ tax returns annually. Second, there's product liability insurance to consider. It's critical

to understand when the excess product liability insurance that branded fuel suppliers provide applies to you – and more importantly, when it doesn't.

And lastly, do your homework – try to dig past the obvious advertised fuel cost.

Right: Craig Sincok, CEO and president of Avfuel



## US transition to unleaded Avgas has global impact

As part of business aviation's push towards more environmentally friendly fuels, the FAA and industry leaders from piston aviation are co-managing a five-year effort to test and evaluate a fleet-wide replacement for 100LL (leaded) avgas in the USA.

The engine/aircraft test program is expected to finish by the end of 2018 and will be followed by transitional activities that may, with time, have broad impact internationally.

Swift Fuels has developed one of two fuels that have reached the final phase of the program. Swift intends to license its fuel technology and formulations so refiners can produce high-octane fuels once it has been approved by FAA.

The introduction of high-octane unleaded avgas will be controlled by regulators and there are no details on the implementation yet. However, Chris D'Acosta, Swift Fuels CEO, believes adoption of the unleaded fuel will be "spontaneous" and widespread because of its "substantial" benefits. He says, "Long-term I would expect pilots will save up to US\$0.50 per gallon on routine maintenance items when using unleaded fuel and hopefully achieve longer time between engine overhauls."

According to SL270, engine-maker Lycoming has found that regular use of unleaded fuel can double the interval time for oil changes. Improved ignition systems, oil technologies and engine performance features will also all become more front-and-center once unleaded fuels displace 100LL.

D'Acosta anticipates use of the unleaded fuel will catch-on in international markets once the transition to unleaded begins – sometime after 2019. "We're optimistic. We expect availability in select markets worldwide will occur once FAA defines a clear policy and certification pathway for eliminating 100LL. After that point, other nations will be in a position to quickly follow the transition to unleaded avgas."



Above: Air Total is to convert refineries to produce biofuels

Top: Fuel suppliers aim for a smooth refueling process to reduce the burden on aircrews

***"In the long term I would expect pilots will save up to US\$0.50 on routine maintenance items per gallon of unleaded fuel"***

Chris D'Acosta, CEO of Swift Fuels

Environmental concerns and sustainability also remain important considerations for Air BP. The company launched its environmental solutions business last year – a consultancy that helps airports and FBOs comply with local legislation and improve the environmental performance of fuel operations. "Last October we certified that all our operations at airports are carbon neutral," says Lomas. "That was a big milestone. We are seeing a lot more interest from customers for carbon offsetting. It's a cultural change in the sector, so it will take a while for everyone to adopt, but we believe in it for the future."

Similarly, Air Total is pressing ahead with the development of more sustainable and environmentally friendly fuels. Pascale Garcia, head of supply at Air Total, which operates at more than 300 airports across five continents, says, "In the coming months we plan to transform one of our existing refineries in the South of France into a biofuels refinery, with the capacity to produce biojet and UL91 Avgas. We are also engaged in long-term programs to make the development, production and sales of Jet A-1 as sustainable as possible."

Air Total is involved in the development of the four jet-fuel pathways so far certified by the international fuel standards body ASTM. Biojet, which is made from sugar, is being tested by several commercial airlines, including Air France-KLM and Cathay Pacific.

Environmental considerations also affect investment and technology development in Total's infrastructure and supply chain. "We are always looking to improve our supply chain's quality, while reducing the price and environmental impact of delivery methods," says Garcia. "Pipeline transportation will always be preferred instead of trucks. The principles are adapted to the specific logistics of every airport."

"We also aim for a supply chain that is secured, with no risks regarding provision. The supply chain has to be reliable regarding its transportation, and comply with our quality values and rules."

The aviation fuel market remains governed primarily by its fundamentals of infrastructure and pricing, but the sector is far from static. It is now also being driven by environmental concerns and digital technology. These factors are causing suppliers to innovate in new ways, ultimately delivering end users and FBOs a better service and a better deal on fuel. ○

Right: Swift Fuels plans to license its unleaded fuel



# THE TRANSITION TO “UNLEADED” AVGAS *Has Begun...*

## **Swift Fuels Introduces Unleaded UL94 Avgas – Nationwide**

Executives from Swift Fuels estimate the latest published FAA certification documents now allow up to 65% of the US piston engine fleet to benefit from the use of the Unleaded UL94 Avgas.

## **FAA Supplemental Type Certificates (STC) using UL94 Avgas are now available for aircraft models including:**

- Cessna – 172R & 172S (Skyhawk), 182 (Skyline), 172RG (Cutlass)
- Piper – Seminole, Cherokee, Comanche, Warrior, Archer, Aztec, Tomahawk, Arrow, Dakota
- Beech – Duchess, Travel Air, Muskateer, Skipper
- Diamond – DA40 Star
- American Champion – Citabria, Decathlon
- Mooney – M20 (A-D, G)
- Maule – M5, M6, M7, M8
- Hundreds of aircraft makes and models are now available (see Avgas STC's at [www.swiftfuels.com](http://www.swiftfuels.com))

**Note:** Aircraft that are already FAA approved with TCDS's for 80/87 Avgas, or Autogas STC's (e.g. Cessna 150's, Cessna 152's, and most Cessna 172's), or Experimental / Light Sport OEM approvals do not need Avgas STC's.

## **Benefits of Unleaded UL94 Avgas to Aircraft Pilots & Flight Schools:**

- Reduces acid/corrosion from lead buildup in engine oil
- Helps extend TBO and engine life
- Eliminates lead fouling of spark plugs
- Lowers piston aircraft maintenance costs
- Eliminates toxic lead exhaust emissions

## **Lycoming issues Service Letter L270:**

The new service letter doubles the maintenance interval between required oil changes for engines using Unleaded Avgas in regular use from 50 to 100 operating hours. The letter provides specific details and notes that continued and consistent use of unleaded avgas decreases the risk of lead fouling of spark plugs and contamination of engine oil with leaded combustion byproducts. As a result, engines continuously operated on unleaded avgas could realize the following advantages:

- Extended maintenance intervals for spark plug rotation/replacement
  - Extended operating hours between oil changes.
- This rationale from Lycoming helps explain why more pilots and flight schools are seeing the economic benefits of using Swift Fuels Unleaded UL94 Avgas across the US.



To view a complete list of aircraft and rotorcraft models see Avgas STC's at

[www.swiftfuels.com](http://www.swiftfuels.com)

Canada is an important and valued destination for chartered business jets. In addition to being a tourist and business location, the eastern part of the country is an optimal stop-off point for European jets flying onwards to other destinations.

There are approximately 1,900 business aviation aircraft in Canada, operating in every province and territory. Business aviation has access to all the country's 1,460 public-use airports. Commercial airlines serve only around 20%.

In total, business aviation employs 43,200 Canadians, with 23,500 in operational roles and 19,700 in manufacturing. Each business aircraft owned and operated in Canada generates 12 jobs, C\$810,000 (US\$611,550) in wages, C\$2.9m (US\$2.19m) in economic output and puts C\$1.4m

(US\$1.05m) into Canada's GDP every year, according to figures from the Canadian Business Aviation Association (CBAA).

Speaking at the opening of a training center for Canadian aircraft manufacturer Bombardier earlier this year in Montreal, Rudy Toering, president and CEO of the CBAA, said, "Business aviation operations and manufacturing combined is an economic powerhouse for Canada, with a positive impact on our quality of life. Its impact is much larger than people think, generating a total of C\$10.7bn [US\$8.3bn] annually and contributing C\$750m [US\$578m] in taxes.

"In many remote regions of the country, people cannot rely on scheduled airlines because the low population density makes operations unprofitable. These regions profit the most from the access and freedom of movement that can only be provided by business aviation," he said.

# Come to

# C

The location of eastern Canada makes it a key destination and stop-off for private jets. *BAI* explores business aviation in the region and what Canada has to offer

Words | Kirstie Pickering

# Canada



Left: Toronto Pearson International Airport is a key hub for the region

“We as a country would be much poorer, economically and socially, without the connectivity that only business aviation can provide,” said Toering.

According to research by the CBAA, the combined value of business aviation wages for manufacturing and operations averages C\$80,400 [US\$62,000] – 66% above the national average. “Every time a business aviation aircraft ceases operations it costs Canada millions of dollars in lost revenue and wages and makes Canadian companies less competitive and communities more isolated. That is not good for any of us,” said Toering.

#### Toronto issues

The CBAA’s efforts to protect and enhance business aviation were recently rewarded with a win for charter operators arriving at or departing from Toronto Pearson International Airport. In March the Greater Toronto Airport Authority (GTAA) issued a directive that required business aviation flights to give 48 hours’ notice to the airport. This harmed the flexibility business aviation operators need to offer their customers. “The directive was issued with no prior consultation,” says Toering. “Business aviation operators, including corporate flight departments and flight management companies, were deeply concerned that their business interests were being put into real jeopardy.”

When the GTAA realized the magnitude of the concern and that Nav Canada had not initially been fully engaged in finding solutions, it formed a technical working group with members of the CBAA and Nav Canada to find answers.

“The members of the technical working group came together to find a solution,” says Toering. “We have proved that even the most seemingly intractable problem can be solved when people are committed to the task.”

The working group has now determined that general and business aviation operators do not require an arrival or departure slot during Toronto Pearson’s normal operating hours, at least until further notice. The group is continuing to work on a technical solution and set of guidelines for business aviation flights going into and leaving the airport that comply with both the GTAA and the technical working group’s requirements.

## Four tourist spots

**Niagara Falls**, famed for its beauty and hydroelectric power, is on the border between Ontario and New York State. The three waterfalls are Horseshoe Falls, Bride Veil Falls and the American Falls, and the most popular attraction are the several jet boat rides through the rapids.

**Quebec City** has landmarks including the National Museum of Fine Arts of Quebec and the Museum of Civilization. There is also an abundance of notable parks including the Domaine de Malzerets and the Roger-Van Den Hende Botanical Garden.

**Toronto** is one of Canada’s largest cities and is known for its many skyscrapers, including the CN Tower, which is the tallest free-standing structure in the western hemisphere and contains restaurants and viewing points.

**Newfoundland and Labrador** host a parade of 10,000-year-old icebergs along Iceberg Alley between the two regions every May and June. Points of interest include the East Coast Trail, Signal Hill and Bowring Park.



Ontario



***“We as a country would be much poorer, economically and socially, without the connectivity that only business aviation can provide us”***

Rudy Toering, president and CEO of the Canadian Business Aviation Association

# Fly in to...

## Northern Quebec

**Airport:** Kuujuaq Airport  
**Operating hours:** 8am to 6pm Monday to Friday, 9am to 5pm on weekends  
**Facilities:** FBO Halutik Enterprises, and refrigerator and freezer units  
**Runways:** Two at 6,000ft (1,830m) and 5,018ft (1,530m)

## Happy Valley-Goose Bay

**Airport:** Goose Bay Airport  
**Operating hours:** 24 hours  
**Facilities:** FBOs Irving Aviation and Woodward Aviation; cargo, subleasing, aeronautics and industrial services  
**Runway:** 11,046ft (3,370m)

## Nova Scotia

**Airport:** Halifax Stanfield International Airport  
**Operating hours:** 24 hours  
**Facilities:** FBOs PAL Aviation Services, Gateway Facilities and Innotech Aviation Services; a worship area and special needs assistance  
**Runways:** Two at 10,500ft (3,200m) and 7,700ft (2,350m)

## Newfoundland and Labrador

## Newfoundland and Labrador

**Airport:** Gander International Airport  
**Operating hours:** 24 hours  
**Facilities:** Five FBOs including Shell Aviation Services and Allied Aviation Services; spacious terminal accommodating 350 people, car rental agencies, restrooms and exhibitions of Gander's history  
**Runways:** Two at 10,500ft (3,200m) and 8,900ft (2,713m)

## New Brunswick

## Toronto

**Airport:** Toronto Pearson International Airport  
**Operating hours:** 24 hours  
**Facilities:** FBOs Skyservice and Signature; snow removal equipment that clears the runway in 12 minutes, luggage storage and Plaza Premium Lounge  
**Runways:** Five up to 11,050ft (3,370m)

## Quebec

Quebec City

Montreal

Toronto

Niagara Falls

USA

### Getting in

Flight charter companies looking to fly in to any of Canada's airports from outside the country must first apply for commercial operating rights. This registers the operator with Transport Canada and ensures compliance with aviation regulations.

Before an application is submitted, operators must know whether their proposed air operation is commercial or private as the documents that need to be obtained differ. If it is commercial operation, an air operator certificate must be acquired.

Inspectors check that each applicant's operations meet detailed standards before issuing a new certificate. These standards apply to, for example, aircraft airworthiness, personnel training and licensing, flight and crew manuals, and scheduled points of service.

Canadian corporate and regulatory law practice Clark & Company, which has a specialism in aviation, has noted an increase in charter activity to the region of late. The firm has represented a number of European operators that have obtained Canadian operating rights to serve both Canada and the ability to transit over Canadian airspace.

"Air carriers seeking to provide services to Canada require both a Foreign Air Operators Certificate (FAOC) issued by Transport Canada and an economic license issued by the Canadian Transportation Agency," says Bill Clark, legal counsel at Clark & Company. "Once a carrier possesses these documents, it is permitted to conduct fourth-freedom operations subject to other necessary reporting requirements."

The freedoms of the air are a set of aviation rights set by the Chicago Convention of 1944 that grant one country's airlines the privilege to enter and land in another country's airspace. There are nine freedoms permitting movements, such as the right to fly from one's own country to another and the right to fly over a foreign country without landing. In this instance, the fourth freedom permits the right to fly from another country to one's own.

"An FAOC is also required for overflight of Canada, except in limited circumstances where Transport Canada will issue a permit to allow passage," adds Ehsan Monfared, associate at Clark & Company. "The timeframe for obtaining an FAOC is three to six months."



Above: **Montmorency Falls in Quebec**

Below: **The Montreal Grand Prix brings an influx of business jets to the region**

***"Demand for private charters in eastern Canada is steady overall, with growth in the Toronto region"***

David Bruneau, area director,  
Signature Flight Support

### Ongoing operations

Signature Flight is one of many operators in the region and has FBOs in Toronto and Montreal. The company has operated the bases for two and seven years respectively, and is looking to expand in the area.

"Business aviation in Canada has always been stable, with 2% growth in general aviation over the past 10 years," says David Bruneau, Signature Flight's area director for Montreal-Pierre Elliott Trudeau, Toronto Pearson, Calgary and Vancouver airports.

"Our most popular aircraft type is midsize jets, including the Falcon 2000, Challenger 300/350, Challenger 604 and HS-125 series. We have similar customs regulations to the USA, and operators must advise Canadian customs two hours prior to the estimated time of arrival of the aircraft. Typically the customs and immigration process is seamless, with customs meeting the aircraft at the FBO.

"At Signature we have an emphasis on excellent customer service, providing all the necessary services for our transient customers, from fuel to catering, with consistent, exceptional service. We also provide expert line support that is safe and ready on the ramp, with comfortable, clean and well-furnished facilities and service professional who go the extra mile for passengers and crew.

"It is difficult to establish the growth prospects for FBOs in Canada as it is a fairly small and stable market, certainly compared with the USA. Demand for private charters is steady overall, with some growth in the Toronto region."

Other prominent FBOs in the region include Bombardier, P&WC, CAE and Skyservice – the last being the largest in the region. According to the CBAA, the busiest times of the year for FBOs include the lead up to Christmas and the Grand Prix weekend in Montreal. March is traditionally the quietest month for flights.

While eastern Canada's business aviation growth may be slow, the steady demand for chartered flights to and via the country makes it a crucial and valuable destination. With healthy growth in both the US and European markets, it seems logical that Canada will see a hike in popularity as both a final destination and refueling point, and will need to work to meet demand. ○





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Main: **Airbus Corporate Jets and Italian supercar maker Pagani Automobili announced plans to design exclusive and luxurious private jet cabins at this year's EBACE**  
Above: **Luxury brands and FBOs – made for each other?**



The business aviation and luxury goods markets share a similar customer base. How can they work together for mutual benefit?

Words | Chris Anderson



# *High-end appeal*



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Only Better.



### Meet Josh & Julia Hochberg, Owners, Sonoma Jet Center

Is Signature Select right for you? Just ask Josh and Julia. "Signature's marketing and sales support has been outstanding," Josh says. "We expected that. But we didn't realize what a fantastic all-around partner we were getting." The Hochbergs are likely to pull out photos of two brand-new electric tugs, loaned to them by Signature. "Signature delivered these to get us through a really busy month. It was our most successful month ever. Beyond our wildest dreams." Follow Josh and Julia's lead. Retain your identity and your hard-earned customers and add our loyal global customer base. Join Signature Select.® Profit from the power of Signature Flight Support.®

“It's like we acquired a big brother with resources who will do whatever it takes to help us out.”  
- Josh & Julia Hochberg

Join the growing Signature Select community.   [SignatureSelectFBO.com](http://SignatureSelectFBO.com)

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Above: JCDecaux's T5 Immersion features 15 HD digital 'totems' between British Airways first class security and the first class lounge

Left: Dubai's VIP Terminal currently hosts three FBOs, including Falcon Aviation, Jetex and Jet Aviation

visible but limited backlit banners, to activation areas for pop-up displays, to lounge rentals for merchandising and video placement, it offers a wide variety of opportunities that we tailor into specific packages for each brand."

Perhaps there is no harm in trying to accommodate luxury advertisers. According to Helen Manisty, head of marketing communications at leading advertising company JCDecaux's airport division in the UK, demand is on the increase. "We sell media space in airports such as Heathrow, Aberdeen, Edinburgh and Glasgow, working with luxury brands such as Burberry, Chanel, Estée Lauder, Dunhill and Tiffany," she says. "According to the new edition of Zenith's Luxury Advertising Expenditure Forecasts, which examines the expenditure on luxury advertising in 23 key markets, we are expecting growth of 3.9% in 2018, with the USA, China and Japan together accounting for 80% of that."

But as Manisty explains, the traditional methods of advertising are changing, with brands favoring digital where possible. "Over the next two years, the spend by luxury brands on print advertising and TV is expected to decrease, while digital advertising will increase – around 32.1% of total advertising will be digital, compared with 30.7% for TV and 28.6% for print," she says.

***"Over the next two years, the spend by luxury brands on digital advertising will increase – around 32.1% of total advertising will be digital"***

Helen Manisty, head of marketing communications, JCDecaux

**B**usiness aviation is a luxury item. It carries a higher price tag than commercial travel, with a degree of exclusivity, and generally targets discerning, high-net-worth individuals. Anyone traveling on a business aircraft, it is safe to assume, might also be in the market for luxury cars, watches and hotels, as well as other high-end goods and services.

Does that mean there is an opportunity here for FBOs and business airports? As a portal for a luxury lifestyle, with these high-earning customers passing through every day, is there a captive audience for other luxury brands to be exposed to? These companies already advertise in commercial airports, but are FBOs more suited to their needs?

If there is the potential for FBOs and business airports to increase their revenues by advertising or other forms of promotion to high-net-worth individuals, it is a market still in its infancy, according to James Rolls, CEO of TMIL Private Jet Media, an agency that helps to develop such collaborations. "The market is quite new and it's a learning curve for everyone," is his personal assessment.

TMIL was appointed as the media placement agency for Dubai's new VIP Terminal last year, to help the airport achieve its marketing potential. "The terminal was designed with an audience for brand advertising in mind, as well as exclusive luxury placements," Rolls says. "From highly

## Who is the target market?

Most companies in the business aviation sector have a clear picture of who their customer is, and therefore who to target with their advertising and partnerships. "Primarily male, mid-40s and easily worth more than US\$100m," says James Rolls, CEO, TMIL Private Jet Media.

This audience is also targeted by subscription club Wheels Up. "I would say late 40s/early 50s, and a lot of entrepreneurs fly with us," says chief brand officer Mark Sage. "It's typically the guy with a young family, but also a very active lifestyle, traveling for fun as well as business."

Earlier in the year, global private jet broker charter company PrivateFly released its own data, based on bookings from 2016. The average age of its typical business jet traveler was 41 years, and 71% were male. The person will, on average, travel

with three or four others, generally searching for flights using a laptop (59%) or smartphone (31%).

In PrivateFly's case, the most requested route was London to Paris, with a small four-seater 'air taxi' style jet the preferred form of transport. He tends to book late notice too, just a week before take-off, with 11:00am on a Friday the most popular time to fly.

Adam Twidell, PrivateFly's chief executive, says there is growing crossover between the profile of the private jet user and the airline passenger. He adds that while a number of users were successful business owners, many were traveling with family and friends, and willing to pay a little extra just to get a better travel experience. "The entry-level end of the market is becoming increasingly competitive, and this trend will continue," he says.

# BusinessAir & AircraftforSale.com

## Gulfstream IVSP

s/n 1369 ■ N302SB



6590 TT, Rolls Royce Engines on JSSI 100%, On Part 135, Honeywell Primus 8000 Avionics, Completely New 14 Passenger Interior, New Custom Paint February 2017, ADS-B Out, Aircell ATG-5000 WiFi Router (GoGo 4G Prepaid) ..... **Call For Price • +1 (703) 787-8800**

## 2007 Gulfstream G200

s/n 163 ■ G-ZZOO



2866 TT, Collins Proline IV 5-Tube EFIS Flight Director and EICAS, Engines Enrolled on Pratt & Whitney ESP Gold, APU Enrolled on Honeywell MSP, Airshow 4000, ICG 200 Iridium Satcom, 10 Passenger Interior ..... **\$5,295,000 • +1 (912) 965-7300**

## Gulfstream G650

s/n 6166 ■ N766GA



32 TT, 2016 Delivery, Honeywell PlaneView Avionics Suite, Part 135 Compliance, Two JetBed Self-Inflating Mattresses, 11 Place Executive Interior Configuration, Crew Rest Compartment, RVSM Certified ..... **\$62,850,000 • +1 (562) 989-8800**

## 2005 Sikorsky S-76C+

s/n 760599 ■ N767P



7656 TT, WAAS UNS-1FW Flight System w/o LPV, Enhanced Ground Proximity Warning System, Engine Inlet Barrier Filter, ProLine II Avionics, Dual Honeywell SPZ-7600 Flight Director/Autopilot, Jet Power Supply Modification Kit, 12 Passenger Interior ... **CALL FOR PRICE • +1 (410) 573-1515**

## Dassault Falcon 7X

s/n 138 ■ M-OMAN



1374 TT, EASy II+ Cockpit, Airframe on FalconCare, Engines and APU on ESP Gold, One Owner Since New, ADS-B Out, TCAS 7.1, Honeywell Primus Epic Avionics Suite, Dual Honeywell AutoFlight Control System, Fresh 1-6A Inspections. .... **Call For Price • +44 (0)845 521 5555**

## 2012 Hawker 900XP

s/n HA-0209 ■ N900PF



570 TT, Remaining Factory Warranty, Meticulously Maintained, Engines & APU on MSP Gold, Rockwell Collins Pro Line 21 Avionics Suite, Aircell ATG-4000 Go-Go Biz, Enhanced Sound Proofing, No Damage History, Always Hangared, 9 Passenger Interior ... **CALL FOR PRICE • +1 (201) 365-6080**

## Embraer Legacy 650

s/n 14501126 ■ JY-CMC



2852 TT, One Owner Since New, Engines on Rolls Royce Corporate Care, APU on JSSI, EASA & EU-OPS1 Certified, 13 Passenger Interior, Forward & Aft Lavatory, Honeywell Primus Elite Avionics Suite, ACAS II (TCAS II with Change 7) ..... **Call For Price • +44 (0)845 521 5555**

## Cessna Citation Sovereign+

s/n 680-0560 ■ N680TR



72 TT, Garmin G5000 Avionics Suite, TCAS II with 7.1 Update, Nine Place Executive Style Interior, GoGo Axxess II Iridium AirCell & WiFi, Extended Range Oxygen System, Program Enrollment: Power Advantage Plus, ProParts, APU Aux ..... **CALL FOR PRICE • +1 (941) 201-1211**

Milano Linate Prime, the first FBO in Italy, is working with IGPDecaux, an Italian subsidiary of JCDecaux, to discover how technology can be used to help it advertise luxury brands. "For the advertising sites in Milano Linate Prime, IGPDecaux uses the highest quality and latest technologies," explains Chiara Dorigotti, general manager of the FBO operator, SEA Prime. "Brands can choose between different media, analog or digital, for short-, medium- or long-term periods. Promotions can be planned to take place during certain events in Milan, such as its fashion weeks or the Formula 1."

### Less is more

Even with FBOs embracing luxury advertising, the general feeling seems to be that too much advertising can impair the customer's experience. "We tested brand advertising in the past, working with the agency Adlux, which handled the sales for us, but our current strategy is to refrain from that in our lounges," says Adeline Varéon, marketing communication manager of TAG Aviation Group. "Our thinking is that it is too intrusive in the passenger



Above: Digital advertising at Milano Linate Prime is proving popular with luxury brands

Right: TAG Aviation prefers to keep its lounges free from overt advertising messages

***"Our approach is not to bombard our clients with screens, advertising or merchandising, because we want them to feel at ease in their dedicated lounge"***

Adeline Varéon, marketing communication manager, TAG Aviation Group



## What are new companies looking for?

To many, the business aviation industry faces disruption from ambitious new startups that offer a range of initiatives, from online book platforms to membership schemes, designed to lower the cost of chartering an aircraft. So how are these companies marketing their ideas and finding a customer base?

JetSmarter, which calls itself the world's largest mobile marketplace for private jets, has already launched a branded lounge at Ross Aviation's Westchester County Airport FBO in White Plains, New York, but this is not an approach to suit everyone. "It's different to what we're doing," says Mark Sage, chief brand officer at Wheels Up, a membership private aviation company. "We're concentrating more on the right flight experience for our members and putting capital into growing our fleet."

At three-and-a-half years old, Wheels Up has more than 4,000 members, with annual fees plus an hourly rate according to the preferred type of aircraft. "We also have a member benefits program called Wheels Down, with 30 or so partners, from hotels to fashion brands, all offering incentives," Sage says.

"In terms of advertising, we'll run campaigns on news networks and in magazines, plus a lot of digital advertising. We're also a global partner of the Young Presidents' Association, a global network of young chief executives with around 24,000 members, and there are maybe 45 PGA golfers wearing our logo, so we get a lot of exposure there. But we know that our members are busy people, so we want to capture them in the right setting or environment. We try to be more targeted than a mass brand."

experience. Our approach is not to bombard our clients with screens, advertising or merchandising, because we want them to feel at ease in their dedicated lounge, where they can escape from all of that."

Another reason TAG Aviation has decided not to feature advertising as much is to maintain its neutrality. "Our clients are business leaders and we want to remain as neutral as possible, to avoid favoring one brand more than others and any conflict of interest," Varéon adds. "In Switzerland, for example, there are lots of luxury brands that want to advertise with us. The income we could potentially get versus the way it would make our clients feel would not be worthwhile."

The view is shared by TMIL, to a degree, with Rolls admitting that even with a venue like the Dubai VIP Terminal, seemingly custom-built to allow for more advertising and brand cooperation, it is best not to push too much. "Within the same month, there is a limit to the number of brands exhibiting, and for the same brand we typically try to keep to three inventory elements as the maximum within the journey," he says. "So we might have video within the operator lounge, followed by an activation area in the main lounge, plus a backlit banner at departure. That is a package that seems to work well."

While technology can also be a factor, again Rolls advises restraint. "Technology is integral, but so is art," he says. "To attract and secure partnerships with fashion and luxury brands, we need to find the right balance."

## Working together

For some FBOs, it seems that brand association and partnerships with an outside company are far more beneficial. This is an approach preferred by TAG Aviation. “We remain open to partner with a brand on the basis that it brings value to the client,” says Varéon. “But generally, we prefer short-term partnerships, so we can propose something new to the client on a regular basis, which keeps their interest and attention better.”

SEA Prime has also selected brand partners – but with relationships intended to be longer term. “We want to deliver the best possible services, so our philosophy is to partner with those we consider best in class,” explains Dorigotti. “That is why we work closely with BMW, Gate Gourmet Italia and Associazione MonteNapoleone. Our passengers are picked up in a BMW 7 Series, and can spend time in the BMW Business Center. Gate Gourmet Italia looks after the food in our Prime Gusto Bar and Restaurant, and provides inflight catering. Associazione MonteNapoleone, which represents Milan’s Fashion Quadrilatero, with its boutiques, restaurants and historic sites, allows our guests exclusive access and services.”

## New approaches

The idea of developing a productive brand partnership as opposed to the more traditional display advertising has been embraced by other areas of business aviation. For RUAG Aviation, a support company for private jets that offers maintenance and repairs, an opportunity to develop its own branded watch for aircraft owners, the Skylife, in collaboration with German watchmaker Moritz Grossman,



Above: **SEA Prime uses BMW 7 Series cars to ferry passengers between flights**

Right & below: **The BMW Business Center at Milano Linate Prime**



***“We want to deliver the best possible services, so our philosophy is to partner with those we consider best in class”***

Chiara Dorigotti, general manager, SEA Prime



was too good to miss. “We wanted a way to get in front of our audience, as to a lot of people RUAG is known primarily for its work with the military,” explains Fabian Kölliker, manager of product management and innovation at RUAG Aviation. “You can only buy the Skylife if you present the serial number of your aircraft, and this is engraved on the back. The reason we decided to work with Moritz Grossman was because it shares the same values as we do in terms of craftsmanship and innovation. That’s why we came together, and the feedback is good so far. It may be something we look at marketing through partner FBOs as well at some point.”

For Manisty at JCDecaux, this is all part of the current trend of brands looking at more creative and unusual marketing methods. “We’ve introduced a number of innovations in airport advertising, such as our dynamic content, which allows advertisers to pull live data, including weather reports or traffic information, into their creative brief,” she says. “There is also smart content, which can be tailored to a specific destination if placed at a certain gate, for example. We also came up with the T5 Gold Channel at Heathrow Terminal 5, which starts with a huge digital screen at the entrance. Passengers on their way to the first class area have to pass along a walkway lined with 15 screens, which continues the message.”

TMIL’s Rolls agrees: “The brands are demanding good video placement and activation areas,” he says. “We are seeing a growing interest in events that can be leveraged on social media, and most requests today will include a digital component.” ○



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# Mission

Connectivity, data and advanced tools are rapidly changing the way that MROs keep aircraft in service and customers happy

Words | Steve Johnson

A Signature Flight Support engineer inspects part of an engine nacelle



**A**bove all else, the operators and owners of business jets want their aircraft to be maintained in a way that provides the maximum amount of reliability and serviceability. In the highly competitive area of business aviation, many MRO (maintenance, refurbishment, overhaul) providers are aiming to improve the customer's 'experience' of the maintenance process. To deliver both, the customer-facing technologies are about smoothness and simplicity to convey the right impression, while behind the scenes the systems and processes are increasingly advanced and complex. For FBOs and airports, understanding what is happening behind the hangar doors has never been more difficult or more important.

The latest business aircraft require less maintenance, less frequently, thanks to the use of composites, hybrid alloys and special coatings, which extend service life. There are also more sophisticated data collection and measurement tools available for advanced diagnostics and prognosis. The picture that emerges is one of a maintenance operation with much more IT and data happening than just a move to a paperless environment would suggest.

## Manufacturers' market

Jet aircraft-maker Gulfstream has focused on greater integration of manufacturing and maintenance. The 3D modeling used to design the G650 is an integral part of servicing the aircraft and is used in the air-to-ground aircraft monitoring. The company's latest datalink – PlaneConnect HTM (Health and Trend Monitoring), which is used on the G650 and G650ER – provides near real-time recording of up to 10,000 parameters on the aircraft. The system transmits information such as fuel consumption, pressure readings, temperatures and engine health data to aircraft operators and Gulfstream's Technical Operations for diagnosis, analysis and parts ordering. The data results in faster turnaround times for maintenance and produces valuable insights into the aircraft fleet.

Derek Zimmerman, president of product support at Gulfstream, says, "We also use flight operational quality assurance, or flight data monitoring, to enhance overall safety. We encourage operators to incorporate data analysis, constructive dialog and continuous improvement in aircraft operations."

Dariusz Saluga, CEO of Jet Maintenance Solutions, agrees that the introduction of advanced notification's about maintenance issues enables MROs to improve customer support. "There's more effective troubleshooting and usage information available to operators," he says. "It also enables interaction with fleet systems for advanced decision making and parts management. The added value is that we are able to take action before a component fails, which improves the reliability of the aircraft and dramatically reduces costs."

Florida-based Signature Flight Support says a recent incident on a Gulfstream V flying into Mexico clearly highlights how the greater availability of data can help reduce costs. The operator received a message from the crew that the flaps were not deploying correctly and cockpit indications were that the flaps were out of alignment.

Patrick Sniffen, vice-president of marketing at Signature Flight Support, says, "Reviewing the quick access recorders determined that there was a faulty indicator in the cockpit. Live data from the recorder monitoring the flap assemblies proved that all stops and full travel of the flaps were true and



## African gateway for aircraft parts

ExecuJet Africa boasts a VIP lounge and 24-hour support capabilities



ExecuJet Africa's FBO in Nigeria throws a spotlight on some of the challenges of maintaining fleets of business jets in developing parts of the world. Part of the Luxaviation Group, ExecuJet Africa opened at Lagos's Murtala Muhammed International Airport in 2010. The FBO provides 24-hour maintenance support and full Continuing Airworthiness Management Organization (CAMO) services in the region.

With its 5,000m<sup>2</sup> hangar facility and a 25,000m<sup>2</sup> apron, the FBO had nearly 3,000 movements in 2016, with around 12% growth being reported so far in 2017 compared with 2016.

ExecuJet's parts and logistics capability, which is run from the FBO, represents a key part of the operation. The facility sends parts and components to airports throughout the area, acting as a gateway for these parts to and from Europe's major aviation hubs – Brussels, Frankfurt, London and Paris. The parts are used to keep business aircraft in service.

Paul Ludick, CEO of ExecuJet Nigeria, says, "We supply parts and consumables to third-party owners and operators who have urgent requirements in Africa. From tires, o-rings, lights and bulbs to hardware for routine and scheduled maintenance,



Above: Gulfstream's Luton Service Center serves as the OEM's European maintenance hub

Left: Line maintenance on a Dassault Falcon 900LX

***"We are able to take action before a component fails, which improves the reliability of the aircraft and dramatically reduces costs"***

Darius Saluga, CEO, Jet Maintenance Solutions

Left: Execujet Africa specializes in servicing airframe, avionics and engines

everything is held in our dedicated storage areas."

The company carries out its own quality checks on parts. If the inspection is passed, the part is positioned for immediate use or stored. However, unserviceable parts are transferred to quarantine for repair or exchange. Ludick says that this can cause friction with aircraft owners and operators, who have challenged them on the serviceability of parts on numerous occasions, especially

when its engineers are providing technical support for grounded aircraft in remote areas. Travel visas for staff to get to these remote areas can also take time to obtain.

Ludick says, "We recently had two aircraft-on-the-ground incidents. A Challenger 604 with a broken passenger door cable and a Global Express XRS with an emergency power shortage. Despite the challenges, we were able to service both aircraft ready for our clients quickly because of our stock and tool availability."

correct. This alleviated the need to send another aircraft, crew and maintenance support to fix the aircraft."

### Inventory investment

Maintenance providers have to invest in their facilities, tooling, IT systems and training to achieve this type of predictive maintenance. Last year Gulfstream opened a 406,000ft<sup>2</sup> (38,000m<sup>2</sup>) product support distribution center with automated inventory and workforce management systems. The inventory is stored and retrieved based on calculations about the size and frequency of order requirements to optimize operations.

"Instead of taking minutes to pull parts off shelves, it takes seconds," says Gulfstream's Zimmerman. "Ultimately our customers get the right parts they need, faster than ever, via the global parcel networks."

In terms of payback, Jet Maintenance Solutions estimates that new technologies could result in a 50% reduction in the time spent carrying out routine airframe heavy maintenance. Saluga from Jet Maintenance Solutions says, "For business jet operators it means increased revenue generation, better asset use and more flying days."

However, a major consideration of the enhanced level of connectivity and abundance of data being produced is cybersecurity. The latest generation of aircraft can produce up to 120TB of data every year. There are potential conflicts of interest in terms of who will control and profit from the data, as well as who will manage and ensure the security of commercial information. Gulfstream, which introduced Plane Connect in 2007, is looking at how to improve the connectivity of the information displays and instrumentation in the cockpit: "A lot of people have been talking about the connected aircraft for decades, but the use case hasn't been figured out yet – especially in the context of cybersecurity," says Zimmerman. "Currently the only way to get information into an aircraft is by the pilot typing it into the avionics."

Sniffen from Signature Flight Support says that today's connected technologies have two fundamental security system designs that preclude most threats. He says, "Cabin connectivity is an independent solution that does not interface with the cockpit except for input data to drive maps and non-essential information streams. Secondly, secure channels to interface with the cockpit such as navigation database updates, FMS flight plans or flight plan deviations cannot be conducted without pilot interaction."



## Dent mapping system set to support FBOs

Aircraft regularly suffer damage from bird strikes, hail storms, collisions with ground equipment or have post-corrosion repair issues. Traditionally, assessing aircraft damage is a time-consuming process. Prone to subjectivity and human error, mapping and measuring dents to regulatory standards can cause delay to aircraft that are otherwise ready for use.

Colorado-based 8Tree is addressing the problem with its dentCHECK surface inspection tools. The handheld device can be set up in less than a minute, scans the affected area and displays the measurement results in real time by projecting them onto the aircraft, colored in red, green or blue to display what's in and out of tolerance.

The 3D scanner also records the measurement data for reporting purposes with a single click and integrates easily with software to produce all of the necessary documentation.

The company, which launched in 2013, says that dentCHECK enables users to make decisions about aircraft serviceability faster than with traditional methods. The technology, which has approval from Airbus and is already gaining traction in the airline sector, looks set to be used in the business jet sector.

8Tree founder and CEO, Arun Chhabra, says, "The larger MROs using the product are getting payback in a matter of months. The feedback has been very positive with 90% time savings being achieved. Executive aircraft OEMs are showing strong interest. Following the completion of successful trials, we hope to announce soon that one of the global brands is adopting dentCHECK."



## Customer customization

The business aviation sector remains very competitive and fast-moving for MROs. According to Jet Maintenance Solutions there is a growing demand for modifications for business jets, driven by customers looking for exclusiveness or cabin design originality.

Lori Johnson, marketing manager at Duncan Aviation, the world's largest privately owned business jet support facility, says, "Connectivity is no longer a luxury. Passengers expect it aboard their aircraft. And if systems become unserviceable it is often considered an aircraft-on-the-ground situation."

Duncan Aviation has developed customer-facing apps and website management systems to enhance customer service. First introduced in 2006, its myDuncan app is available to any customer with an aircraft undergoing an airframe, avionics or engine project at one of its sites. It also manages 'send-in' repairs with component status tracking. Customers use their computers and mobile devices to manage projects whether they stay with the aircraft or not. "Our customers receive email alerts, status reports and updates with hour and cost estimates," says Ryan DeVall, IT project manager, Duncan Aviation. "We want to make the customer's job easier and relevant data more accessible. We continue to add functionality to make myDuncan even more useful."

## Technology roll-out

There is a notable people factor attached to rolling out new technologies, which includes empowering engineers to diagnose and repair more expediently. Saluga says, "Engineers and planning staff need more professionalism and knowledge. It's a different maintenance philosophy. As needs arise around the world, there's often a shortage of qualified engineers that can act quickly and effectively. New technologies help engineers to be more productive, having augmented their skills with 'expertise on demand' provided remotely to locations where they are not physically present."

Signature Flight Support's Sniffen agrees, "With a little understanding of the avionics suite and maintenance interface capabilities, engineers can connect a laptop, download the faults, ATA codes, troubleshooting methods and repair/replace procedures."

Saluga predicts that aircraft manufacturers will increase their share of the aftermarket support for business jets in

***"Connectivity is no longer a luxury and if systems become unserviceable it is often considered an aircraft-on-the-ground situation"***

Lori Johnson, marketing manager,  
Duncan Aviation

Above left: 8Tree's wireless handheld inspection tool maps out three-dimensional dents

Above right: The tool is set up to scan aircraft surfaces in less than a minute

the future. This will squeeze the independent private charter MRO market share, if new capabilities are not consolidated and strategies aligned with technology trends.

"For us it is not enough to do only traditional maintenance such as heavy airframe checks, which are lower margin and subject to hangar space being available," he says.

Jet Maintenance Solutions is also looking to the growing demand for modifications, cabin reconfiguration, in-flight entertainment, avionics upgrades and wi-fi connectivity. "These trends are driven by passenger experience, but it's also vital we maintain our competitive advantage in heavy airframe maintenance. We are introducing automated inspection and data collection tools to make the process faster and more efficient."

Sniffen says that operators and MROs need to partner more closely to enable more real-time diagnosis, coordinating with maintenance teams for quick solutions and continued flight operations. "MROs that stay on top or ahead of the technology curve will be at the forefront to provide operators with unparalleled support. Slowly but surely things are moving in the right direction. This, like everything else aviation related, will have a slow adoption rate." ○



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Illustration: Chris Madden



# *Time to* **grow**

FBOs and airports must build new infrastructure to increase revenues and accommodate growth in traffic. When faced with the task of expansion, what are the common pitfalls?

Words | **Saul Wordsworth**



A

n average of all projections suggests a global fleet growth estimation of 8,000 aircraft by 2026, or an increase of 40%. The BRIC nations (Brazil, Russia, India and China) show upswings in both purchase and expansion plans. As a result, and in an effort to keep up, FBOs and airfields across the world continue to undergo major development and expansion.

However, managing such growth can be another matter. All too often, business aviation is perceived by those outside of the community as a luxury commodity rather than a potential source of employment for the local economy, and an opportunity for business development on a national scale. As such, managing expectations is often the key consideration in any planned expansion.

“Airports with mainly business operations are likely to employ fewer people in the local community than those with commercial aviation,”

Above & below: **London Biggin Hill Airport** has secured £15m to build an additional 140,000ft<sup>2</sup> office, hangar and hotel

***“It’s extremely important to have an open dialog with local authorities and not to lose momentum”***

Robert Walters, business development director,  
London Biggin Hill Airport



## Case Study: London Biggin Hill Airport

London Biggin Hill Airport Limited has been the owner of London Biggin Hill Airport for the past 25 years. When the company purchased the airfield, it was a set of rundown hangars and aerodromes that needed investment. Today, its 500-acre (202ha) site has two FBOs, 10 MRO facilities and 50,000 movements per year. This has been achieved by focusing on a ‘triangle’ strategy – Biggin Hill as a gateway to London, a home base for business aircraft and an MRO center. All objectives set out by the airport feed into one of the three points of the triangle, with the message driven home through consistent education.

“Home base is about ensuring we have all the facilities here for customers who would like to keep their airplanes in London,” says Robert Walters at Biggin Hill. “In terms of our gateway to London, two years ago we launched the London Heli Shuttle, which enables us to take our customers from the steps of their airplane to central London in just six minutes. We also have modern, high-quality parking hangars and, due to demand, we’re in the middle of building another 70,000ft<sup>2</sup> [6,500m<sup>2</sup>] hangar. Our MRO strategy is to ensure we can supply OEMs and third-party service centers with a sufficiently trained, local labor pool.”

The airport had more than 60,000 respondents to three public consultations about its expansion and received over 75% support in terms of widening operating hours to a point where it could achieve moderate growth in business and create employment opportunities. “We will be able to provide jobs and opportunities for local people today and in future generations,” says Walters. “In response to the consultation, we installed noise-track systems to ensure that we can monitor the performance of all of our customers flying in and out of the airport. That’s what the local community wants us to be: a responsible neighbor.”

says Chris Chalk, Mott MacDonald's global practice leader for aviation. "This can lead to less community support for extending operations, hence education and communication are important."

### Planning and development

"The biggest challenge with business aviation over commercial aviation is in the planning and acceptance from policymakers of what our business offers, both to the local community and the country as a whole," says Robert Walters, business development director for London Biggin Hill Airport in the UK. "We have worked tirelessly over the past 15 years to educate local, regional and national authorities, which helps us to expand our services when the demand arises. There needs to be a constant conversation, particularly as politicians are replaced. We talk about what we can do to create new jobs and opportunities for people in the community, and what impact that will have on the local economy and beyond. It's extremely important to have an open dialog with local authorities and not to lose momentum. This certainly helps when it comes to receiving positive planning policy for what you want to do."

Frequent public involvement and corporate social responsibility projects involving the community help to build relationships with neighbors. These relationships are needed to gain trust that airport expansion projects will provide benefits. An airport should feel part of the community, rather than an inaccessible and sterile neighbor, and it can take considerable work over many years to achieve this status. The local community will see through any short-term promises made close to a planning application as being window dressing.

"Communication is key – constant communication," says Lynn Eplawy, president of Gary Jet Center, an FBO out of Gary/Chicago International Airport in Illinois, often billed as Chicago's third airport.



***"Our most recent project, a brand-new FBO corporate arrival-departure terminal, is all private funding"***

Lynn Eplawy, president, Gary Jet Center

Above: **The new terminal at Gary/Chicago airport has a glass-walled lobby**

Below: **Gary Jet Center is building a new Corporate Flight Center at Gary/Chicago International Airport (KGYG)**

In 2015, the airport completed a US\$174m runway expansion, taking it to almost 8,900ft (2,700m) long. The work required the relocation of a railway line. Gary Jet Center itself recently won approval from the city to build a US\$2m welcome center and a new terminal outside of its hangar.

"Whether you are communicating to stakeholders, tenants, or the public at large, all parts of an expansion need to be discussed over time," says Eplawy. "The public and governments have vastly more understanding of an airport's functions and success when there are commercial airlines. But business aviation is harder to understand or prioritize. We always have people questioning the 'success' of our airport because we don't have a commercial airline. That's not the interpretation of the airport authority, but those to whom they report are always questioning what they are doing to get an airline. This tends to make pushing any expansion through more challenging. Ensuring everyone is informed is imperative to budgets, timelines and process."

"Key to us is also to observe the ever-changing landscape of aviation," she continues. "Being a tertiary airport in the major market of Chicago enables us to study how the challenges at other airports in the area have the potential to feed our airport – limited hangar space for instance, or changes to operations – and that way we can plan expansion according to those opportunities as they start to become realities."

### Commercial backdrop

The scenarios described so far highlight the issues faced by dedicated business airports, or FBOs working out of tertiary airfields. What if you are an FBO at a commercial hub? This is the situation faced by some at Toronto Pearson, the Canadian city's only international airport. Ian McDougall is CEO of Flight Solutions & Services (FSS), the company behind a multipurpose high-tech FBO facility branded the Aerospace Center, currently in development. "In North





America, you see a rich tapestry of airports on account of its long history of aviation,” he says. “In Toronto there is only one viable center for business aviation and that’s Pearson. In terms of working on stakeholder relationships, our primary relationship is always with the airport authority. The authority has primary responsibility for whatever we do that impacts the community. Perhaps this makes it easier, because we have the benefit of being able to deal with a single point of contact. In terms of managing expansion, the key issue for us is the lease available from the airport authority. The trend is for shorter and shorter terms.”

Development of the Aerospace Center is taking place on the south side of the airport. Construction is expected to start in late summer and will take 20 to 22 months to finish.

### Funding sources

Commercial airports can source investment funding from various levels of government. In the USA, this equates to federal, state and regional. Outside, particularly in the Middle East, it may be a national investment program. Private aviation, on the other hand, has to seek capital mostly from banks, although there are three other sources: strategic investors with their own money or equity funds, commonly looking to stay a relatively short period before selling their position to a longer-term investment institution, such as a pension fund, once the main capital investment is completed and risks are reduced; the FBO itself, which may perform the expansion in return for a longer lease, additional land or reduced costs; and finally contractors, who will finance the investment against an availability payment or as part of a strategic ownership investment.

“Our most recent project, a brand-new FBO corporate arrival-departure terminal, is all private funding consisting

with part business equity and part private bank loan,” says Eplawy from Gary Jet Center. “However, in the past our private company has worked with the airport authority to secure financing in deals where the public airport issued bonds, and our private business serviced the debt on those bonds. That deal was in conjunction with a long-term leasehold at the airport and a reversal of property ownership to the airport at the end of the long-term lease. With smaller regional airports, it is imperative that the private and public side work together to find creative means to financing, where there are short- and long-term goals realized for both partners.”

“Three months ago, we were successful in securing funding from HSBC for two ongoing projects,” says Walters from London Biggin Hill Airport. “The US\$12m loan is for the construction of a new 70,000ft<sup>2</sup> [6,500m<sup>2</sup>] hangar and an airport hotel.

“In terms of loans and financing, the process is again all about education,” he continues. “Visibility of earning has been a stumbling block for financiers in the past because business aviation is so often feast or famine. Not only that, many business and general aviation airports and FBOs don’t actually own a lot of infrastructure. This is one of the benefits at Biggin Hill, as we have a sizeable property portfolio with a visible income. Financiers have sight of our baseline income, regardless of whether there will be an ash cloud in the sky tomorrow. This has helped strengthen our case when raising finance for the construction projects.”

“Major trunk airlines have much bigger balance sheets to borrow against, so their banking transactions draw upon well-balanced lines and they can go much bigger much quicker,” says McDougall, from Flight Services & Solutions. “For us there is bank financing, but we had to put together a solid business case. We didn’t just send them the balance sheet and say ‘trust us’; we had to come up with a project line, show revenues, and develop comfort for the lenders that we were going to generate the revenues we had promised. This is quite conventional for most real estate developments.”

While in many locations the main obstacle to expansion might be getting the relevant permits from the local or national authorities due to noise impacts, the primary obstacle most FBOs will encounter is in obtaining the finance due to uncertainties in the business plan, with the issue always coming back to future traffic revenues. Walters, however, sees it differently – understandable perhaps since his perspective is that of an airport with a solid balance sheet.

“You have to take the staff with you,” he says. “You are preparing your team for the new challenges ahead. To this end, you might need to recruit more licensed personnel, mainly around air traffic control. We have chosen a policy of recruiting and training internally rather than outside, but you always have to complement one with the other when necessity calls. The other challenge is ensuring relations are maintained with customers, suppliers and stakeholders while the business grows.” ○

**“We had to come up with a project line, show revenues, and develop comfort for the lenders that we were going to generate the revenues we had promised”**

Ian McDougall, CEO, Flight Solutions & Services

Above: **The 250,000ft<sup>2</sup> (23,230m<sup>2</sup>) Aerospace Center at Toronto Pearson**

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As the pace of development of electric and plug-in hybrid aircraft increases, airports and FBOs may need to consider infrastructure changes and improvements

Words | **Andrew Williams**

Airbus Group's two-seater E-Fan 2.0 technology demonstrator is powered by two 30kW motors



# **Ready to** *charge*

Fully electric aircraft's short-field performance and lack of noise make them ideal for use in general aviation

As electric systems and battery technology matures, charter operators and aircraft owners around the world are busy assessing the potential impact that plug-in hybrid and electric aircraft may have on their businesses. Meanwhile, FBOs and airports are considering how these aircraft could impact them in terms of changes to regulations, equipment and operations.

### Rapid progression

In the ongoing quest to reduce carbon emissions and tackle excessive noise, plug-in hybrid and electric aircraft are now viewed as an increasingly viable option by the aviation sector – prompting a growing number of companies to actively develop the technology.

Furthermore, the first available are likely to be smaller aircraft suited for use by business and general aviation.

Airbus has recently completed a three-year project to develop its electric E-Fan two-seater aircraft, which is powered by two 30kW electric motors. The company has shelved plans to offer the aircraft commercially and is developing a more powerful demonstrator aircraft, known as the E-Fan X. As part of the project, the European aircraft manufacturer is partnering with Siemens to enhance the 260kW motor recently successfully demonstrated in the Extra 330LE aerobatic aircraft.

According to Airbus, the program is preparing for the future, largely in recognition of the fact that “progression is

**“The battery technology to enable flight for our early 2020s hybrid electric aircraft is available today”**

Ashish Kumar, CEO, Zunum Aero

## Zunum aims to shake up regional market

One of the most high-profile electrically powered aircraft schemes in the world is a project by USA-based aircraft startup Zunum Aero, which is developing a range of 10- to 50-seat hybrid electric aircraft for the regional market.

According to the company, the aircraft will initially be used for trips of up to 700 miles – and for journeys of up to 1,000 miles by 2030. Ultimately, the plan is to slash travel times along busy flight corridors by up to 40%, and by an impressive 80% in regions with less traffic.

As Ashish Kumar, CEO at Zunum Aero, explains, the aircraft are being developed to address a regional transport gap that has “steadily worsened” since the late 1960s and is now long overdue for a solution. “Our current air system is really optimized for long-haul

travel, and is not serving regional transit very well. We are aiming for ranges of sub-1,000 miles and there is pent-up demand across carriers for aircraft with competitive economics over those distances. This is a problem that’s hard to solve using gas turbines, but perfect for hybrid electrics,” he says.

“The battery technology to enable flight for our early 2020s hybrid electric aircraft is available today, so any question on timing is around how fast we can build to catch up and take advantage of this rapidly improving technology,” he adds.



Above: The 10- to 50-seat electric aircraft Zunum is developing uses components available today

## Is hydrogen an alternative to electricity?

**Across the aerospace industry, the adoption of hydrogen fueling is very much in its infancy. Some hydrogen-powered aircraft trials are currently being carried out in the USA, Germany and China, and some airports are adopting hydrogen fuel to reduce the emissions from their on-the-ground vehicle fleet.**

Fuel suppliers are observing such developments with great interest. One such company is Air Products. The industrial gas supplier led the Hydrogen Transport in European Cities (HyTEC) initiative in the automotive sector, which explored how hydrogen-powered transportation and the associated infrastructure could be successfully rolled out across Europe.

According to Frank Schnitzler, European business manager for hydrogen energy systems at Air Products, it is difficult to predict how large-scale airport hydrogen refueling networks would work in practice. The same issues that apply in the automotive and chemicals sectors are also likely to apply to airports – including the fact that hydrogen fuel cells require a high level of purity to prevent catalyst poisoning, where the catalyst is rendered ineffective due to exposure to unwanted chemical compounds. “We have defined the refueling standards in both the materials handling and automotive sectors, where the minimum purities are 350 bar and 700 bar respectively. We expect to see similar

stringent standards in aerospace and will probably be involved in setting those standards,” he says.

Schnitzler believes that supply issues will be another key consideration in future refueling networks. Air Products currently delivers hydrogen to lower volume users directly, using a network of dispatch centers and vehicles across the USA and Europe.

“Higher-volume users tend to lease our PRISM on-site hydrogen generators. Airports will probably do the same as the sector matures,” he adds.

Ultimately, although recognizing the advantages of both electric and hydrogen-powered aircraft, he argues that hydrogen offers a greater range and faster refueling – both critical issues to airports and commercial airlines.



Right: Over long distances, trucking liquid hydrogen is more economical than trucking gaseous hydrogen because a liquid tanker truck can hold a much larger mass of hydrogen than a gaseous tube trailer

fast in electric and hybrid electric propulsion.” The company aims to fly an E-Fan X in the next three years that would have a 2MW power system, and then move on to developing a single-aisle hybrid, which would need up to 40MW of power.

Elsewhere, US aircraft maker Boeing has recently teamed up with JetBlue Airways to invest in startup Zunum Aero, which is currently in the process of designing and creating a range of 10- to 50-seat electrically powered aircraft (see box, *Zunum aims to shake up regional market*).

### Clear benefits

Another company in the burgeoning sector of electric flight is Slovenian light aircraft manufacturer Pipistrel, which has been developing propeller-driven gliders and training aircraft with zero-emission propulsion systems for almost 20 years, such as the Taurus Electro, Alpha Electro and WATTsUP electric aircraft.

According to Ivo Boscarol, founder and general manager at the company, although the energy density of existing batteries does not yet permit long-distance flights, they already “completely replace combustion engines on self-launching gliders, motorgliders and training aircraft”. For Boscarol, the key benefit of electrically driven aircraft is the reduction of noise, closely followed by the lower cost of electricity compared to aviation fuel.

“Electricity can be produced locally just about anywhere in the world from renewable sources, and the transition to full electric mobility can make whole countries or even continents independent of oil producers,” says Boscarol.

“Electric propulsion is also very easy to control, has an almost immediate response, and can easily be distributed by wire.”

While Olav Mosvold Larsen, senior advisor of strategy and development at Avinor, the main Norwegian airport operator and air navigation service provider (ANSF), agrees that reductions in emissions and noise are obvious benefits, he says that aircraft which use relatively small electric engines could provide “significantly improved performance compared to jet or turboprop aircraft”.

“For a company like ours, operating 20 airports with relatively short runways, improved performance could mean we can welcome bigger aircraft at even our smallest airports,” he says.

“The main challenge is the batteries. But with the astonishing amount of effort and money being put into battery technology for electric cars, the ratio between capacity and weight is expected to improve considerably, and this will benefit electric aircraft,” he adds.

In terms of range, Boscarol from Pipistrel argues that electrically propelled aircraft can already act as a substitute for short-distance city transport, but admits that long-distance flying is not viable. “However, it’s slowly becoming a possibility when combined with other energy sources, such as hydrogen fuel cells. Another challenge is lifespan,



Above: **Boeing's X-57 Maxwell** experimental airplane has **14 electric motors integrated into a uniquely designed wing**

Left: **Pipistrel's Alpha Electro** two-seat electric trainer

or the number of charging cycles of batteries, which is still much lower than in the car industry or in electronic devices," he says.

### Airport infrastructure

As hybrid and electric aircraft become gradually more widely adopted, Boscarol also points out the pressing need to introduce a comprehensive airport-based charging infrastructure. Charging systems are becoming faster every day and he says that the entire electric infrastructure of airports and the surrounding network, such as connections, will have to be designed to handle the intense power levels.

"Airports will have to undergo the exact same process that happened when fuel-powered cars first took to the road, when a well-functioning network of fuel pumps was built. In the same way, the network of electrical charging stations will have to be made," he says.

Boscarol also says that electric propulsion is ideal for so-called distributed propulsion type aircraft – or vertical take-off and landing (VTOL) vehicles – reducing the need for very long runways. He also predicts that the 'almost maintenance-free' propulsion systems of electric aircraft will also help to reduce the operational cost per hour.

"My guess is that, in the future, aircraft wings will become shorter and then slowly disappear because of VTOL. Airports will consist of more heliport-type landing platforms than conventional runways," he says.

Meanwhile, Larsen confirms that it is still too early to plan the use of electric aircraft at Norwegian airports, but reveals that Avinor, together with the Norwegian Airports Federation, has been monitoring the development of electric flight. "It does indeed look really promising. It is too early to say which electric aircraft will be introduced, but the first market will probably be in general aviation (GA) and flight schools," he says.

***"If the OEMs can get electric aircraft flying, the airports will for sure figure out the charging"***

Olav Mosvold Larsen, senior advisor of strategy and development, Avinor

"This is not science fiction – Siemens is promising 100 passengers and 1,000km by 2030, but it remains to be seen whether these fairly big aircraft will be hybrid or fully electric. Smaller aircraft with a shorter range can be fully electric," continues Larsen.

Although he predicts that airports in Norway – as well as elsewhere – will inevitably need to take a close look at their electricity infrastructure, he is confident that operators will receive the specifications needed in time to make improvements. "Charging times are crucial, and with today's technology one could foresee some kind of supercharger, but it is still too early to tell what the preferred technology will be in the end. I am, however, confident that if the OEMs can get electric aircraft flying, the airports will for sure figure out the charging," he says.

### Huge market share

Looking ahead, Boscarol predicts that the first large-scale adopters of electric and hybrid technology will be airlines running commuter-type passenger aircraft. In particular, he argues that city traffic will flourish, as will the routes that bring passengers from smaller cities without their own airports to main international airports. He says that Pipistrel has recently entered into a partnership with Uber to develop commuter networks made of electric VTOL aircraft in large cities.

"Such commuter-type aircraft, between 9- and 50-seaters, are realistic in 15 years' time. However, because business aviation is often long range, it may not be a realistic option in the near future," he says.

Meanwhile, Larsen also believes that general aviation will probably be an early adopter of smaller aircraft. "If electric aircraft continue to be developed, they will take a huge chunk of the market for regional flights. Fuel is one of the main costs for aircraft operators, so any improvement here is welcomed. Maintenance costs are also expected to be reduced because an electric motor is not as complicated as a jet engine," he adds. ○



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# ***Key location***

Bangor International Airport, Maine,  
has a rich history and a special location  
to provide a solid platform on which to  
build a promising future

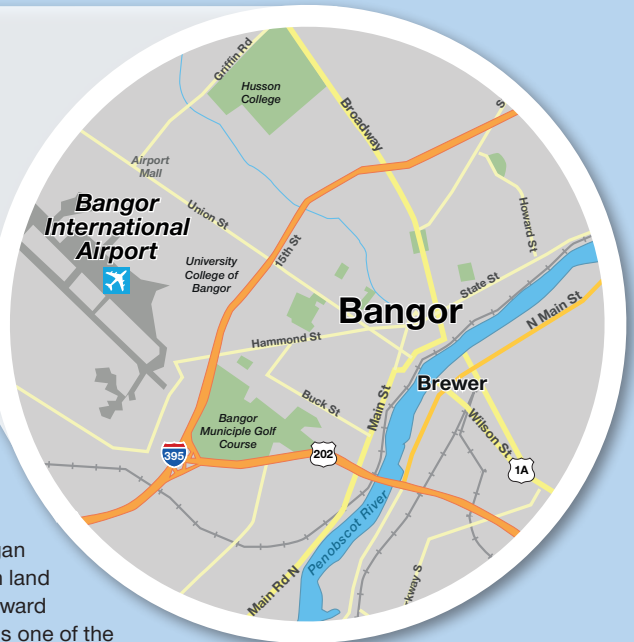
Words | **Terry Spruce**



**B**angor International Airport in Maine celebrates its 90<sup>th</sup> anniversary this year. It began as Godfrey Field in 1927 on land owned by local attorney Edward Godfrey. Today the airport is one of the most dynamic and varied in the USA. It provides services that range from greeting military staff and royalty, to refueling transatlantic flights carrying senior business executives.

With all the complexities of running an airport, where life is governed by rigid schedules, all ensuring that the right aircraft turn up at the right place at the right time, there's an irony in the fact that working at Bangor can be one of the most unpredictable jobs in the world. The staff manages its role as the diversion airport of choice alongside the day-to-day routine of scheduled flights to and from other parts of the USA.

By its very nature, preparing for the unpredictable is a taxing challenge, made somewhat easier by the meticulous nature of the planning exercise the airport is required by the FAA to carry out every three years. It is a drill that is taken extremely seriously and one that tests every department involved, both on and off the airport.



### Gateway location

Tony Caruso, airport director at Bangor International, says that it is the airport's location that is a fundamental asset to the airport and its markets.

"Above all else, what makes BGR special is its location as the closest US port of entry from Europe, together with its role as the diversion airport of choice," he says. "Insofar as general aviation traffic is concerned, the airport owns and operates its own FBO and fuel farm, as well as managing its own ground handling operations. Except for the non-core services, such as catering or cleaning, all airside services are handled in-house."

Despite its role as a gateway to the USA and having good relationships with its neighbors, the airport is not 'twinning' with any other airports. But it does have a close relationship with business aviation.

"Business aviation is very important to Bangor. It accounts for around 40% of traffic and uses its own FBO facility," says Caruso.

James Canders, assistant airport director, says, "The airport is looking to upgrade its FBO facility with a new passenger lounge and redesign of its crew rest area. The redesign will allow the lounge facility to flow better and to give crews their own separate rest area."

At present most business aviation users stay with their aircraft while being refueled or replenished on the apron. The new facility will give them the option to leave their aircraft.

### International role

Currently there are 21 tenant companies at the airport, supporting 983 full-time and 780 part-time employees. The airport itself employs 70 full-time and 50 part-time employees.

The cost of the tenant employees is US\$63m and output is estimated at US\$189m. The airport employees cost US\$4.9m and output is estimated at US\$15m. Therefore, for every dollar spent on staff there is an estimated return of US\$3 at the airport.

The airport's status as the nearest US port of entry from Europe helps it attract business aviation aircraft. Many aircraft will stopover at the airport before making the onward flight to Europe and many European-based aircraft will stopover to refuel and use other services before flying to their final US destination.

### Refurbishment

The airport has recently undergone a US\$14m refurbishment program that has brought about major operating efficiencies as well as a considerably enhanced passenger experience. It has since also installed a new passenger gate and state-of-the-art jet bridge costing around US\$2m.

Canders says that the airport is looking for growth in cargo. "The airport is under a five-year capital improvement plan, part of which is a 2022 runway expansion and a second jetbridge gate at the terminal. As part of the expansion, the tarmac on the runway will be relaid over several nights. This will allow the airport to remain open to traffic during the day."



***"We pay our way. Our revenues cover our costs and profits stay with the airport and do not go to the city. We are truly a special airport"***

Tony Caruso, airport director at Bangor International



### Maintenance growth

Aircraft maintenance at any airport is a key element, so Bangor has encouraged it for many years.

Pat Lemieux, director of marketing for C&L Aviation Group, says that the company has grown steadily, since it set up and employs about 200 people including some overseas.

The company works on regional and corporate aircraft, including CRJ, 200, 700, 9000, ERJ 135, 145, Saab 340, 2000, Dash-8, ATR and Beech 1900 on the regional side and Challenger aircraft, Hawker aircraft, Beechjet aircraft and Citation aircraft on the corporate side. Recently, a three-year maintenance deal was signed with Elite Airways for its fleet of regional jets, one of several such agreements.

The company is also seeing growth in its maintenance support for business aviation and is actively looking to expand its portfolio. To support its growth, the company recently expanded into another hangar at Bangor.



## History of Bangor

Bangor International Airport opened in 1927. Passenger services began in 1931 to Portland and Boston by Boston-Maine Airways. In 1940 Boston-Maine became Northeast Airlines, which eventually merged with Delta Airlines in 1972. During the 1930s Amelia Earhart flew as a celebrity pilot on some of the earliest flights for Boston-Maine Airways.

Just prior to World War II, Godfrey Field was taken over by the US Army Air Corps and became the Bangor Army Air Field. Its mission was to serve as an embarkation point for military aircraft

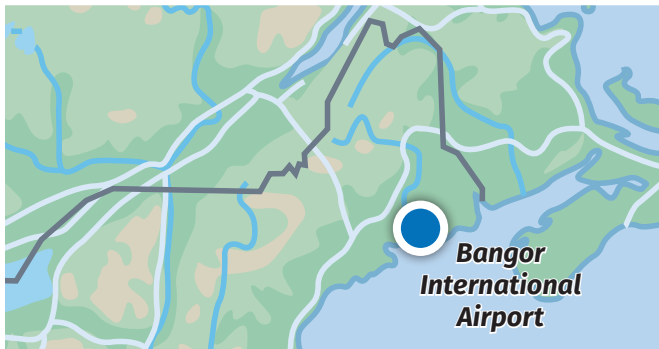
flying to Europe. The airport was renamed Dow Army Airfield in 1942, and in 1947, when the newly formed US Air Force took control, it became Dow Air Force Base.

Dow was closed in 1968, but the base was purchased by the city of Bangor and reopened the following year as Bangor International Airport.

Today the airport handles every kind of business aircraft, from single-engine turboprops to long-range business jets. It also can be used by commercial airliners for an emergency stop when the need arises.

The airport has gained a reputation as a place where the local troop-greeters meet those arriving and departing the country. They hand returning troops cell phones to call home as soon as they arrive. They have also welcomed President George Bush in 2004 as well as President Bill Clinton in 2006.

The greeters also welcomed Prince Harry recently to their display area. There are plans in place to create a museum at the airport near the area between the Amelia Earhart Room and the domestic terminal.



Such a strategy continues the airport's role as a tech-stop for refuel and replenish, as the aircraft fly onward to their destination.

### Fueling business

Much of the airport's business is fuel – provided by Irving America – and accounts for about a third of its total revenue. The airport fully runs its own fuel services, from storage and delivery to aircraft. About 40% of the airport's business is ground handling. Caruso says that the airport occasionally looks at getting a well-known FBO and/or fuel provider, but it never sees any great benefit in making a such a big change.

Business aviation is therefore the mainstay of Bangor Airport's business model. The airport handles business aviation aircraft every day. The constant stream of movements is thanks in part to NetJets using the airport as its preferred US port of entry, rather than flying to New York or other East Coast ports of entry.

In addition to these business aviation movements, Bangor Airport also sees delivery flights from aircraft manufacturers. Boeing and Airbus are both regular users. One new aircraft a day is delivered. On a typical day, a Boeing 737-800 may land before heading to Turkmenistan via Birmingham, UK; the next day an Airbus A320neo uses the airport direct from Europe before it flies to a Mexican operator.

In the background to this business activity, Bangor is used by the military. It is a final stop-off for the US military personnel serving the country abroad and the first US city for returning troops, and is often requested as the first city by the military because of the Maine Troop Greeters, a group of veterans who send-off or welcome home American troops serving overseas. The airport is regularly used by military air arms from other countries as their first US port of entry, including the Royal Air Force.

Clearly every day at this regional airport is different, even though there are regular airline services from many US cities connecting Bangor with the rest of the world.

It has earned a reputation for being an airport that will make every effort to do something if at all possible. ○

### Vital statistics

**Location:** Bangor, Maine

**Operating hours:**

24 hours a day

**Runway length:** 3,486m

**Fuel:** Jet A, 100LL

The airport is also looking to build a new bonded warehouse to store perishable items in a refrigerated unit as another part of the improvement plan. As with everything at the airport it depends on finance.

Caruso has put forward a new proposal to cargo operators to use the airport as a staging point, to enable them to refuel at the airport and therefore carry more cargo.

### Paying its way

The airport's next aim it is to reach half a million passengers a year – a figure that is tantalizingly close at 492,000.

"There is no subsidy from the city and therefore it is not a heavy burden on the local community, but the airport receives federal funds. There are few complaints from the local community directed at the airport. Maybe one a month.

"We pay our way. Our revenues cover our costs and any profits stay with the airport and do not go to the city. We are truly a special airport.

"In the summer months the airport is much busier for business aviation. We are investing in the FBO to get plenty of passengers and plan to make additional strategic investments. Funds are being invested annually to improve the passenger experience.

"The development of long-range business aircraft opens up the Middle East market to the airport as a fuel-and-go location."

# city **focus**

Barcelona

Your guide to flying to one of the most culturally rich cities in Spain

Words | Kirstie Pickering

## Main airports near Barcelona

### Barcelona-El Prat Airport

**Operating hours:** 24/7

**Facilities:** Fixed-base operations provided by Gestair FBO by Sky Valet, ExecuJet and Menzies Executive/Signature Select, with maintenance offered by Executive Airlines. Facilities include overnight hangar storage, slot coordination and a limousine service

**Fuel:** Jet and Avgas

**Runway length:** 11,654ft, 8,727ft and 8,294ft (3,552m, 2,660m and 2,530m)

**Distance from Barcelona:** 7.5 miles (12km)

### Girona-Costa Brava Airport

**Operating hours:** 24/7 in summer, 8:30am to 9:00pm in winter

**Facilities:** Fixed-base operations provided by ExecuJet, Gestair FBO by Sky Valet and Universal Aviation Spain. Services include car rental, direct ramp access and weather briefings

**Fuel:** Jet and Avgas

**Runway length:** 7,874ft (2,400m)

**Distance from Barcelona:** 58 miles (93km)

### Reus Airport

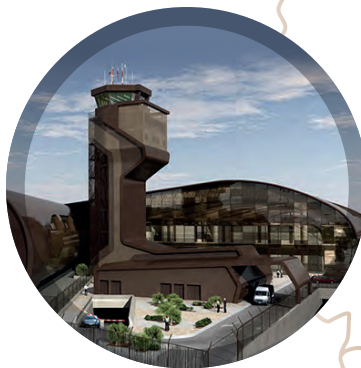
**Operating hours:** 6:00am to 10:00pm in summer; 7:00am to 9:00pm in winter

**Facilities:** Fixed-base operations by Servisair. Facilities include a conference and meeting room, banking services and duty-free shopping

**Fuel:** Jet and Avgas

**Runway length:** 8,067ft (2,460m)

**Distance from Barcelona:** 55 miles (88km)



Zaragoza Airport



**La Seu d'Urgell  
Airport**

**Girona-Costa  
Brava Airport**

**Catalonia**

**Sabadell Airport**

**Barcelona**

**Barcelona-  
El Prat Airport**

**Reus Airport**

**Castellón-Costa  
Azahar Airport**

## Other airports around Catalonia

### **Sabadell Airport**

**Operating hours:** 9:00am until sunset

**Facilities:** Wi-fi throughout the airport

**Fuel:** Jet A-1 and Avgas 100LL supplied by SLCA

**Runway length:** 2,953ft (900m)

**Distance from Barcelona:** 14 miles (23km)

### **La Seu d'Urgell Airport**

**Operating hours:** Winter (November 1 to March 31) 8:30am to 5:00pm. Summer (April 1 to October 31) Monday to Thursday 8:30am to 6:00pm, Friday to Sunday 8:30am to 7:00pm (June, July and August until 8:30pm)

**Facilities:** Meeting and conference rooms, crew lounge, catering service, handling, free wi-fi, customs and immigration services, wide platform for aircraft parking

**Fuel:** Avgas 100LL and Jet A-1

**Runway length:** 4,156ft (1,267m)

**Distance from Barcelona:** 121 miles (195km)

### **Castellón-Costa Azahar Airport**

**Operating hours:** Monday 12:30am to 7:30pm, Tuesday 11:00am to 6:00pm, Wednesday 6:30am to 2:30pm, Thursday 11:00am to 6:00pm, Friday 6:30am to 7:30pm, Saturday 11:00am to 6:00pm, Sunday 6:30am to 9:00pm

**Facilities:** Handling by Lesma Handling Group

**Fuel:** Jet and Avgas

**Runway length:** 8,858ft (2,700m)

**Distance from Barcelona:** 160 miles (258km)

### **Zaragoza Airport**

**Operating hours:** 4:45am to 9:00pm in summer and 5:45am to 10:00pm in winter

**Facilities:** 12 aircraft stands, refrigerated storage, 50,590ft² storage, ground handling

**Fuel:** Jet and Avgas

**Runway length:** 12,198ft and 9,842ft (3,718m and 3,000m)

**Distance from Barcelona:** 196 miles (315km)

# Experience prevails

An early career as an aircraft pilot has provided Access Oslo Executive Handling's founder Aleksander Aaland with first-hand knowledge about what makes an effective FBO and handler

**A**ccess Oslo Executive Handling's Aleksander Aaland always knew he wanted to work as a pilot. His interest in aircraft shaped his former career as a Cessna Citation Encore pilot, leading to his current role as the CEO of Access Oslo Executive Handling.

Aaland's approach to providing a high level of service with a personal touch and a particular focus on safety, has been important to the company's success, aided by his roots as a client himself for almost a decade at numerous FBOs throughout Europe.

Access Oslo has two full service FBOs at Oslo Gardermoen Airport (ENGM) and Sandefjord Torp (ENTO), where Aaland has adopted the best practices he has experienced throughout his years within the aviation industry.

In 2015 Access Oslo welcomed its first client for handling services. From the very beginning the mindset has always been about how the company can be the very best it can be.

Details such as always meeting the clients with a warm welcome by the entrance are important to Access Oslo, maintaining a constant level of exceptional customer service. Extra services such as loaning out coats during the winter when a crew is arriving

in Norway in -20°C without any warm clothes and the ability to anticipate what clients want even before they know it themselves, are just some of the small things that Aaland sees as a natural part of his team's mindset.

## FBO services

As Sandefjord Airport (ENTO) is a natural diversion airport, Access Oslo decided to open a full service FBO there in May 2016. Its presence at ENTO ensures that clients are taken care of by professional staff in the event of a diversion, so there is no need to send new handling, fueling or catering requests.

Access Oslo's employees' backgrounds are predominantly in the aviation business, helping them appreciate the responsibility that comes with being a handling services provider. This awareness is reflected in daily operations and the company has implemented a safety management system to strengthen the level of safety.

## Scandinavian supervision

In business aviation, where everything is time-, service- and cost-sensitive, Access Oslo soon became aware that its clients frequently asked who they should contact

## Vital statistics

**Location:** Norway's Sandefjord Airport and Oslo Gardermoen Airport

**Experience:** CEO Aleksander Aaland was previously a pilot

**Services:** Parking, slot coordination, fueling, catering, landing permission coordination, ground power units, cabin interior cleaning, supervision of handling



for handling services at other airports in Norway and Scandinavia as a whole.

The company soon catered for this gap in the market, keeping on top of current passenger demands.

Clients can decide whether they prefer on-site or off-site supervision, with the latter being most common. This hands the FBO responsibility for obtaining all necessary information needed.

## Careful costing

For Access Oslo, it became natural to implement a price-match guarantee for its handling services, reassuring clients that their costs would be as low as possible.

At both ENGM and ENTO, clients can benefit from complimentary services including free VIP and crew lounges, all coordination such as booking slots, fuel release, reporting of the Norwegian Air Passenger Tax, and crew transport. Access Oslo's team also negotiates competitive rates for the best hotels and catering providers, in addition to luxury transport companies. ○

## ACCESS OSLO EXECUTIVE HANDLING

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Reader Inquiry Number 101



Top: ENGM's luxury crew lounge

Above: The lobby at Access Oslo's facility at ENTO

Left: The VIP lounge at ENGM offers catering in a modern setting

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## Morristown Airport connects business aviation clients from around the world with the Big Apple

**A**s Metro New York's global business connection, Morristown Airport (MMU) has been providing premium services for business and private aviation operators for almost 75 years. Located within northern New Jersey's thriving corporate enclaves, MMU sits just 25 miles west of downtown Manhattan, with direct highway access.

MMU provides an on-site US Customs and Border Protection (USCBP) facility. In addition, it has 24-hour aircraft rescue and firefighting services.

In June 2017, Morristown Airport continued its multi-year, capital improvement project by resurfacing the remaining 50ft center section of runway 5/23. Signature Flight



Above: Morristown Airport has welcomed business aviation operators for 75 years

Support, the airport's resident FBO, will be undergoing updates and improvements to its lounge and hangar during the next six months.

Over the coming years, projects will include updating the instrument landing system, runway lighting, modernizing the drainage systems

and enhancing the runway safety areas.

Along with on-site USCBP, 24-hour aircraft rescue and firefighting service, an airport traffic control tower and award-winning airport operations and facilities staff, MMU is the home to several charter companies, flight schools and Fortune 500 flight departments.

MMU operates 24 hours a day and USCBP is open weekdays from 8am to 4pm, and outside of these times with prior reservation. Its air traffic control hours are from 6:45am to 10:30pm. ○

### MORRISTOWN AIRPORT

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Reader Inquiry Number 102

## Time and attention are deemed to be Sky Valet's more precious resources when working with France's Aéroport de la Côte D'Azur

**S**ky Valet is the FBO for Aéroport de la Côte D'Azur group, representing a network of 22 FBOs at the most iconic destinations in France, Spain and Portugal.

Sky Valet had a record year in 2016, with nearly 40,000 business jet movements in Europe. Thanks to customer trust and confidence, Sky Valet is now the leading FBO network for those countries.

As a result of recent expansion work, its customers can now fly from Cannes to Paris, Madrid, and Lisbon, and benefit from the same level of services. Sky Valet's integrated European network will provide additional immediate benefits such as simplified operational, contractual and accounting processes.

When visiting any of Sky Valet location, passengers will benefit from harmonized and reliable operations with customized hospitality within state-of-the-art facilities. As our honored guests, customers are assured of the

highest standards and the most sophisticated services.

An example of such services includes making a reservation for exclusive use of its terrace overlooking aircraft at Paris-Le Bourget for a private meeting. The company can additionally arrange for a helicopter to be waiting near a customer's jet, ready to fly to Saint-Tropez or Ibiza.

Sky Valet's teams are inspired by the same determination to provide aircraft owners, passengers and crew with outstanding and personalized services. To achieve this objective, they have been trained by some of the greatest professionals in the luxury industry.

The company considers certification as key to ensuring excellence in safety and security. Sky Valet Cannes was the first European FBO to achieve IS-BAH certification, and it is now gradually adopting the IS-BAH label across the whole network. To build on this success and keep

Sky Valet is stationed at locations across the continent



### AND AS WELL AT:

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- SANTA MARIA, PONTA DELGADA, LAJES (AZORES)
- LUANDA (ANGOLA)
- MAPUTO (MOZAMBIQUE)
- ESPARGOS, PRAIA, RABIL, SAO PEDRO (CAPE VERDE)

delivering customer promises, it will further expand the network in the near future and bring additional benefits to customers. ○

### SKY VALET

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# DO YOU BELIEVE **SUPERSONIC BUSINESS JETS** COULD RETURN TO OUR SKIES, OR WAS **CONCORDE** THE CLOSEST WE CAN GET TO COMMERCIALLY VIABLE?



A future supersonic advanced concept from Boeing, with two engines above the fuselage (Photo: NASA/Boeing)

**E**ngineering firm Honeywell and NASA have developed a business aviation pilot interface for supersonic flight, which they say can mitigate the noise heard on the ground by sonic booms.

Flying at supersonic speeds would change the aviation industry drastically, enabling pilots to cut business jet travel times roughly in half. But one of the major barriers to supersonic flight is an almost worldwide ban on the sonic booms made by aircraft when over land.

There are several projects ongoing around the world to develop supersonic business jets. Leading companies in the area include

Boston-based Spike Aerospace and Nevada-based Aerion Corporation. Both hope to have supersonic jets operating in the skies during the next decade.

On the other hand, it's now almost 15 years since the world's only commercial supersonic aircraft, Concorde, was retired following an incident after taking off from Paris-Charles de Gaulle Airport.

*Business Airport International* asked readers if they thought supersonic business jets will be taking to the skies once again, or if Concorde is still the best attempt to commercialize the technology. ○

## Your views

"Richard Branson tried to keep at least one Concorde flying and failed. It is old technology now and there is no longer a supply of spare parts. I think we will have a supersonic business jet using the NASA boom-reduction technology in a few years' time, but I believe Barnes Wallis was right when he said that Concorde was already out of date before it flew and that we should be concentrating on suborbital flight. That is the next step we should be taking."

**Graham Stephenson, senior aviation consultant**

"Supersonic travel is nothing new and everybody knows the main advantages well – a reduction in flight time on long-haul journeys being the primary benefit for passengers. Lessons will have been learned from incidents in the past,

and I am sure they have made progress in aircraft technology, as compromising safety obviously isn't an option."

**Helmut Gross, founder of MTS Aviation**

"To say there will never again be a civil supersonic aircraft would, I think, be naïve. However, there is still a lot of work to do in the areas of regulatory, engine technology, boom mitigation and operating economics before it becomes a reality."

**Brian Foley, president at Brian Foley Associates**

"A supersonic business jet would have immediate appeal to some customers, especially very wealthy individuals who might view such an aircraft as the ultimate prestige product. Other types of customers

would be more difficult sales prospects. Speed is an important attribute to business jet operators – far more than it is to airlines – but for most buyers it still ranks below range, cabin size, price, operating cost and customer support. In any event, commercial prospects for a supersonic business jet hinge on mitigating or resolving the critical sonic boom issue."

**Ray Jaworowski, senior aerospace analyst at Forecast International**

"The Paris Charles De Gaulle airport accident at the beginning of this century was the excuse to remove Concorde from service. In my view, there's no question that the aircraft should still be flying!"

**Mike Sparrow, airport manager at London Oxford Airport**

## Your comments

**What do you think?**

**Do you expect supersonic business jets to be in regular use by the end of the next decade? We'd love to hear your thoughts on this or any other topic affecting the business aviation industry, so visit [www.linkedin.com](http://www.linkedin.com) and search *Business Airport International* to join in with the debate.**

**Linked in**

[www.linkedin.com](http://www.linkedin.com)

## Results taken from the weekly poll section on our website\*

\*at time of going to press

## DO YOU EXPECT SUPERSONIC BUSINESS JETS TO BE IN REGULAR USE BY THE END OF THE NEXT DECADE?

**Yes – there will always be a demand**

**55%**

**No – their use is too risky**

**36%**

**Maybe – but I'm not sure there's a market for it**

**9%**

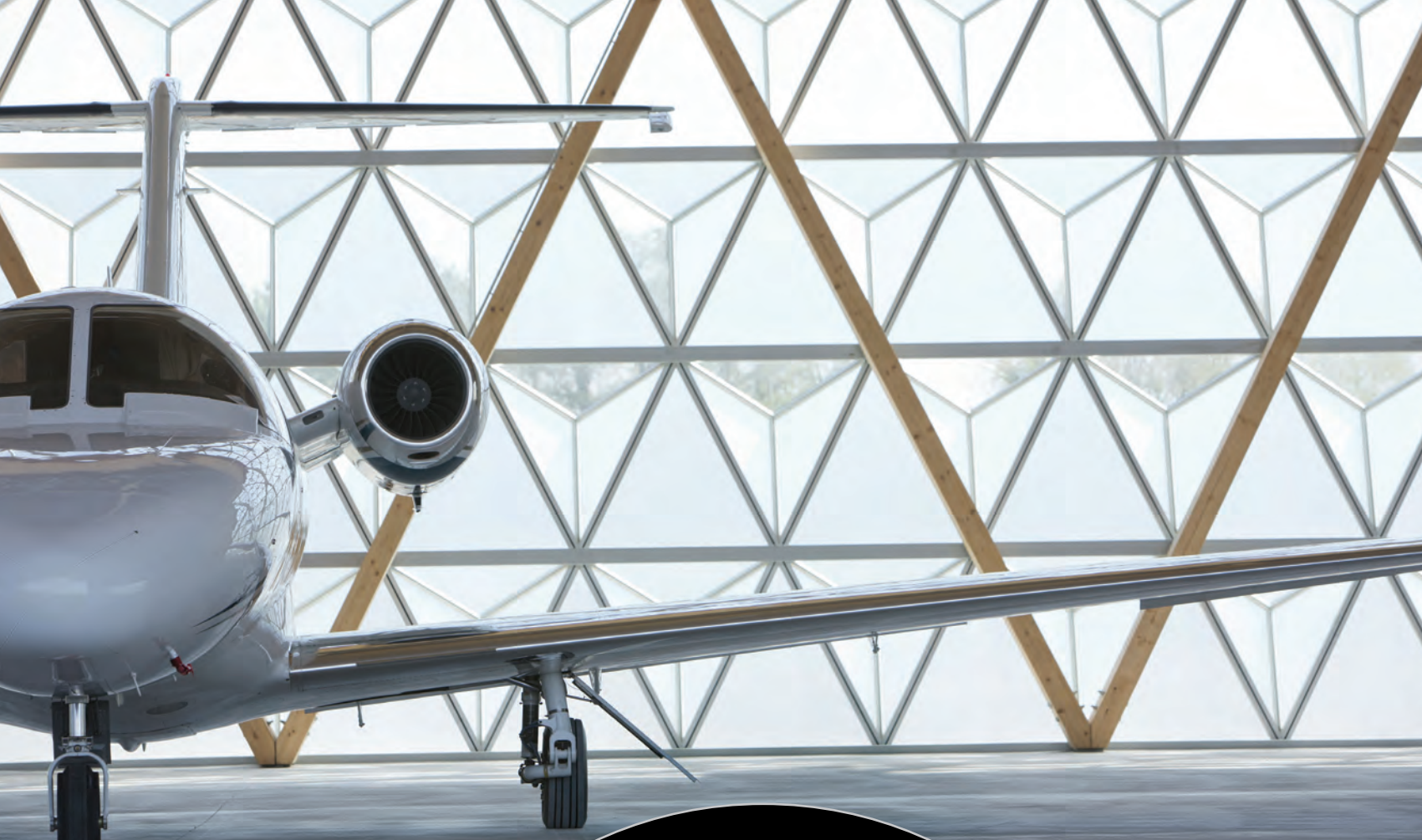
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