

# FLIGHT

## EVENING NEWS

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# Double century

Michael Amalfitano: "NetJets is recommitting to another 100 Phenom 300-series aircraft"



## Embraer announces repeat commitment from fractional giant

Jon Hemmerdinger

Embraer got the show off to a Phenom-renal start this morning, when it revealed that fractional aircraft-ownership company NetJets is committing to buying another 100 of its Phenom 300E light jets.

The deal stands to nearly double NetJets' fleet of Phenom 300s. The operator has taken about 100 of the model since receiving its first in 2010.

Embraer Executive Jets chief executive Michael Amalfitano says the deal demonstrates continued strong demand for an aircraft he calls the most advanced in the light-jet segment.

"NetJets is doubling down on Embraer, and recommitting to

another 100 Phenom 300-series aircraft," Amalfitano says. The deal includes firm orders and options, though Embraer has not broken down those figures. The 100 aircraft are worth more than \$1.2 billion, Embraer says.

Embraer expects to begin delivering the jets in the second quarter of 2023. Some will be configured in the Federal Aviation Administration's required configuration, and some in the configuration approved by Europe's EASA.

Powered by Pratt & Whitney Canada PW500s, the 300E can carry up to 10 passengers. It has 2,010nm (3,723km) of range, maximum altitude of 45,000ft and maximum operating speed of Mach 0.8.

Embraer introduced the Phenom 300 in 2009 and handed over the

first updated 300E variant in 2018. With the 300E, Embraer redesigned the jet's cabin, upgraded its seats and added a new in-flight-entertainment and cabin-management system.

Then, in January 2020, Embraer rolled out a series of 300E improvements. The company updated the jet's Garmin G3000-based flight deck to have a predictive wind shear system, an emergency descent mode and a runway overrun awareness and alerting system. The runway system warns pilots if the approach is too steep or too fast.

The updates also included noise-reduction measures and a performance boost that gave the 300E a bit more speed and range. Embraer has delivered more than 600 Phenom 300s.

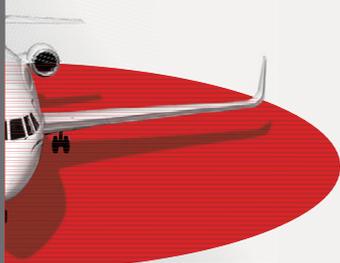
## Daher set for its best year

Daher is enjoying its "best year" with its TBM and Kodiak brands, Nicolas Chabbert, the chief executive of the sister OEMs said at the show this morning.

The family-run French company, which acquired Kodiak two years ago, expects to ship 50 TBM 910s and TBM 940s, together with 20 Kodiak 100s in 2021. This year, it will deliver its 400th TBM 900 Series aircraft, after launching the family in 2014, said Chabbert.

Daher achievements in the past two years have included certifying its Garmin-based Homesafe emergency autoland system on the TBM 940, and unveiling the Kodiak 100 Series III, with an upgraded cabin.

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Dominic Perry

Dassault Aviation is giving an NBAA show debut to a full-scale cabin mock-up of the Falcon 10X, following the launch of the ultra-long-range business jet in May.

Due to enter service in 2025, the Rolls-Royce Pearl 10X-powered twin will not have the longest range in the segment, but in the comfort stakes, class-leading cabin size sees it eclipse its rivals.

And with the mock-up taking centre stage at Henderson airport, prospective customers will be able to see just how roomy the Falcon 10X's cabin will be.

Combining a height of 203cm (6ft 8in) with a 277cm width, the cabin is actually larger than that seen on some regional jets.

Those dimensions have allowed the airframer's design team to create a cabin environment which it says is "more characteristic of a posh penthouse apartment than a leading high-end business aircraft".

Another key feature of the \$75 million Falcon 10X is a high-aspect-ratio 33.6m-wide carbonfibre wing – almost 8m wider than that of the Falcon 6X – which also features retractable high-lift devices, to achieve a combination of efficiency at high speed and predictable low-speed handling to allow access to short runways.

Pilots will also gain a raft of innovations in the cockpit, where a single throttle lever – which Dassault

# Dassault displays its 10X space craft

Newly launched Falcon puts the emphasis on roomy cabin



Dassault Aviation

calls the Smart Throttle – controls both engines. The reverse thrust and airbrake controls are also integrated into the lever. The new layout offers what the company claims is "vastly simplified thrust management". In addition, the crew will benefit from a new digital flight control system (DFCS) derived from the

Rafale jet, plus fly-by-wire sidesticks which feature flightpath stability, removing the need to trim the aircraft. The DFCS will additionally be able to control the engines – for instance, increasing thrust as the sidestick is pulled back.

An upset recovery function also features – activated via a button on

the main console – which will return the jet to straight and level flight.

Dassault says the 7,500nm (13,900km)-range 10X will cruise at Mach 0.85, have a top speed of M0.925, and be able to access airports with steep approaches.

Meanwhile, with the three-strong Falcon 6X flight-test fleet fully occupied as the airframer works towards certification next year, Dassault has brought a full-scale cabin mock-up to NBAA.

A fourth example – the second with a full interior – is expected to fly before year-end and will embark on a global tour intended to evaluate the cabin systems and ensure maturity at service entry.

Lastly, the French manufacturer is also showcasing a revamped interior for the Falcon 8X. This, Dassault says, is "intended to further improve comfort, connectivity and productivity" and features "flowing lines and curved surfaces" to enhance the feeling of "uninterrupted spaciousness".



Bombardier chief executive Eric Martel and senior vice-president, sales new aircraft Peter Likoray

## Bombardier discloses launch customer for Challenger 3500

Bombardier announced this morning that Entertainment Technology Partners chief executive Les Goldberg has become launch customer of the airframer's Challenger 3500 business jet, an in-development update to the Challenger 350.

The Montreal airframer is showcasing the Challenger 3500 at NBAA with a cabin mock-up at the static display.

Goldberg owns a Challenger 350 and has now ordered a 3500. His company, Entertainment Technology Partners, is parent to a host of brands in the events and entertainment industry.

Bombardier has said it expects the

3500 will enter service in the second half of 2022.

News of the first Challenger 3500 customer comes just weeks after Bombardier revealed the project, on 14 September. On 30 September, the airframer disclosed that a separate customer had ordered 20 of the jets.

Welcoming the deal, Bombardier chief executive Eric Martel says: "What better way to celebrate our newest business jet than to showcase our beautiful interior mock-up and to be joined by our Challenger 3500 aircraft launch customer."

See P14

## Pilatus pair selling strongly

Pilatus says sales of the PC-12 NGX and the PC-24 "continue to exceed our original projections", two years after it unveiled the latest version of its single-engine turboprop here at Las Vegas.

Despite the Covid-19 crisis, the Swiss airframer has maintained a "strong backlog of orders" for both the PC-12 NGX and its PC-24 light jet, both of which are on display at BACE, Pilatus chief executive Markus Bucher said at the show.

The PC-24 fleet now stands at more than 120 aircraft, operating in a range of roles from corporate transport to fractional and medevac, he says. He adds that one of its unique selling points over its rivals in the light jet category is its standard large cargo door and configurable cabin.



## We're back in show business

Textron Aviation colleagues Brooke Hupe, Sarah Mayerle, Jimmy Beeson and Erin Hart celebrate being able to meet in person at BACE this morning. After a two-year absence, business aviation's biggest convention will open officially again tomorrow.

# Honeywell lifts long-term industry demand hopes

Annual NBAA forecast predicts delivery of 7,400 business jets between 2022 and 2031



Honeywell senior strategy specialist Javier Jimenez Serrano: purchase plans for new jets remain stable

## Jon Hemmerdinger

Remarkable optimism among business-jet operators has led Honeywell to hike its aircraft delivery expectations for the next 10 years.

The aerospace company's latest Global Business Aviation Outlook, unveiled at a media event in Las Vegas last night, predicts demand exists for delivery of 7,400 new business jets between 2022 and

2031 – 100 more aircraft than forecast in Honeywell's survey last year.

Honeywell pegs the value of those 7,400 jets at \$238 billion. The company's outlook is based on a survey of operators and other factors such as economic analysis.

"What really was good to see – what was surprising – was that the survey is showing over 90% of operators'... purchase plans for new or used jets have not been [affected] by Covid-19," says

Honeywell senior strategy specialist Javier Jimenez Serrano.

Last year's survey showed that 80% of respondents did not expect the pandemic to impact purchases.

The 2021 survey found that some 65% of respondents plan to use their business jets more in 2022 than this year.

"Despite the ongoing challenges presented by the pandemic, the overall health of the business jet market is strong, and growth is expected to continue," says

Honeywell president of aftermarket in the Americas Heath Patrick.

The Outlook predicts that the number of business jets delivered in 2022 will be 10% more than in 2021, with deliveries expected to increase 3% annually through 2031. Long-range types will account for 39% of deliveries and a whopping 72% of value. Roughly one-third of deliveries are expected to be small jets and 26% medium jets.

The survey revealed a slight decrease in the number of new jets expected to be purchased over the next five years due to the pandemic.

But that dip comes amid remarkable strength in the used-jet sales market.

Operators expect, over the next five years, to acquire used jets in numbers equivalent to 28% of their current fleets, up three percentage points from the 2020 survey, Honeywell's Outlook says.

It forecasts demand for more than 6,500 used jets over the coming five years, "putting pressure on an already record-low inventory, and driving additional demand for new jets," says Patrick.

Operators in North America will account for an estimated 63% of demand for new jets over the next five years. Europe will account for 16%, Latin America for 5%, Asia-Pacific for 12%, and Africa and the Middle East for 4%, Honeywell says.

"The main takeaway is that the survey finds that new-jet purchase intentions remain stable between 2021 and 2026," says Jimenez Serrano.

## JSSI supports carbon offset offer

Jet Support Services (JSSI) and Avfuel are offering to match carbon credits bought at the show by customers of JSSI's hourly cost maintenance (HCM) programme.

Each credit offsets a tonne of carbon dioxide emissions by investing in projects that have a positive impact on the environment. Clients who register for the programme at BACE can offset their emissions when reporting their October flight activity in the MyJSSI portal. When they do, JSSI and Avfuel will match these with up to 10 additional flight hours per aircraft.

"JSSI's HCM clients represent approximately 10% of the world's business aviation fleet, so by further encouraging adoption of sustainability initiatives, we can take a step toward the industry's goal of carbon neutrality," says Neil Book, chairman and CEO of JSSI.



Book: A step towards carbon neutrality

JSSI was set up 32 years ago and provides parts support and engine and auxiliary power unit leasing packages to operators of around 2,000 aircraft.

## More business wins for Universal InSight

With certification of its InSight Integrated Flight Deck Solution either under way or completed on five different aircraft platforms for a total of nine different STC solutions, Universal Avionics (UA) has reported increased interest in its system among business jet operators.

Building on UA's Citation VII STC – a F900B STC was recently awarded and included UA's SBAS FMS and UniLink data communication system – other aircraft platforms on the way to similar upgrades in 2021 include Falcon 900B with factory FMS, Falcon 50, Falcon 20, Hawker 800A/XP and Gulfstream G-III.

To celebrate this milestone for InSight, UA is offering special upgrade incentives to operators until 15 December 2021.

The InSight Display System is UA's flightdeck solution, a fully integrated display system for enhanced situational awareness and improved safety. It features an embedded next-generation 3D Synthetic Vision System (SVS), interactive digital map, embedded charting, map support and advanced radio control with embedded radio tuning. The system is complemented by the latest in human machine interface (HMI) design, including touch control interactions with the flight plan and more to reduce crew workload.

The InSight modernisation package is designed to create fuel savings and decrease flight times, and is key to preparing operators for the FAA's NextGen and the European Union's SESAR.

## Retrofit specialist shows benefits of new product on King Air 200

Pilar Wolfsteller

**T**amarack Aerospace is showing off its active winglet, called Smartwing, mounted on a King Air 200 exhibit at Henderson Executive airport.

The winglet, which can be retrofitted onto older aircraft or installed in new production aircraft, can help reduce fuel consumption by a multiple of that of a traditional, passive winglet, and is designed with additional aerodynamic efficiency and stability in mind.

The Sandpoint, Idaho-headquartered company says that the winglet will provide improved mission capabilities such as “enhanced high/hot take-off performance, extended loiter time, increased payload, and support for sustainable flight including noise reduction”.

Tamarack’s founder and chief executive Nick Guida says that the secret behind the winglet’s performance is the increase in the aircraft’s wingspan, and thus its aspect ratio. A longer, narrow wing - as on a glider - has much higher aerodynamic efficiency than a short wide wing.

“When you increase the aspect ratio of a wing, you reduce the



Nick Guida demonstrates the innovative winglet

drag,” Guida says. “We extend the wing by four feet each, and then put on a winglet. In that way we can triple, or even quadruple what a typical passive winglet does.”

When adding a winglet, the structural load on the wing increases. Instead of adding metal to the wing to withstand the additional load, however, Guida has created a

way to momentarily disengage the winglet so that the wings do not become overstressed.

“I had the idea that if we were to turn off the winglet during the high-g events that caused the stress, during manoeuvres or wind gusts... we don’t have to reinforce the wing,” he says.

These types of sustainable technologies are becoming

increasingly important for the aviation industry as it seeks to reduce its carbon footprint in the coming years. Just last week numerous trade associations reiterated an industry-wide goal of carbon neutrality by 2050.

And improved fuel efficiency also translates to impactful cost savings, Guida adds.

## Textron displays mock-ups of next-generation duo

Textron Aviation has elevated its offering in the light and midsize business jet segments by launching updated variants of its Cessna Citation M2 and Citation XLS.

The Wichita airframer revealed the new “M2 Gen2” and “XLS Gen2” at the show today.

Textron is highlighting the jet’s updates in cabin mock-ups located at Henderson’s static display. Deliveries of M2 Gen2s will begin by the end of the first quarter of 2022, followed by XLS Gen2 deliveries starting by the end of the second quarter.

“The updates to the entry-level light jet

and the midsize business jet usher in the next generation of aircraft design and technology, increasing comfort and productivity for passengers and pilots,” Textron says.

“With the mindset that no detail is too small when shaping customer flight experiences, we’ve touched all areas of these aircraft to create the Citation M2 Gen2 and the Citation XLS Gen2 - from cockpit to cargo area and everywhere in between,” says Christi Tannahill, Textron senior vice-president of customer experience.

Features new to the M2 Gen2 include wireless

smartphone charging pads and USB-A ports at every seat in the cabin. The M2 Gen2’s cockpit will also provide an additional 3in (7.6cm) of legroom for the co-pilot, and “cabin entry threshold materials have been improved for durability and maintainability”.

“The M2 Gen2 brings the latest cabin amenities and technological advances often found in larger jets to the entry-level light jet segment,” Tannahill says.

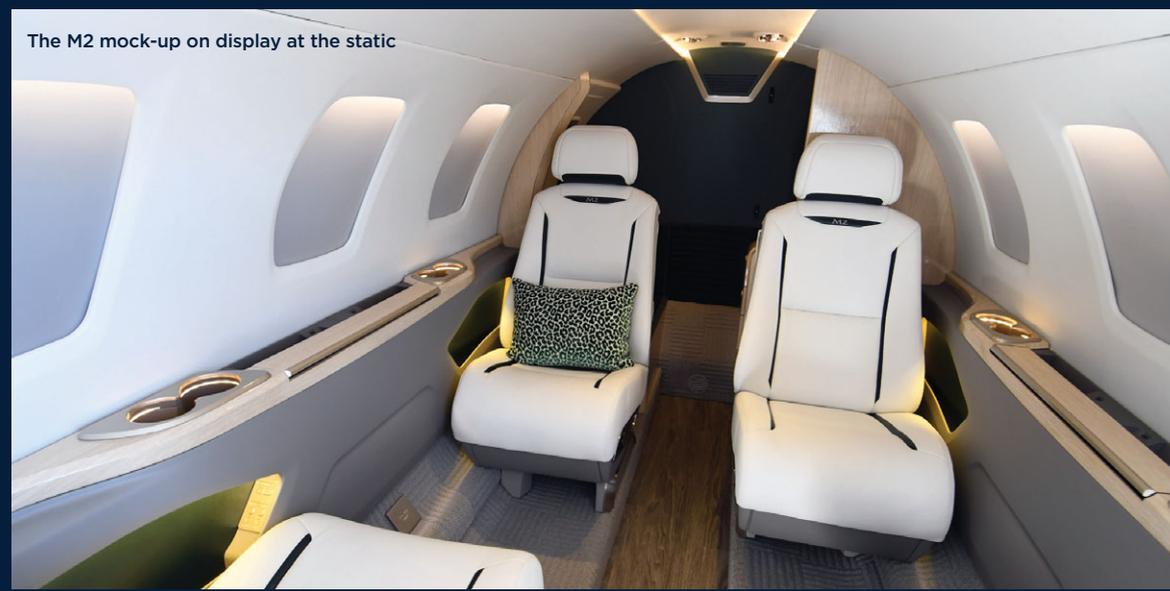
Cessna introduced the Citation M2 in 2013. The seven-passenger jet, powered by Williams International FJ44s, has 1,550nm (3,723km) of range and maximum cruise speed of 404kt (748km/h).

Updates to the larger Citation XLS Gen2 include a “new lighted air-stair door” and new entry curtain. The curtain provides better protection from inclement weather when on the ground and “improves cabin acoustics in flight,” Textron says.

Textron also gave the XLS Gen2 a redesigned pedestal seat with “individual controls, new styling and optional quilting”. The forward couch has the option to be folded down, allowing passengers to access baggage.

The company says the XLS Gen2 has an “intuitive wireless cabin management system” with a touch-screen moving map, wireless charging stations for personal devices and USB charging ports.

The aircraft also has an optional “immersive speaker-less sound system” from Bongiovi Aviation. That company makes a speaker-less sound system for Cessna’s Citation Latitude and Longitude.



The M2 mock-up on display at the static

Jon Hemmerdinger

Honeywell has developed a new line of avionics that the company says is lighter and more intuitive than current systems and that significantly advances the state of flightdeck connectivity and autonomy, potentially one day allowing for fewer pilots in the cockpit.

The company revealed its new “Anthem” flightdeck just ahead of BACE at a 5 October event in New York City.

Anthem can be adapted to any class of aircraft – from small in-development air taxis to general aviation types, business jets to commercial airliners, Honeywell says.

“Anthem was designed from the start with connectivity and autonomy as its core tenets. It was built for a future that enables increasing levels of autonomy,” it adds.

Honeywell gave Anthem advanced data-transmission capabilities and safety features that include 3D airport moving maps, track-based synthetic vision and a 3D runway overrun alerting and awareness system. Such technologies can help prevent ground collisions and other runway accidents, Honeywell says.

The company describes Anthem’s user interface as “intuitive as a smartphone”.

“It will look like a cockpit, but from a behavioural experience, it will feel like a smartphone,” Honeywell vice-president and general manager of avionics Vipul Gupta tells *Flight Evening News*. “It’s a transformational change.”

Honeywell says that two customers – air taxi developers Lilium and Vertical Aerospace – have chosen to equip their aircraft with Anthem. German firm Lilium is developing its seven-seat Lilium Jet, and UK-based Vertical is developing a four-passenger air taxi called VA-X4. Those companies aim for their aircraft to be operating commercially in 2024.

Gupta says the company remains dedicated to its current-generation avionics, citing its Primus Epic product. But he says previous technologies cannot match Anthem. “Any proposals we are doing right now, we are doing with our Anthem flightdeck,” he adds.

Honeywell is among a handful of companies battling in the avionics industry. Versions of its Primus Epic system are found on some of the sector’s largest, most-capable business jets – Gulfstream’s G500, G550, G600, G650 and in-development G700, for example. Dassault’s Falcons, including the



User interface builds on smartphone technology

# Honeywell sings Anthem’s praises

French airframer’s in-development 10X, also have a Primus Epic suite.

Top competitors are Collins Aerospace, which provides its Pro Line-based flightdeck for Bombardier’s business jets, and Thales.

Anthem, the fifth generation of Honeywell’s integrated avionics systems, is 50% lighter than current-state avionics, says Gupta.

Honeywell achieved that reduction partly by making Anthem’s backbone a “system on chip” – an integrated circuit that performs various functions and consumes less power than older technology.

“You don’t need to have big boxes and cooling systems. It allows us to reduce the size,” says Gupta. “None of the integrated flightdecks have it today.”

Computing power comes from multi-core processors (each with four cores). That is not unique; other avionics systems have multi-core processors, though they do not run all available cores. Anthem will, however, use all four processor cores, boosting its processing speed.

Processing can be scaled up by adding “distributed processing modules”, which are “about the size of a paperback book” and can be located anywhere a manufacturer chooses on an aircraft, Gupta says.

Anthem has a “secure cockpit browser” feature that can run

applications developed by third parties like aircraft manufacturers. Examples include apps for weather, those that perform specific calculations and those that generate a “synoptic page” – a visual summary of aircraft information.

Honeywell designed Anthem’s touchscreens to be intuitive by taking cues from the consumer electronics sector. Previous-generation avionics respond to text commands entered by pilots. But Anthem uses “visualisation and modern graphical- and gesture-based” interfaces. That means pilots can access information by touching icons on cockpit displays; the system responds to finger “swipes”.

Pilots can still enter text via what Honeywell calls a “scratch pad”; the system responds to such inputs with suggested prompts. It all eases the process by which pilots find and enter information and complete cockpit tasks, Gupta says.

Honeywell calls Anthem the industry’s “first always-on, cloud-connected avionics”. The system transmits data from the aircraft to the ground, and from the ground to the aircraft. Ground-based servers can send data to “any person involved in a flight’s operation”, says Honeywell.

“Things like maintenance data, flightplans and overall aircraft status are stored automatically by the avionics in the cloud and accessible by any authorised user from anywhere,” Gupta says.

The system is “agnostic” in how it transmits information, he adds. Data can be sent via high- or low-speed satellite systems, or via cellular networks, Bluetooth connections or high-speed wireless internet.

The company stresses that Anthem’s advanced data-transfer capabilities can reduce pilot workload. The system can integrate with pilots’ flight-planning applications. Pilots can “create and transmit flight plans to the aircraft from anywhere”, and the onboard system can remotely load flightplans

– a feature Honeywell calls an industry first.

Through Anthem, pilots can send messages to ground-based service providers, ensuring fuel companies or caterers, for instance, are available upon landing.

Honeywell describes connectivity as key to Anthem’s advanced autonomy features. It says the system can automate manual pilot tasks and be upgraded over time to perform “increasing levels of autonomy”.

There is already a push in the commercial air transport market towards the future development of aircraft that can be operated safely with fewer pilots; the next generation of single-aisles are likely to be single-pilot capable. That trend is also likely to find its way into business aviation.

With Anthem, Honeywell is ready for that shift, Gupta says. Anthem has the ability to support eventual single-pilot operations – meaning a single pilot flying an aircraft that now requires two pilots, like business jets and single-aisle airliners. Anthem can also support “reduced-crew operations” – a term that applies to larger jets like widebodies. Today, such aircraft require four pilots for some long-haul international flights. But with Anthem, three pilots could be sufficient, Gupta says.

Complete flight autonomy seems unlikely any time soon, especially considering the hurdle of winning over regulators. Even developers of eVTOL aircraft – which some argue need full autonomy to make them commercially viable – are first building piloted versions of their vehicles, even if there is an eventual aspiration to full autonomy.

But Anthem could allow that, too, says Gupta.

“Anthem is designed to grow, adapt and support additional automation, leading to complete autonomous capabilities in the future, as regulations allow,” says Gupta.



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# A cloud-based fix without the clicks

New business aviation platform will integrate suite of software services into one easily accessible hub, says Collins

Jon Hemmerdinger

Collins Aerospace is showcasing Izon, a cloud-based business-aviation platform that integrates various operational services and will be compatible with some third-party-developed applications, after a launch just ahead of coming to Las Vegas.

The product, revealed by the aerospace giant on 7 October, will be accessible on mobile devices and available to users involved in a broad range of flight operations services.

The company created Izon in response to an opportunity: today's business jet operators regularly use a host of differing software platforms, some of which are offered by Collins. The platforms often require separate accounts and log-ins, and some are not readily accessible on smartphones.

"They have to do 12 clicks to [get] the information they need," says Collins vice-president and general manager for information management services LeAnn Ridgeway. "We are modernising this, bringing solutions that are best in class, and making them accessible in a more user-friendly software solution."

Izon will simplify how operators manage their aircraft by combining various services into a single platform with a "modern interface and customisable dashboard," Collins says.

"Think of it as a hub for all things aviation," adds Ridgeway. She calls Izon a "business aviation digital

experience" and a "connected platform... that is designed to streamline productivity."

With Izon, Collins intends to "merge" various "information streams that come into and out of business aviation operators," according to Ridgeway. "A lot of these today are needlessly complex."

The company is rolling Izon out in stages due to the complexity of merging the various technologies currently

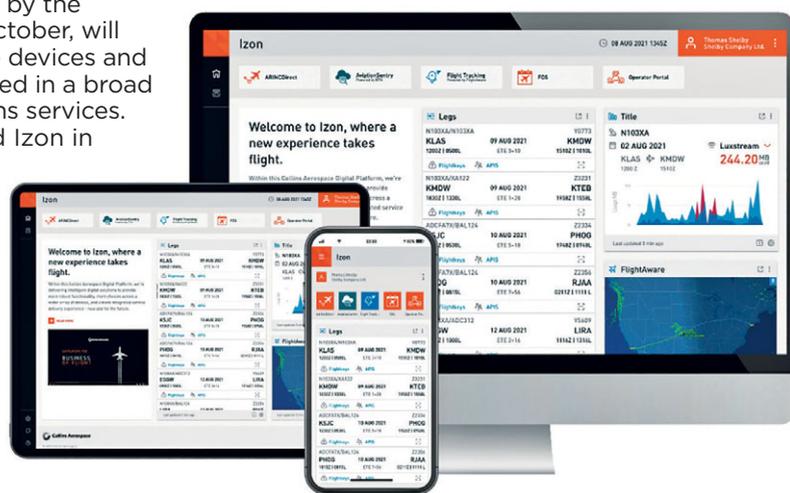
in use. Izon users will initially have to access Collins' suite of ARINCDirect products, which include weather, flight planning, flight operations management, safety and aircraft connectivity services. Collins will also make third-party applications accessible via Izon.

Collins intends to roll out more Izon features in 2022. Those include the ability for users to access navigation databases and to connect to two inflight entertainment

services produced by Collins: its on-demand video product Stage and its live-TV offering Tailwind.

"As the platform grows and evolves, the portal will allow for Collins and third parties to also share and conduct data transactions," Collins says. "We created this integrated platform that puts everything you need at your fingertips." Customers do not need hardware to use Izon, nor do they need to download software. The system will be cloud-based and internet-accessible.

"Whether you are sitting in the maintenance part of business aviation, or a pilot... you are going to be able to tailor [Izon to] your role," Ridgeway says.



Collins plans to roll out more Izon features in 2022

Collins Aerospace

## In brief...

### Legacy 500 in pieces

Aftermarket specialist C&L Aerospace has acquired an Embraer Legacy 500 inventory after the teardown of a low-cycle example. The inventory totals 1,100 items from control surfaces to avionics, landing gear and other rotatable and structural components. Bangor, Maine-based C&L is exhibiting at the show and, until now, has specialised in aircraft including the Bombardier Challenger family and Hawkers.

### Sirius business

Honda Aircraft is offering its North American customers a three-month subscription to SiriusXM's satellite-delivered aviation weather and other information services with the purchase of new aircraft.

## Wyvern blessing for Constant SMS

Constant Aviation has become the first independent maintenance, repair and overhaul business to receive SMS Level 4 certification from Wyvern, a specialist in aviation safety risk management and training. The rating is specific to an MRO safety management system (SMS), and Level 4-rated MROs are deemed to have a fully effective SMS.

Constant's SMS was accepted by the Federal Aviation Administration in April 2021, making it only the fourth MRO out of the more than 4,500 maintenance organisations in the US to achieve that designation.

"This achievement is made possible by ensuring that all of our team members have the skills, training, resources and conditions they need to ensure their safety, the safety of the flight crews and the safety of the passengers who fly on the aircraft entrusted to us," says chief executive David Davies.

## Fall in used jets for sale

Private jet broker Colibri Aircraft has observed a decline in the number of pre-owned jets for sale, which it attributes to the increased popularity of business aircraft during the Covid-19 crisis.

Colibri says the global decline has been led by the USA, which kept state borders open during the pandemic and was less affected by international border closures. A key factor driving the drop in the supply of private jets for sale was a strong desire to travel in an environment offering a lower risk of Covid transmission.

Moreover, significantly reduced airline service made airlines less convenient at the height of the pandemic, which meant that more private jet owners wanted to keep hold of their aircraft and a large number of first time buyers entered the market, believes Colibri.

## SD adds Certus to Xperience

Satcom Direct (SD) has signed a deal with connectivity provider Skytrac to become an exclusive reseller of Skytrac Iridium Certus hardware and data services for the business aviation sector.

SD offers connectivity solutions for aircraft of all sizes, so the agreement aligns with its strategy and adds the range of Iridium Certus products to the SD Xperience portfolio. A full suite of options is thus available to satisfy the increased demand for connectivity from all sizes of business aviation aircraft.

The Skytrac products and services bring greater flexibility to the SD Xperience portfolio to support internet browsing, email, voice, and text services in the cabin, even on smaller aircraft. Flightdeck tools include



SD aims to provide a range of communication services from a single resource

improved situational awareness through flight tracking, weather alerts, and FANS capabilities. The additional products augment SD's commitment to provide cabin

and flightdeck communications services, aircraft connectivity hardware, data management, and flight operations software from a single resource.

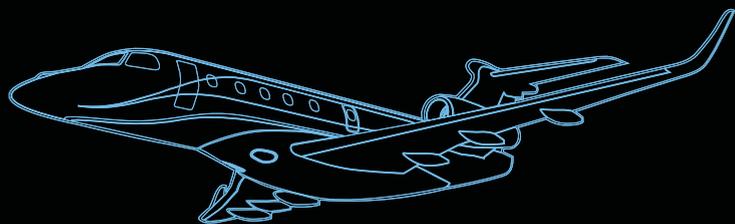
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Las Vegas's second airport – a favourite with the gambling jet set – has spent weeks gearing up to host the static display

Pilar Wolfsteller

**H**enderson Executive airport, Las Vegas's secondary airfield, sits about 6 miles (10km) south of the city's famous "Strip". A preferred gateway airport for travellers arriving to the world's gambling capital in private jets, the airfield is preparing to host the static display at the NBAA convention, as it has every other year for a decade.

The airport's planning for the annual show begins in February, says Ben Czyzewski, assistant director, general aviation at Clark County department of aviation.

The department manages the three Las Vegas area airports – Henderson, North Las Vegas and Harry Reid International – as well as two smaller fields.

"We're very excited about this year's NBAA," Czyzewski says. "There's a lot of effort that goes into it and though planning began more than six months ago, a week to 10 days out, it's all hands on deck for me and my staff."

In the days leading up to the event, Henderson's 30 employees



Airport staff have been 'all hands on deck' preparing for show

have been sprucing up the airport. That includes fresh paint on the airfield as well as the parking lot kerbs, preparing for chalet construction, co-ordinating with caterers, and planning the logistics of accommodating the more than 50 aircraft on the static display. The airport's north ramp hosts about 13 company chalets.

That is about the same number as in pre-pandemic times, proving the industry is well on its way to returning to normal, Czyzewski says. But one thing will be different at this year's event. "As a result of the pandemic... used aircraft are at an all-time premium right now," he says.

Other business aviation executives have likewise recently noted that the used-jet sales market is red-hot.

"Typically the show has some secondary market aircraft. But this year, none at all. Just like cars, they're selling like crazy. A lot of people who use business aviation are shying away from commercial [air travel], due to health concerns. And so they're moving to fractional ownership schemes and charters," says Czyzewski.

The BACE show's economic benefit to the Las Vegas Valley is usually about \$40 million, he adds. And though most international visitors are still prevented from

entering the USA – that travel ban is set to lift in early November, several weeks after the end of BACE – he says the airport is still anticipating just under 25,000 participants at this year's show.

"It seems like lately people are spending more when they get out to Las Vegas," he says. "So hopefully the economic impact will be similar, even with fewer participants."

In addition to aircraft on the static display, the airport accommodates about 100 visiting aircraft, with more parking at North Las Vegas as well as the city's main international and commercial hub, Harry Reid International.

## Garmin talks up upgrades for Excel and PC-12

Garmin has kicked off NBAA by highlighting the sales success of its Cessna Citation Excel and XLS avionics retrofits, while calling attention to a new engine-monitoring capability available for Pilatus PC-12s.

"We already have 10% of the fleet that has done this upgrade in the last two years," Garmin aviation executive vice-president and managing director Phil Straub says of the Citation upgrades. "These airplanes can have a long life with modernisation programmes."

Garmin offers its G5000-based integrated flightdeck upgrade for Cessna's midsize Citation Excel, and the succeeding Citation XLS.

"The G5000 integrated avionics suite modernises the cockpit with additional capabilities, significantly reduces operational costs, increases situational awareness of the flightcrew and solves long-term concerns related to legacy avionics parts obsolescence," Garmin says.

The company landed its first Citation Excel/XLS retrofit customer in 2019 and has since updated about 70 aircraft with its G5000 system, replacing the jets' earlier Honeywell Primus 1000 avionics, says Straub. Globally,



G5000 in Citation XLS

some 700 Citations are eligible for the upgrades.

The upgraded displays are landscape-oriented and have split-screen capability. The system provides weather and flightplan information, airport diagrams, charts, checklists, and safety features such as terrain-awareness warning and traffic alert and collision avoidance systems.

The avionics provide a "fully digital automatic flight-control system" that includes an emergency descent mode (which enables the autopilot in cases of cabin pressure loss) and under-speed protection (which helps manage airspeed and assists

with go-arounds), Garmin says.

It also provides synthetic vision (which presents a digital representation of the ground), SurfaceWatch (which helps prevent pilots from taking off on taxiways or incorrect runways) and Doppler weather radar. Operators can also purchase a wireless connectivity system called Connex, which can transfer flight plans between the avionics and mobile devices.

Other systems integrated into the Citation's G5000 cockpit include automatic dependent surveillance-broadcast Out and Controller Pilot Data Link Communication – both for departure clearances and for en-route instructions.

"Intuitive touchscreen controllers serve as the pilot interface to the flightdeck and contribute to the ease of operation and seamless transition between various pages," says Garmin.

The avionics company in recent days also revealed an expanded engine monitoring feature, the TXi Engine Indication System (EIS), for the -45 and -47 variants of the PC-12 turboprop. Garmin expects to receive certification for the update – available for aircraft with Pratt & Whitney PT6-67Bs and PT6-67Ps –

in the first half of 2022.

Garmin has been retrofitting PC-12s cockpits for more than 10 years, offering a-la-carte upgrades that now include its G600 TXi flight displays. The EIS replaces traditional engine gauges by displaying engine information on the TXi displays.

"With this upgrade, pilots will be able to more clearly read and analyse critical engine, fuel and electrical parameters while simplifying the cockpit," says Garmin. "When using multiple TXi displays, pilots can also benefit from display back-up capability to help prevent the loss of primary flight display or EIS information during a single-display failure."

The EIS display has "distinct colours, bands and radials to clearly depict normal operating ranges as well as limitations", and helps pilots "maintain the engine within its allowed limits to avoid engine exceedances".

Garmin is also highlighting Deutsche Aircraft's decision to equip its in-development D328eco with G5000 avionics. The German airframer aims to introduce the modernised Dornier 328 twin-turboprop by 2025.

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Aviation data provider launches two updates as it prepares for a new era as part of Collins

# Tracking up: FlightAware maps out product strategy

Bernie Baldwin

Flight data provider FlightAware has this morning highlighted two updates to its business aviation portfolio of products – features coming as the company prepares for its acquisition by industry giant Collins Aerospace.

At a press event this morning, 16-year-old FlightAware promoted a new lower-cost tier to its FlightAware Global subscription service and a new “flight-leg sharing” feature that lets users share flight-specific data with designated people or organisations.

FlightAware chief executive Daniel Baker says the updates come at a time of remarkable growth for business aviation – when an increasing number of new travellers are discovering private aircraft.

“The timing is really good,” he tells *Flight Evening News*, noting that the number of business aviation flights this year in the USA has been some 20% higher than in 2019.

The updates include a new lower-cost “Silver” tier of the company’s FlightAware Global product, which is a subscription service for the business aviation community.

FlightAware Global has long been a product for business aircraft operators who have “blocked” their aircraft from being tracked by other FlightAware users. The Global product includes a “selective unblocking” feature that lets customers allow specific people (such as family members) or organisations (fixed-based operators, for example) to view aircraft data.

Global also includes a suite of other features, like taxi-time updates, cockpit and runway information, “predicted” estimated arrival times, weather maps and flight history information.

FlightAware’s new Silver package – which adds to Gold and Platinum levels – excludes “selective unblocking” but retains the other features, which are useful to flight departments, says Baker.

FlightAware unveiled the Silver package in October 2020 – but that was a “soft launch” owing to the lack of an air show last year at which to make a splash. FlightAware is making that splash now.

Additionally, the company this morning revealed a new feature for FlightAware Global called “flight-leg sharing.” While the “selective unblocking” feature lets customers open an aircraft to tracking by other people, “flight-leg sharing” lets customers share flight-specific data.

“We are releasing the ability for aircraft operators using FlightAware Global to provide one-time access to a specific flight leg,” says Baker. “It’s being launched at the show.”

So, for instance, flight operators can share data about a flight with limo drivers or caterers. Likewise, charter operators can share flight-specific information with their customers – and those viewing the otherwise-restricted data need not even be a FlightAware account holder, Baker says.

The product roll outs come as the Houston company prepares a major transition that will see it become part of the USA’s big-aerospace industry. In late August, Collins said it signed a definitive agreement to purchase FlightAware for an undisclosed sum. Collins, part of aerospace conglomerate Raytheon Technologies, anticipates the purchase will close in the first quarter of 2022.

FlightAware’s Baker declines to disclose the sale price or to discuss the expected management structure of FlightAware following the purchase. He also declines to specify what role he might play, other than to say he will have opportunities within the Collins family. FlightAware

has some 130 employees.

Collins intends to place FlightAware under its information management services portfolio, which is within its avionics business unit.

“FlightAware is the recognised leader in data collection, analytics and customer experience, which will help Collins unlock the full power of the connected ecosystem for our customers,” Collins’ head of avionics Dave Nieuwsmas said in August. “FlightAware’s flight tracking and data platform, the largest in the world, has the potential to deliver new capabilities and innovations across our entire business.”

The deal marks a major evolution for a company that 39-year-old Baker – a longtime software engineer who holds a commercial pilot license – started as a means of filling what he viewed as an untapped opportunity.

Baker notes that the Federal Aviation Administration has long made aircraft data available for free. But before FlightAware and its competitors, that information was largely only used by airlines.

“There was all this data out there that wasn’t being leveraged... As a pilot, I wanted to access that [data],” he tells FlightGlobal. “I wanted friends and family to be able to track me.”

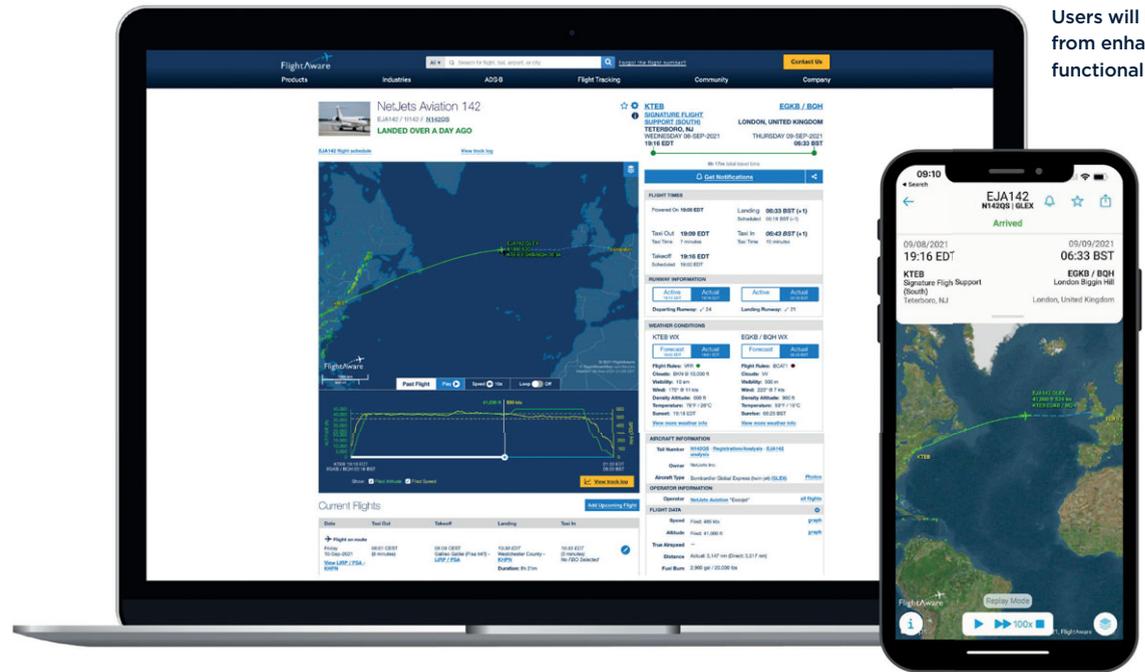
With the data, Baker launched FlightAware in 2005.

“The goal was to create an internet-based transparent interface into the air traffic control system,” he says. “I started this out of a passion.”

In short time, he started receiving calls from charter operators and fractional-aircraft ownership providers.

“The demand and interest for

Users will benefit from enhanced functionality



FlightAware



FlightAware chief executive Daniel Baker

Pilar Wolfsteller

Las Vegas is back in business after weathering more than a year during which its convention centre remained quiet and regional officials questioned how long it would take for the city to return to some semblance of normality.

But the past three months have proven that Las Vegas is resilient.

US domestic flights to Sin City are again full to the last seat, and international carriers – among them British Airways and KLM – are beginning to reinstate flights paused during the past 19 months. Barely three months after Las Vegas officials lifted capacity restrictions, casinos and hotels are reporting record occupancy and earnings.

Beginning with World of Concrete in June, convention-goers have returned to the desert in droves. And though some shows have cancelled, NBAA is back, seeking to build momentum for an industry that by several indicators actually grew amid the pandemic.

According to the Las Vegas Convention and Visitors Authority, about 3 million people visited Las Vegas in August – the most-recent month for which statistics are available, slightly lower than the 3.3 million who came in July, which had been the strongest month since the pandemic began in March 2020.

Total hotel occupancy was almost



The USA's capital of fun has been quiet for much of the past 18 months. But the famous city is now firmly back in business

73% in August – with lodging rates on the city's famous Strip topping even that number – indicating that the city has almost fully recovered from last year's pandemic-driven slump.

The city's casinos have reported record income almost every month this year as US domestic travellers catch up on what they missed in 2020. August's gaming revenue in Clark County was 25% higher than during the same month in 2019. Strip casinos posted a 20% rise in revenue

in August 2021 over August 2019.

During the pandemic, the city gained a major sports franchise, the Las Vegas Raiders American football team, and a new sporting and concert venue – Allegiant Stadium – that officials hope will be a new cash driver for the city. The Rolling Stones are slated to perform there in November.

But while visitors and residents are cheering at a long-awaited return to normal operations, one of Las

Vegas' biggest annual conventions, the National Association of Broadcasters show, which was scheduled to run parallel to NBAA, cancelled late last month. Organisers cited the coronavirus' highly-contagious Delta variant and associated "insurmountable challenges". Numerous headline companies had pulled out of the event, making it unviable. It's been rescheduled for April 2022.

NBAA has told convention participants that its Covid protocols will be strict, with vaccination and mask-wearing required at all convention events.

NBAA's exhibitors will be occupying the new and modern West Hall of the city's convention centre, which officially opened in June. The hall offers 131,000sq m (1.4 million sq ft) of space in an open and airy steel-and-glass construction, with spectacular views of the famous skyline.

The new venue also gains an unusual feature in the convention centre loop – an underground tunnel 12m (40ft) below the surface developed by Elon Musk's The Boring Company, designed to shuttle convention attendees throughout the 81ha (200 acre) convention centre campus in all-electric Tesla vehicles.

As typical, the static aircraft display is back at Henderson Executive airport, about 6 miles (10km) south of the city's main airport.



The *artistry*<sup>1</sup> behind every journey

Jon Hemmerdinger

**B**ombardier is shaking up BACE this year by debuting a cabin mock-up of its in-development Challenger 3500, giving attendees the opportunity to experience Bombardier's significant cabin updates.

The company revealed the 3500 development programme – and the cabin mock-up – during a press and employee event in Montreal on 14 September.

Now, that mock-up is at the static display at Henderson Executive airport.

Scheduled for service entry in the second half of 2022, the super-midsize 3500 will have features standard on larger-cabin aircraft, like the manufacturer's Globals. Bombardier is also making a few technical changes. Those include reducing the Challenger's cabin pressure altitude and equipping the jet with its first auto-throttle system.

The 3500's performance specifications remain the same as those for the 350, which entered service in 2014. The 3500 will be a 10-passenger jet powered by twin Honeywell HTF7350 engines, with 3,200nm (5,926km) of range and top speed of Mach 0.83. It will cost \$26.7 million.

"We are raising the bar on our competition with a refreshed product," says Bombardier chief executive Eric Martel. Business jet manufacturers often promote the range and speed of their products. But, at the end of the day, a jet's "cabin is the most important", Martel insists.

The 3500 programme marks renewed attention by Bombardier to the super-midsize segment following several years during which it focused heavily on its Global line of large-cabin business jets. Bombardier recently divested its commercial aviation businesses and intends to end production of Learjets next year, changes that will align Bombardier solely to the medium- and large-cabin segments, which it says are the most-profitable and fastest-growing in the business jet market.

"We have been leading that market segment," Martel says of the medium-cabin space. "The changes we are making now will keep us leaders in that position for a long time."

The 3500's technical changes include the auto-throttle system and a reduced cabin pressure altitude. When cruising at 41,000ft, that will be equivalent to 4,850ft – about



Nuage seats will be standard

# Step inside the newest Challenger

Bombardier is giving show-goers a chance to experience up close the revamped cabin that will grace the latest version of its top-selling super-midsize jet

2,000ft less than experienced on the 350. Bombardier will make the change by reinforcing the jet's baggage-compartment bulkhead, says manager of sales engineering Mathieu St Cyr.

"We are pumping more air into the bubble," he adds. "At 41,000ft, it is going to feel as if you are sitting on the ground in Denver."

But many updates are in the cabin. Bombardier is giving the 3500

its Nuage leather seat, introduced on the Global 7500, which entered service in 2018.

"We wanted to make something more sculptural – automotive, almost," says Laurence Casia, Bombardier manager of industrial design and cabin innovation.

The seat, made by a Bombardier supplier, has a tilting headrest and a "floating base" and allows for a "deep recline". Passengers

can tuck their feet under the front of the seat, as people often do when working or eating at a table. Bombardier will not simply pull the same seat from the 7500 for the 3500, but has rather "refined" the design to make it "perfectly suited" for the smaller jet.

"It's the first time that a seat of this calibre is in the medium category," says Casia. The Nuage seat has more angles and is more sculpted than traditional business-jet seats, which can be "boxy", he adds. "It's an approach we have taken to add a feeling of spaciousness and balance."

Bombardier is also updating the Challenger's entertainment system. The 3500 will have voice-control cabin technology that works through an app on personal entertainment devices. The app will allow passengers to control various cabin features – lighting, temperature, audio – by speaking commands. The 3500 will have a forward media compartment in which customers can connect their devices to the aircraft's entertainment system.

It will also have Ka-band connectivity, a 24in, 4K-definition monitor in the forward cabin (and an optional second aft-cabin monitor), and wireless phone chargers. The 3500's "immersive sound system" will pump audio from speakers located behind the jet's walls. The system will include a feature Bombardier calls "audio sweet spot", which lets passengers optimise sound at specific locations of the cabin.

"What we are doing today is a major improvement. Technology is evolving so fast," Martel says.

The 3500 has new cabinet latches, and side ledges composed of various materials – aluminium, leather, veneer and glass buttons. The buttons have "haptic" feedback – meaning they vibrate gently when pushed, like buttons on some smartphones (a feature made possible with small motors). The cabin has a redesigned divan, which includes a beverage storage drawer.

In the galley, the 3500 will have additional vertical space between the counter and the bottom of the top shelf, creating enough room for customers to equip their jets with high-end coffee machines. The galley will have "soft-close" drawers and a new bi-fold door.

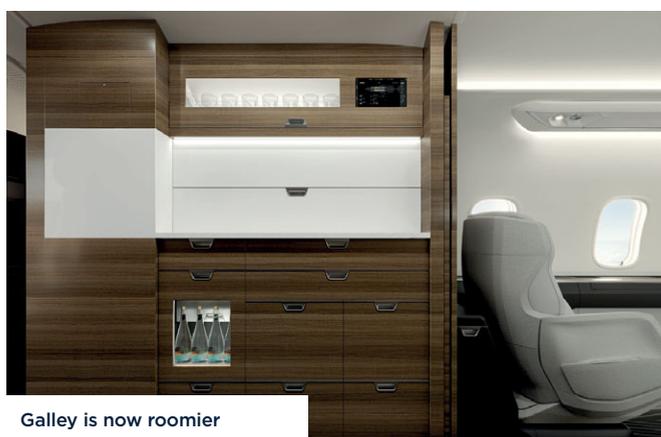
Bombardier is developing the 3500 with an eye toward sustainability, it says.

The jet's flight-test programme will be "carbon neutral" (via use of carbon offsets and sustainable aviation fuel), and Bombardier will offer the aircraft with cabin materials that have less environmental impact. Those include veneer made from eucalyptus (a fast-growing tree that requires little water) and upcycled wool and polyester. Upcycled materials can include those discarded during manufacturing, such as polyester clippings.

The 3500 will also be the first super-midsize jet sold with an "Environmental Product Declaration", a document summarising its "complete environment impact", Bombardier says. The company introduced that document with the 7500.



Side ledges are revised



Galley is now roomier

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US marine turned actor and comedian Rob Riggle is one of the keynote speakers at BACE's opening session tomorrow morning

# Show makes room for Riggle

Actor, comedian, pilot and former US marine Rob Riggle is the celebrity turn at the opening keynote tomorrow morning. The session, which also includes Federal Aviation Administration head Steve Dickson, begins at 08:30, and kicks off a day of more than a dozen educational sessions and discussions, covering everything from sustainability to onboard catering.

From serving in Afghanistan and Kosovo, and helping in the ground zero search and rescue effort after 9/11, to appearing on *Saturday Night Live* and *The Hangover* might seem an odd career switch, but Riggle has

pulled it off, appearing in a host of movies and TV shows since retiring as a lieutenant colonel in 2013 after 23 years' service. He will be talking about his experiences in both the military and show business, and no doubt raising a laugh along the way.

For those in the industry at least, Dickson is an equally familiar face, becoming FAA administrator in August 2019 and immediately having to take charge of the tricky issue of the grounded Boeing 737 Max's return to service. A former military pilot, who went on to spend three decades as a captain and latterly senior vice-president of flight operations at Delta Air Lines,



Rob Riggle

Dickson has been an advocate for safety and operational excellence. He will be outlining his priorities for business aviation.

Sustainability is a big theme on the first day of BACE, and a session at 10:30 will examine "turnkey

ways to offset your company's carbon footprint". It promises that attendees will walk away knowing how to set up an offset programme. Later in the day, at 14:00, the debate moves to sustainable aviation fuel, where the panel includes representative of SAF pioneer Neste and the Commercial Aviation Alternative Fuels Initiative or CAAFI.

If you want to get to know the people who run the show and lobby for business aviation throughout the year, then at 14:00 there is a chance to join chief executive Ed Bolen and other leaders of the National Business Aviation Association for a coffee social. It is open to long-term and new members, as well as those keen to find out more about the organisation.

Covid-19 has affected many aspects of aviation, and on-board catering is no exception. A 14:30 session, in room W228, looks at some of the new food safety challenges of providing meals for crew and passengers. For more details on the programme for tomorrow and the next two days of the show, check the BACE section on the NBAA website. ▶

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The OEM's launch of two jets just ahead of a show it is not attending provided an additional surprise for many attending BACE this week. What will the G800 in particular mean for the ultra-long-range, large-cabin segment, and Savannah's competitors?



Gulfstream unveils the G800 in Savannah last week

**Dominic Perry**

While Gulfstream may not be at the BACE show this year, its launch of two new jets shortly ahead of the event mean that its competitors arrive in Las Vegas still digesting what it means for them.

And it's clear that with the simultaneous launch on 4 October of the ultra-long-range G800 and large-cabin G400 that Gulfstream means business. It is clearly targeting twin objectives: to fortify its position at the top end of the market, and to apply still more pressure on its rivals, in particular Bombardier.

Unveiled to great fanfare at a live event at the airframer's Savannah, Georgia headquarters, Gulfstream president Mark Burns said the arrival of the new pair means that it now boasts "an aircraft for every mission".

Although the G400 was presented via a digital mock-up, the big surprise of the night was the public roll-out of the first G800 test aircraft - a prototype assembled in secrecy.

But the fact that Gulfstream was able to quickly and quietly assemble that flight-test vehicle - while simultaneously working on the G700's certification - points to a great strength of its strategy: both new aircraft are, to a greater or lesser extent, derivatives of existing models, sharing key components and therefore minimising R&D costs and risk.

Take the G800 for example: it is essentially a shrink of the G700 (which itself was developed from the G650). As such, the G700 and G800 share a wing, winglets, tail and fuselage cross section - with

that last feature also shared by the G650. In addition, both newer jets are powered by the same Rolls-Royce Pearl 700 engines and have common cabin systems and the firm's Symmetry flightdeck and BAE Systems active sidestick controls.

The G400, meanwhile, shares the G500's wing and winglet, and has the same fuselage cross-section as the G500 and G600. Power comes from a pair of Pratt & Whitney PW812GA engines - a lower-thrust version of the PW814GA on the G500. Again, the Symmetry flightdeck and cabin systems are common across the three jets.

Burns says that the G800's development has benefited from the "investment in design and manufacturing" for the G700. Parts are already being built for the test fleet, he says, with the initial example already undergoing "instrumentation and calibration" which is "clearing the way [for it] to begin flying".

Gulfstream is confident that the rapid pace of development will see the G800 enter service in 2023. That timeframe is significant - putting the jet's arrival two years in front of Dassault Aviation's rival Falcon 10X, which will be powered by a higher-rated variant of the Pearl engine.

But how close are the two aircraft in performance terms? Gulfstream boasts that at 8,000nm (14,800km) the G800 will have the longest range of any purpose-built business jet, effectively a 500nm advantage over the Falcon 10X, and 300nm more than Bombardier's Global 7500.

However, Dassault has been very public that it is not chasing range records with the Falcon 10X, believing that 7,500nm will connect the vast majority of potential city

pairs. Instead, to convince customers to wait, it is banking on the comfort offered by the twinjet's spacious cabin, which is higher and wider than that of the G800 and G700.

Whether the additional range will sway buyers remains to be seen, however. "When you get up into that range category is another 300nm going to make a difference? Maybe just for bragging rights," argues business aviation consultant Brian Foley.

It is a view shared by aerospace analyst Richard Aboulafia of Teal Group: "It is not going to result in more than a handful of additional sales," he says.

In a sense, Gulfstream has done to Bombardier what the Canadian firm intended to do its rivals when



Gulfstream's pair of new jets

it unveiled the Global 7000 - later renamed to reflect its improved range - and smaller, longer-range Global 8000 over a decade ago.

While the Global 7500 entered service in 2018, development of the Global 8000 remains on ice. However, should Bombardier feel that its flagship is sufficiently threatened by the new Gulfstream then it can "escape to the Global 8000 for fairly low cost", says Foley.

But an easy solution is not immediately evident further down the Montreal firm's line-up, where the G400 could pose difficult questions for the Challenger 650, an aircraft which has been in service since 2015, but whose heritage extends back to the early 1980s.

Burns says that the G400 addresses a "void in innovation" in the large-cabin market. "Our customers asked Gulfstream to re-envision a category of airplane that the rest of the industry has left a bit dull and dormant." The \$34.5 million aircraft is set to enter service in 2025.

Both Foley and Aboulafia agree that Bombardier has run out of ways to further improve the 4,000nm-range jet. The only solution, they argue, is a clean-sheet design. But that is something "that Bombardier is not in a financial position to do," says Foley, who argues that the airframer is "a little bit trapped with the Challenger 650".

Aboulafia says the G400 is "going to grab market share, mostly at the expense of Bombardier. And there is not much they can do about it given their financial weakness.

"Finding at least \$500 million to replace the Challenger 650 is not an option right now."

Although he agrees that Bombardier does not have the money for a clean-sheet replacement, George Ferguson, senior aerospace, defence and airline analyst at Bloomberg Intelligence, believes the airframer may not have to hit the panic button just yet.

Strong post-pandemic demand for private aviation means that backlogs for all aircraft types are currently strong. Fleet sales too will play a part - an area of the market Gulfstream has previously been reluctant to engage with - and although the Challenger may be older, as its development costs have long since been amortised, "you can still move airplanes with a discount", he says.

But regardless of what the new jets will do to the ranges of its rivals, the launch of the G800 signals the beginning of the end for the G650/ER.

"Eventually, the G800 will replace the G650. The G650ER is still in high demand, so we have not determined when production will end," Gulfstream confirms. ▀



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## CONVENTIONS

- 1** **NBAA-BACE**  
October 12-14, 2021 | Las Vegas, NV
- 2** **ABACE**  
April 12-14, 2022 | Shanghai, China
- 3** **EBACE**  
May 23-25, 2022 | Geneva, Switzerland
- 4** **NBAA-BACE**  
October 18-20, 2022 | Orlando, FL

*Complete agendas, exhibitor applications and registration will be available online in the months preceding each event. Sponsorships are also available at a range of price points.*

## CONFERENCES & REGIONAL FORUMS

- 5** **Schedulers & Dispatchers Conference**  
January 18-21 | San Diego, CA
- 6** **Regional Forum**  
February 2 | Opa-locka, FL
- 7** **Leadership Conference**  
February 7-9 | Fort Worth, TX
- 8** **International Operators Conference**  
March 14-16 | Los Angeles, CA
- 9** **Maintenance Conference**  
May 3-5 | San Antonio, TX
- 10** **Regional Forum**  
June 22 | White Plains, NY
- 11** **Tax, Regulatory & Risk Management Conference**  
October 16-17 | Orlando, FL

# After steering its way through the crisis, NBAA chief executive Ed Bolen says the business aviation community cannot wait to reconnect in person for the first time in two years

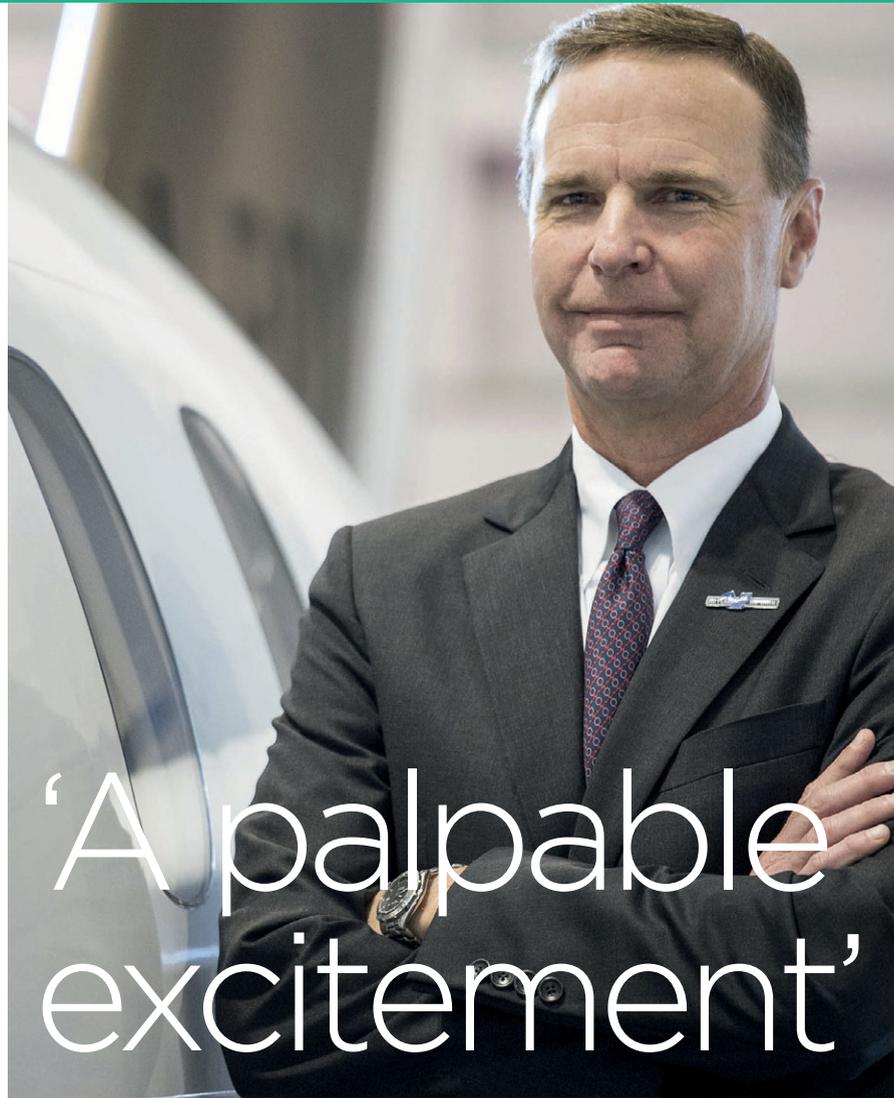
## Murdo Morrison

For National Business Aviation Association president and chief executive Ed Bolen 12 October will be a day of celebration for the sector. For the first time in two years, thousands of members of the business aviation community will meet face to face in the new west wing of the Las Vegas Convention Center. "The excitement, both within NBAA itself and the industry is palpable," Bolen told *Flight Evening News* in an interview from his Washington DC office a week before the event.

Bolen and his team have been spending months preparing for the biggest gathering in business aviation, as they do every year. Until 2020, the NBAA convention had been held in some form annually since the 1950s. However, this time had the added complexity of introducing Covid-security protocols, and the uncertainty around whether the event could still take place as the Delta variant raged throughout the USA this summer.

Bolen has no doubt that, with cases in the country stabilising in recent weeks, and with strict Covid prevention measures in place, the business aviation community will turn up in force in Las Vegas. After two years without the opportunity to meet, the industry is desperate to reconnect and exchange ideas, he says. As well as the cancellation of the convention in Orlando last year, the last two EBACEs – the equivalent convention for Europe, held every May in Geneva – were also canned.

NBAA has spent considerable time persuading potential exhibitors and visitors that the convention will be safe. Unlike many countries, the USA has remained relatively open throughout the pandemic when it comes to social contact. However, the prevalence of Delta has made many nervous about travel. "NBAA has been guided in everything we do by outside experts, who we are in constant contact with," says Bolen. "We are following what other conventions have done."



However, this year's show will be different. For a start, most Europeans and residents of several other countries still cannot legally enter the USA. A hoped-for relaxation in the transatlantic travel ban by the Biden administration will not take effect until next month. This means many who would have been in Las Vegas – including a UK-based contingent from FlightGlobal, there to produce *Flight Evening News* – are not attending.

Bolen admits that, while NBAA is a US-focused association, business aviation is "inherently international", as is the world's largest business aviation event. "We will miss having a lot of individuals and companies

who would normally be there," he says. "But we will focus on what we do have, not on what we don't have." Likening the success of the event to operating a business aircraft, he notes: "There are always redundancies that ensure a successful mission when things go wrong."

Despite the border restrictions, many European-based manufacturers have a presence, relying largely on US-based staff. They include Airbus, Daher, Dassault, Jet Aviation, and Pilatus. However, there is one notable absentee from this year's event, and not for reasons of travel complications. Gulfstream, one of the biggest brands in the

industry, will not be exhibiting, either in the convention hall or the static display. This is despite having a new jet – the G700 – approaching its service entry.

The no-shows aside, Bolen says this year's event promises to be one of the "most exciting" in years when it comes to new technology. "There will be a tremendous focus on product announcements, and this always generates excitement," he says. Themes will include advanced air mobility – several start-ups are present – and sustainability: the event will host the first Business Aviation Sustainability Summit. The show, says Bolen, will be "a celebration of everything business aviation is and can be".

Bolen believes the sector's much-documented rebound in the USA since Covid-19 caused flying to come to a virtual halt in the second quarter of 2020 is down to "business aviation being able to attract a significant number of new entrants". He adds: "The inherent benefits of business aviation – flexibility, security, time saved – have been around for ages, but in a Covid environment many of these benefits have taken on a new importance."

However, strict rules on movement aimed at countering the virus continue in many parts of the world, including Asia, and mean any global recovery has been stuttering. This is a concern, admits Bolen, who has led NBAA since joining in 2004 from an equivalent role at the General Aviation Manufacturers Association. "Business aviation is by its nature international," he says. "This means we won't see its full potential until we are back to a completely open global marketplace."

Bolen is confident, as the convention opens its doors tomorrow morning, that Las Vegas 2020 – despite the mask-wearing and social distancing advice – will be a vital step in that return to normality for the industry. And that by October 2021 in Orlando, Covid-19 will be in full retreat and the Business Aviation Convention and Exhibition will be back to welcoming delegates and exhibitors from around the world. ■



Until 2020, the convention had been held every year since the 1950s

## Facts about BACE

- The predecessor body to NBAA was formed in 1947 and the first convention took place over three days in Dallas in 1954, with aircraft for sale displayed at nearby Love Field.
- By the 1960s, the convention was gaining a reputation as a platform for new product launches. Although the original Learjet did not debut there, the 1964 Miami show, the first to attract over 1,000 delegates, included a mock-up of the mould-breaking type.
- By the association's 25th anniversary in 1972, the convention, in Cincinnati, drew nearly 3,000 attendees. By 1989, 15,046 attended the Atlanta event, and in 2007 the event attracted more than 32,000, a record that still stands.
- The convention today is ranked in the top 10 US trade shows.

Source: NBAA



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We profile two aircraft sure to catch the eye on the static display – Tecnam’s P2012 Traveller and Boeing’s BBJ Max 7

# Traveller’s stop and baby BBJ

## Tecnam Traveller

Tecnam’s P2012 Traveller is primarily pitched as an air transport aircraft – the piston-powered 9+2-seat twin has been in service with New England carrier Cape Air since 2019, which has orders for more than 100 of the Italian-built type, more than 20 of which have been delivered. However, Tecnam, based in Capua near Naples, believes the Traveller also has a potential market in business aviation and is showing the aircraft in the static display for the second time as part of a “Soar Higher Tour” of the USA. Future stops include Los Angeles (LGB) on 18 October, Phoenix (SCF) from 19-20 October, Dallas (DAL) on 21 October, Memphis (MEM) the following day, Nashville (BNA) on 25 and 26 October, and finally Atlanta (PDK), where it can be viewed on 27 and 28 October. Tecnam intends the Traveller to compete with legacy types such as Cessna 402s and Britten-Norman Islanders.



BillyPix

## Boeing BBJ Max 7

The BBJ Max 7 is the smallest of three Boeing Business Jets based on the 737 Max airliner, and the Seattle-based manufacturer has one of them on display at the static. The type represents the entry point to the Boeing Business Jet range that also includes corporate versions of its 787, 777X and 747-8 twin-aisles. Launched in 2016, the BBJ Max 7 has a range of 7,000nm, opening city pairs between Asia, the Middle East and the USA. As well as benefiting from the Max’s more economical CFM International Leap-1B engines, the type is longer than the original BBJ, increasing the length of the cabin by 19.3m (6ft 4in) to 26.11m, as well as providing more room for baggage. Like the original BBJ it comes with blended winglets. Boeing promises that its cabin altitude never exceeds 6,500ft, even at maximum cruise, and passengers typically experience 5,600ft.



Boeing

### Owner/Single Pilot Pavilion

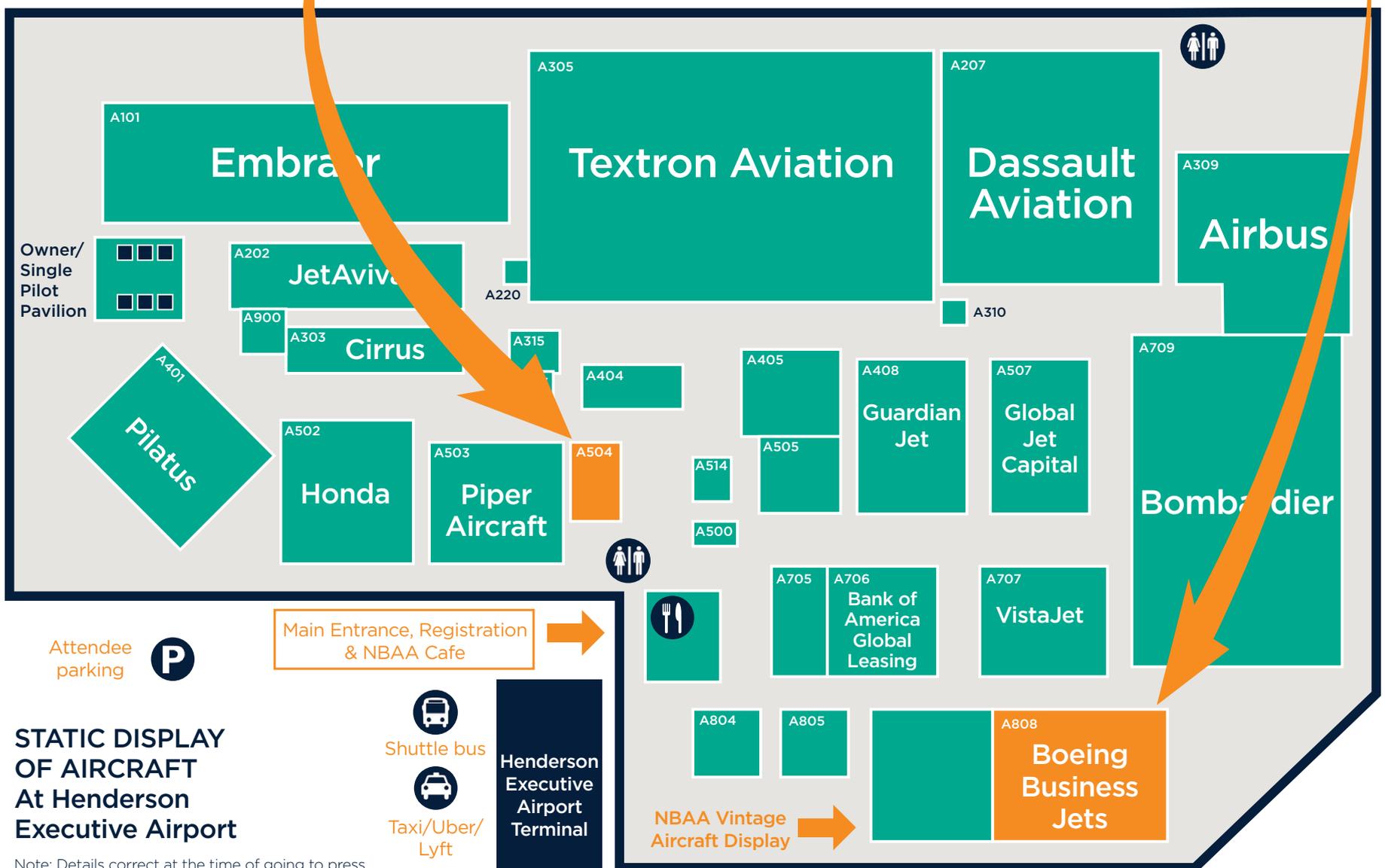
Cirrus Owners and Pilots Association (COPA)  
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A220 David Frank Furniture  
A310 Blade Urban Air Mobility  
A315 Pole to Pole Flight-Zen Pilot  
A403 Pipistrel  
A404 Daher

A405 Collins Aerospace  
A500 TAC Air  
A504 Tecnam US  
A505 FlyExecutive  
A514 Aviat Aircraft

A705 CB SkyShare  
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STATIC DISPLAY OF AIRCRAFT At Henderson Executive Airport

Note: Details correct at the time of going to press



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