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Supply chain issues remain a drag on deliveries, said Dassault chairman and CEO Éric Trappier.

10X faces two-year delay

BY CATHY BUYCK AND KERRY LYNCH

Dassault Aviation is moving forward on the assembly of its 19-passenger Falcon 10X as it marches toward entry into service in 2027, two years behind the original target of 2025.

During the European Business Aviation Convention and Exhibition in Geneva last May, Dassault Aviation CEO and chairman Éric Trappier indicated some skepticism about the 2025 timeline, pointing to vendor problems and the longer-than-anticipated effects of Covid.

However, Carlos Brana, executive v-p of civil aircraft for Dassault Aviation, told **AIN** that despite the schedule delay, "development is going smoothly" as plans to assemble the aircraft this year proceed. "We are starting to manufacture the parts," Brana added. "Right now, everything is going according to plan, even if the schedule has slipped a tiny bit."

Once certified, Dassault will bring to market its largest, longest-range Falcon yet, putting it into the realm of the Bombardier Global 7500 and Gulfstream G700.

Meanwhile, the French airframer's deliveries dipped to 26 Falcons in 2023. That was six fewer aircraft than in 2022 and missed its guidance set last March for 35. The shortfall was reflected in an almost 31 percent dip in revenues last year, which fell to €4.8 billion ($5.2 billion) from €6.9 billion in 2022.

Chairman and CEO Eric Trappier pointed to supply chain issues for the declining rate of deliveries, indicating that the problem is more severe with the Falcon production line. "It's more complicated for the Falcons because there are several supply chains with different suppliers for the 8X, for the 900LX, for the 2000LXS, for the 6X, and also for the 10X," he told reporters.

Another factor has been the later-than-anticipated type certification and entry into service of the ultra-long-range Falcon 6X. The wide-cabin business jet received simultaneous certification from EASA and the FAA in August, and the first aircraft entered service with Dassault itself in November, with the first external customer delivery occurring last month.

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News Briefs

GENESYS TESTING DAEDALEAN

Genesys Aerosystems has signed an MoU with Daedalean to explore integration of the latter company's vision-based autonomy and pilot-assistance solutions into the Genesys avionics suite. Flight testing of Daedalean's OmniX evaluation kit has already begun on Genesys' OH-58 Kiowa helicopter. Daedalean has been developing PilotEye, an AI-based visual traffic awareness system for detecting traffic. OmniX is also using AI vision-based solutions, not only for detecting traffic but also for navigation and landing guidance.

HAI USHERS IN NEW ERA AS VERTICAL AVIATION INT'L

Helicopter Association International rebranded as Vertical Aviation International in late February at Heli-Expo, in recognition that the nascent advanced air mobility sector is challenging how the rotorcraft segment defines itself. Likewise, the Heli-Expo name for the association's annual gathering was retired after the 2024 edition closed in favor of Verticon, which is scheduled for March 2025 in Dallas. The rebranding came as the association closed out the celebrations of its 75th anniversary. "We've got all kinds of great things going on," said VAI president and CEO James Viola.

GLOBAL JET CAPITAL SEES POSITIVE SIGNS FOR BIZAV

The business aviation industry finished last year on a mainly positive note, according to Global Jet Capital (GJC), which remains broadly optimistic about prospects for 2024 in its latest assessment of the market. During the fourth quarter of last year, GJC reported business aircraft flight operations declining by 0.9 percent year over year. Those numbers, however, are still higher than pre-Covid levels, up 17 percent versus fourth-quarter 2019 and up 15.1 percent versus full-year 2019.

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IAI produces the Gulfstream G280 at its facility in Tel Aviv, Israel.

IAI prepares to manufacture upgraded Gulfstream G280

BY **ARIE EGOZI**

Israel Aerospace Industries (IAI) is getting ready for series production of an upgraded version of the super-midsize G280 business jet it builds under license for Gulfstream Aerospace. Following type certification in Israel and the U.S., plans call for first deliveries to be made in 2026.

According to Shmuel Kuzi, executive v-p and general manager of IAI's aviation group, the company has already produced a prototype of the upgraded G280 and is now adapting its production lines. "We have designed the upgraded version and we will certify it as we did with previous models of Gulfstream business jets that we have made," he told **AIN**.

Since the 3,600-nm, Mach 0.85 twinjet entered service in 2012, IAI has delivered around 300 units. An upgraded version of the G280, for which Gulfstream has not yet confirmed the specifications and projected performance, would compete with the Embraer Praetor 600, Cessna Citation Longitude, and Bombardier Challenger 3500.

Kuzi refrained from detailing all the changes that are to be introduced with the upgraded G280, but according to previous reports based on Gulfstream data, it is known that the U.S company has managed to reduce cabin altitude from 6,000 feet to 4,800 at FL410. The upgraded model is also expected to feature a new avionics suite.

From mid-2024, new-production G280s will feature the enhanced cabin altitude and LED cabin and exterior lighting. These upgrades will also be available for retrofit, Kuzi said.

IAI designed and manufactured the earlier G150 and G200 models after Gulfstream acquired Galaxy Aerospace in 2001. The jointly developed G280 was originally called the G250 and had its first flight in Tel Aviv on Dec. 11, 2009.

News Briefs

BIZAV ACCIDENTS IN CANADA NEARLY DOUBLE IN 2023

Accidents involving business airplanes operating as private and air-taxi operations in Canada nearly doubled last year versus 2022, according to preliminary data from the country's Transportation Safety Board. All the accidents, except one, were nonfatal. Business aviation operations accounted for 18 of 126 total fixed-wing accidents (14.2 percent) in 2023 versus nine out of 120 (7.5 percent) in 2022. In each year, there was one fatal accident—both by an air-taxi operator of a non-jet airplane. Private business airplanes experienced three accidents last year versus zero in 2022. Air-taxi-operated business jets were involved in three nonfatal accidents last year versus one in 2022.

AMBER RAISES FUNDS FOR ASIAN FRAX PROGRAM

Amber Aviation expects to launch its fractional ownership program in Asia by October, based on the recent completion of its Series C funding round. The China-based company has not disclosed how much new capital was raised but announced it received strong support from existing shareholders, including NetJets, Fung Investments, Liu's Group, and Hony Capital. The company already operates a fractional leasing program called AmberNet, offering blocks of 25 and 50 flight hours.

USED BIZJET INVENTORY CLIMBS, PRICES SOFTEN

Preowned business jet inventory soared by 32 percent year-over-year in February, while prices softened by 5 percent, according to financial analyst Jefferies. It said inventory increased across all segments, with available heavy jets up by 37 percent, medium jets up by 32 percent, and light jets up by 28 percent. Inventories of jets less than seven years out of production have increased by 35 percent year-over-year.

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GAMA: 2023 aircraft deliveries up in all segments

BY: CURT EPSTEIN

GAMA

GAMA released the 2023 general aviation shipment and billing numbers in February.

Aircraft deliveries were up across all sectors in 2023, according to the year-end statistics that the General Aviation Manufacturers Association (GAMA) released in February.

"For the first time in over a decade, the general aviation manufacturing industry has eclipsed 4,000 aircraft delivered," said GAMA president and CEO Pete Bunce. "In addition to this strong showing, there are robust and growing order backlogs for all segments of aircraft."

> "For the first time in over a decade, the general aviation manufacturing industry has eclipsed 4,000 aircraft delivered..."
>
> Pete Bunce
> GAMA president and CEO

Airplane billings rose by $500 million last year, while rotorcraft billings climbed by $400 million.

For the business jet category, last year saw a total of 730 deliveries, a 2.5 percent increase from 2022.

Bombardier improved its totals by nearly 11 percent, handing over 138 jets in 2023, adding 13 Challengers and five Globals to more than make up for the end of the Learjet line in 2022, while Brazilian airframer Embraer saw a nearly 13 percent increase across its product lineup, delivering 115 business jets.

Honda Aircraft moved 22 of its light HondaJets in 2023, five more than in the previous year for a nearly 30 percent increase, and fellow light

News Briefs

WHEELS UP REVENUES, LOSSES FALL IN 4Q

Wheels Up's fourth-quarter revenue decreased by $162 million year-over-year, to $246 million, but the company did stem its losses by 64 percent. Meanwhile, the company reported that flight-related revenue for the full year rose 30 percent, to $1.2 billion. Wheels Up said it is hoping to increase profitability via a higher mix of charter and corporate flying, cost reductions, stabilization of its deferred revenue balance, and normalization of working capital. The earnings news comes after Delta Air Lines led a consortium of investors to rescue it from reported financial troubles in the third quarter.

NTSB REVISES PROBABLE CAUSE FOR CITATION ACCIDENT

The NTSB has issued a revised final report for the Nov. 30, 2018 crash of N525EG, a Cessna CitationJet equipped with a Tamarack active winglet system. The new probable cause is: "The pilot's inability to regain airplane control after a left roll that began for reasons that could not be determined based on the available evidence." In a statement, Tamarack president Jacob Klinginsmith said the company "is very pleased that the NTSB has decided to grant our petition for reconsideration...and taken steps to correct multiple technical errors in the original investigation."

MAGNIX EYES MEDIUM BELLS FOR ELECTRIFICATION

MagniX is looking at an unspecified Pratt & Whitney Canada PT6T Twin-Pac-powered helicopter as its next rotorcraft electrification project. The project would replace one of the Twin-Pac's two power turbines with an electric generator, thereby hybridizing the aircraft on which it is installed, providing fuel efficiency and another layer of safety redundancy. The PT6T powers the Bell 212, UH-1N Twin Huey, and 412.

SAFE, STEADY, SECURED

Turbulence can be an unavoidable part of flying, but there are important and straightforward ways to mitigate its risks. By taking extra steps ahead of time, pilots and flight crews can reduce the problems it causes or passengers' exposure to it. We're highlighting this issue to remind everyone that small actions can avoid big problems if you hit a rough patch of air. Prepare now to ensure everyone's flight is a little less bumpy.

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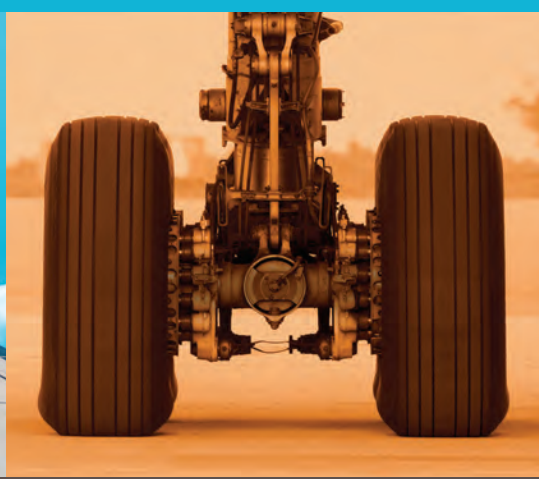

SAFE, STEADY, SECURED

PLAN FOR TURBULENCE, PREPARE FOR THE BUMP

Turbulence can happen on any flight. It's not always foreseeable, but predictive science and tools have improved. Crews should stay attentive to changing risk levels and keep themselves and passengers prepared for in-air bumps to the extent possible. Keep information flowing between cockpit and cabin. Put seatbelts and onboard stowage amenities to best use to keep people and items safe and secure.

- Confirm cargo and baggage are secured before flight and make seatbelt use a cultural practice on your aircraft whenever people are seated, including all-points for pilot harnesses.
- Employ the best available predictive tools and weather products to identify turbulence risks for your route and strategies to mitigate them.
- Communicate proactively; call for loose items in use such as phones, drinks, and computers to be stowed to lower injury risk when bumpy air is anticipated.
- Make timely reports of turbulence encountered to ATC to improve system-wide awareness.

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jet manufacturer Pilatus increased its year-over-year (YoY) output of its PC-24 by 18 percent, with seven more deliveries than it had in 2022.

Also in the light jet category, Cirrus handed over 96 of its single-engine Vision Jets, an increase of six from its 2022 tally, while a resurgent Eclipse Aerospace delivered two Eclipse 550 light jets for the first time in years.

On the negative side of the ledger was Gulfstream, which continued to await the certification of its new flagship G700. The airframer was poised to begin deliveries of the ultra-long-range jet, with completed aircraft ready to go. Despite that, the Savannah OEM's delivery total was only off by 7.5 percent from its 2022 total, with its large-cabin output down by just seven units YoY.

Dassault, which does not detail its segment deliveries, delivered 26 Falcon jets in 2023, a decrease of nearly 19 percent from its total the previous year, while Textron Aviation saw slight erosion in 2023, delivering 10 fewer Citation jets, led by a 24 percent dip in its M2 Gen2 output, bucking the trend in light jet delivery increases.

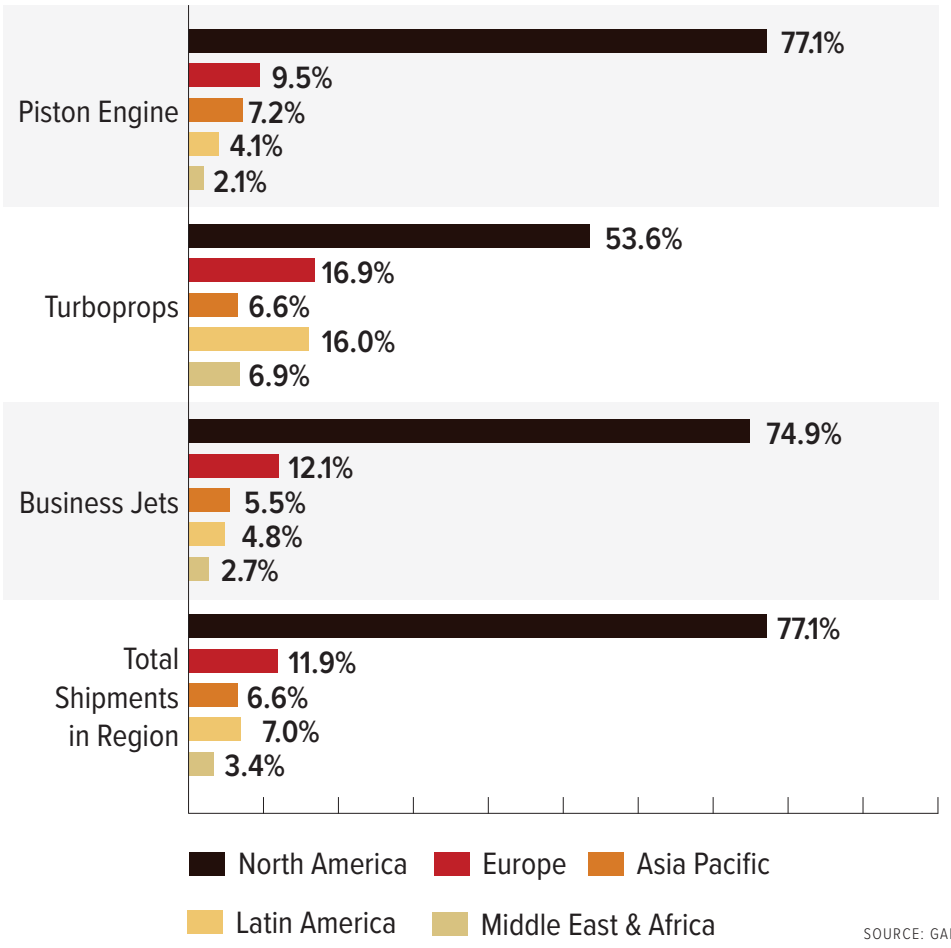
Among the bizliner manufacturers, both Airbus and Boeing saw a 50 percent decline YoY.

The turboprop segment overall saw a 9.6 percent increase from 2022, while the high-end pressurized numbers improved by 7 percent. Swiss OEM Pilatus saw a big ramp-up in its PC-12 production, handing over 22 more of the single-engine turboprops for a nearly 28 percent increase YoY.

Florida-based Piper also improved its 2023 totals, delivering 11 more single-engine M600s than it did in 2022, which equated to a 20 percent increase. While Epic Aircraft added another E1000 GX single to its tally from 2022, Daher remained static, handing over 56 TBMs in both years.

In the twin-engine turboprop category, Textron Aviation saw a decrease in its King Airs, delivering 13 fewer in 2023 than it did the previous year, and Piaggio, which handed over two Avanti P.180 Evos in 2022, had a lone delivery last year.

AIRPLANE SHIPMENTS BY DELIVERY REGION



SOURCE: GAMA

Piston-powered aircraft saw a nearly 12 percent increase in 2023, with 1,682 aircraft handed over.

Deliveries in the rotorcraft segment rose by nearly 10 percent last year compared with 2022. The turbine-powered category showed even better performance with its 753 deliveries equating to a 10.4 percent boost.

Airbus Helicopters saw its output rise by 11 units to 327 rotorcraft, with a decline in H145 deliveries offset by an increase in H135 deliveries.

Bell had more than half of its 171 deliveries last year come in the fourth quarter; the Textron subsidiary experienced a decline of less than 5 percent YoY.

Italy-based OEM Leonardo did not report its Q4 and year-end delivery numbers until March, and the manufacturer handed over 185 helicopters for the year, up 36 units over its 2022 deliveries.

Robinson Helicopter continued its post-pandemic ramp-up, improving on 2022 deliveries of its turbine-powered R66 by 17 units, a 17 percent increase.

Mesa, Arizona-based MD Helicopters increased its 530F deliveries from three to eight YoY.

Connecticut-based Sikorsky, which had no S-76 deliveries in 2022, handed over three last year, while logging one fewer large-cabin S-92 and adding 10 S-70s.

"While the deliveries from 2023 are very encouraging, our industry faces headwinds from ongoing supply chain issues, workforce shortages, uncertainty and unpredictability from global regulators, and short-sighted efforts aimed at curbing business and general aviation, particularly in Europe," said Bunce.

White House resurrects call for increased bizjet taxes

BY KERRY LYNCH

Following up on President Biden's pledge to make corporate jet users "pay their share" and drawing ire from the business aviation community, the White House last month proposed a fivefold phased-in increase of the jet fuel tax for private users and lengthening the depreciation terms for business aircraft. Included in the President's Fiscal Year 2025 budget request, the proposal comes in addition to the White House directive for the IRS to step up audits of business aircraft users to make sure they are properly classifying business and private uses.

The DOT said the budget proposes to "crack down on a corporate jet funding loophole." Taking a page from past arguments surrounding the business aviation contribution to the National Airspace System, the DOT noted that the system "has largely been disproportionately funded by commercial air passengers."

According to the agency, private jets account for 7 percent of operations handled by air traffic control but contribute just 0.6 percent of the taxes that make up the Airport and Airway Trust Fund.

Plans would call for a phased-in fuel increase from the current 21.9 cents per gallon to $1.06 per gallon in Fiscal Year 2029 on jet fuel used by non-commercial operators. According to the DOT, "In the first year, the jet fuel tax would increase to 38.64 cents with a 16.84 cents per gallon increase in each subsequent year until 2029." This tax rate was believed to have been last raised in 1993; even adjusted for inflation, it would be 47 cents per gallon today. It's unclear whether this tax increase encompasses all jet fuel used by non-commercial operators, regardless of the percentage derived from SAF.

President Biden is calling for business jet users to "pay their share."

The budget also would "eliminate a tax break that gives preferential treatment for writing off corporate jet purchases." This includes extending the depreciation length for business aircraft to seven years, matching airliners rather than the schedule of other business assets such as cars.

"The Biden administration's sweeping plan would hurt business aviation and the jobs and communities that depend on it and make it harder for U.S. companies to compete in a global economy," said NBAA president and CEO Bolen.

National Air Transportation Association president and CEO Curt Castagna agreed and pointed to the diversion of aviation tax funds into the Highway Trust Fund (HTF) to prevent fuel fraud efforts. "Unfortunately, the Biden Administration is proposing a tax increase it mistakenly believes will benefit the national aviation system," he said. "This is not the case. For nearly two decades now, Congress and the IRS have failed to address provisions in the tax code that allow for the HTF to erroneously keep billions of aviation tax dollars that were intended for the [aviation trust fund]."

General Aviation Manufacturers Association president and CEO Pete Bunce additionally called the proposals disheartening and shortsighted.

News Briefs

WORLD KINECT TO SELL AVINODE TO CAMP SYSTEMS

World Kinect is selling charter information platform Avinode Group to Camp Systems International for $200 million in cash. The sale includes World Kinect's aviation software that serves the FBO market. World Kinect, which announced the agreement in tandem with the 2024 NBAA Schedulers and Dispatchers conference, expected the deal to close within 60 days and plans to use the proceeds to repay debt and reduce its annual run rate of interest expense by approximately $10 million. Camp specializes in aviation management services such as maintenance tracking, engine health monitoring, inventory management, and flight scheduling.

SIGNATURE'S NEW BRANDING

Signature Aviation marked its appearance last month at the 2024 NBAA Schedulers and Dispatchers Conference with the official show debut of the FBO chain's new visual branding. The move also sunsets the Signature Flight Support brand that the company's FBO division had carried since its founding after the 1992 merger of Page Avjet and Butler Aviation—forming one of the industry's first large-scale FBO chains.

AVFUEL, NESTE INK SAF SUPPLY INCREASE EXTENSION

Avfuel and renewable fuel producer Neste last month finalized an extension to their agreement regarding the supply of SAF and set a framework for the deal through 2027. Since the beginning of the supply agreement, Avfuel's uptake of SAF has tripled each year, and in keeping with that exponential growth, it will triple again in 2024. "We are proud to not only continue our partnership with Neste but also immensely grow its scope with greater product access," said Avfuel manager of alternative fuels Keith Sawyer.

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Flying wisdom from King Air pilot Ben Taber

BY MATT THURBER

Ben Taber has been racking up flying hours—more than 12,000 in Beechcraft King Air 200s and 20,000 total—as a charter pilot for Dreamline Aviation, a charter operator headquartered at Van Nuys Airport in Los Angeles. Taber is based in the San Francisco Bay Area, flies mostly from San Carlos Airport, and over the years, he has developed a reputation as a mentor to up-and-coming pilots. Part of that mentoring includes helping new (and old) pilots understand not only how to fly safely, but also what makes a good pilot a professional. If anyone could be called "old school," it's Taber, who still flies with paper charts. Countless pilots that he has mentored might recall him stressing the need to know how to navigate without GPS, what exactly is going on during controller handoffs, or the nuances of a particular regulation. And as they move on to careers in business aviation and with airlines, hopefully, they'll remember the lessons Taber taught them and pass their knowledge on to new pilots they encounter.

How is Dreamline Aviation Doing?
We're humming along; we're just busy as can be. We need a couple more King Airs. We're losing [pilots] to the majors [airlines] on a pretty good clip. It's a fun airplane to teach, and [we have] a mentorship program where we pick up copilots at around 400 hours. We keep them for a couple of years and then off they go to bigger things, either with us or someone else.

How did you get started in aviation?
I was in an entirely different industry working in Alaska where the ratio of men to women, then as now, is about 10 to 1. And so my buddy had nothing to do one fall and signed up for private pilot ground school at the community college. And I'm thinking, college—there's gotta be girls in college. I'll sign up too. There weren't. I got my private up there and then discovered the incredibly generous state of Alaska student loan program. It got me through all my ratings except my ATP. [After meeting my future wife], we came down here [to the Bay Area]. I had a whopping 450 hours in my logbook. There was an ad in the paper at Gnoss Field [for a flight instructor]. They wanted 500 hours, and I applied anyway. I think I did 800 hours of instruction given in one year, which qualified me for Part 135 [charter].

Did the school give you any guidance, or did they just turn you loose?
Absolutely not. It was the wild west. That's where I learned not to do BFRs [now flight reviews]. In those days, the feds [FAA] encouraged us, or maybe they do now, to interview the applicant and try to get [an idea] on what kind of flying they had been doing. This older gentleman says, "I just stay right here, you know, local $100 hamburger flights. I don't get anywhere, I don't talk to a tower."

What happened after you signed off his BFR?
He finds this 20-year-old girl, blasts off to LA, and [chalks up] four violations one day after [we flew together]. Within the next 48 hours, the feds are knocking at my door. So afterward, I said, "Okay, we're done with the BFR thing." Another guy showed up with an airplane which appeared to have been painted with house paint and reeked of aviation gasoline. Yeah. Okay. No. Sorry. Gotta draw the line somewhere.

Did you learn a lot when teaching?
I remember very distinctly standing up in front of a ground school trying to teach an NDB intercept with a fixed compass card, realizing that I had no idea what I was talking about. Oh, crack the books now. Subsequently, I really enjoy the teaching part of what I do. It's just great to have some kid come in right out of blasting through the basics, commercial, multi, instrument and spin them up to 200, 300 knots and get them [using] navigation systems, talking on the radio, customer service, all kinds of subtleties that they just don't cover in flight school.

You seem to have a thing for knowing the airplane and equipment and how air traffic control (ATC) works. (Taber recently published a YouTube video explaining ATC concepts.)
Weirdly, nobody teaches radio [properly], not [the big schools]. And that's why I did that video—to say, "All right, there's a reason that I'm grumpy about this stuff, and here's what it is."

Is there a point where you felt like you gained an understanding of what it meant to be safe?
It was kind of a maturing of your attitude. Well...I used to say, crunching an airplane helps.

Tell us about that.
Statistically, as I understand it, there's a pretty big accident spike right around 3,000 hours, which is right about where everyone

thinks they have it all dialed in, and naturally, that's right about where I did it. I was going into a private strip, and I called down and I thought I'd asked every possible question that could be asked about this strip. How long is it? What are the obstacles? I asked everything except how wide it is.

What were you flying?

A [Cessna] 414, brand-new RAM conversion. My original idea was to do a low-pass check, and I'd come around. But as I got [close], it was like a cowboy party. Everyone's flying any way. There was a 310 right ahead of me. He's already on base and I watched him land, and it looked pretty normal.

What I didn't perceive from my position on downwind was his tip tanks were over the edge of the pavement. The 414 has a pretty wide wheel track, and it turns out that the soil on either side of the very narrow runway was sort of like pumice or talcum powder, super soft, and the runway was full of potholes. I bounced one wheel off the runway, got sucked down into the talcum powder, and that was it for the [landing gear] trunnion, which took out the spar.

To add insult to injury, the insurance company said to the owner, "Hey, no problem, go there, take the wings off, we'll fix it." [The owner] said, "I got it" [and signed papers to take over the rebuild]. So he hires a helicopter to sling it out of there, and they didn't rig it quite right.

Lawn dart! Pow! He rebuilt it, ultimately.

I've had a few things over the years that have got my attention but I think where the big safety focus...when I've had these proteges coming through, I'm just preaching safety, comfort, economy over and over and over again. Just safety first and then worry about the Hobbs meter and who is happy, but make the safe choice.

And by the way, on this exact point, I took a seminar from a couple of Coast Guard helicopter pilots a few weeks ago and the senior guy said, look, we're talking about CRM [crew resource management]. He says, "Our thing is whenever there's a disagreement as to a course of action, we just default to whatever the most conservative choice is and then discuss it later."

That's an interesting concept.

Yeah, because there's a modulating influence, which, by the way, is supported by insurance companies that have found that the mere presence of any pilot, just a person who's a pilot in the [other] seat of a single-pilot airplane, will make the pilot more conservative; [they are] less likely to do something [stupid].

We have a kind of apprenticeship program here. If they don't like something, I encourage them to pipe up and say so.

Fundamentally, what does safety mean to you?

For starters, make sure you can use the airplane again. Listen to the voice if it says, "This is a bad idea." Don't be afraid to pipe up.

Also, whenever there's a power imbalance—I've got some new kid with 400 hours and I got 20,000—there's a perception that he must know what he's doing; therefore, I'm not gonna worry about it.

No, no, no, it's a team effort here. And I can be just as stupid as you can. So don't assume and if you're feeling weird, you raise your hand.

Is there a big difference between a safety-focused company like Dreamline and others you've flown for?

This is the first company I've ever worked for [where] they didn't flog you for being one-tenth over on the Hobbs meter [that measures flight time]. They just would much rather we went point four over and came back in one piece and, more importantly, didn't freak out

the client. If you save one-tenth on the Hobbs and beat up the clients, they're not coming back.

That's the company's [mantra]. But I believe it, and it makes total sense. Because I'm not going to worry about the Hobbs meter unless the other two are satisfied. I'll try to fly efficiently. But, for example, King Air 200s are happiest at the 19,000- to 22,000-foot band. But if we're sitting there at 21,000 getting beat up, I'll try 23,000, and if that won't work I'll try 25,000, going into an increased headwind. I don't care; I'm trying to give [the customer] a good ride. My ideal flight is one in which a client never knew they were in an airplane. They're just doing their thing, commuting, yakking, whatever; just make it smooth and invisible.

I just learned a new term a couple of weeks ago. It's "fly the table." Watch your drink, and don't fly at a deck attitude that's going to make that drink move. Just because you can, don't [climb steeply] if it means a steep deck angle.

At Dreamline, do young pilots stick around?

It depends on what their long-term aspiration is. Some like charter. Personally, I couldn't fly the skeds [airlines]. It's just not me, which is why I've been doing this for so long. But for other people, that's their goal, and if we can help them, great.

Do you get involved when a young new pilot comes on board, helping get them up to speed?

Totally. I actually find them. That's the tricky part, to find the right mix of personality and talent and aptitude.

How do you find them?

I have a network of 24 people that [I've flown with]. I have an email group, [and] whenever I'm looking, my very first thing is I blast out to those people. They all know what I'm looking for, having already been there. It's been pretty successful.

What are you seeing amongst the young up-and-coming pilots? Are they good, and do they care about flying?

On the flying side, they've got all their tickets and are usually pretty decent. But what's scary is the state of ground instruction and regulatory knowledge. It is abysmal. I have a little quiz that I used to use as a screen for new hires. I have them take that just for fun, it's like basic commercial, multi-engine, instrument stuff. And wow! They're missing a lot.

Give an example.

They couldn't decode an FD [winds aloft forecast]. My favorite is 91.175 on how low you can go [on an instrument approach] when you see the approach lights. Fifty percent will say 100 feet below DA [decision altitude] when it's 100 feet above [touchdown zone elevation]. That's one people miss constantly. Also, something as stupid as light gun signals.

I do this too, flashcards for airport signage. The really bad one, the one that says you're on a runway, about half the people miss that one. I'm thinking, "You really ought to know this."

I'm doing recurrents [flight checks of other pilots]. Understanding the controller's perspective on a traffic call because, of course, they can't see which way your nose is pointing. [The traffic pointed out by the controller], it's two o'clock your track, not where your nose is. Three-quarters of people miss that one. Okay, that's scary.

You're big on avionics knowledge and navigation and having backups.

In general, way back when the FAA controlled the human-machine interface with avionics...it was the day when you could show me how to start it and I can fly any airplane with Narco [or King or Collins or Honeywell avionics]. We know how that works. Now you've got to take a graduate course in engineering to learn each new system, and they're each different. [The FAA] decided not to control that interface anymore. And so [it] went off on a different path.

I see guys that are so wrapped up in G1000 [avionics] on a blue sky day with a million bug smashers flying, they're staring at some screen instead of looking for traffic.

How do you feel about iPads in the cockpit?

They're a handy tool, but people do get a little wrapped up in them. Jeppesen sent me an email about a year ago saying, "Make a case for continuing to use paper [charts]." I was giving a guy a [flight] check. His iPad locked up. He couldn't unlock it, it overheats, it needs [a charge]. Most importantly, I like to look at old next to new [comparing the old chart with the new one], if it's somewhere I go a lot. What's the change?

What's your most important wisdom for young pilots?

To have a safe, healthy, and successful career, it's a combination of listening to your inner voice and not being afraid to speak up, without regard to whatever power imbalance exists in a cockpit. It's a team effort and nobody's foolproof.

If you're flying with someone who thinks that they are foolproof, I would not want to be there. I've met two of these in my life, people who believe there's nothing else to be learned. They're unteachable. Talk about a dangerous attitude. I'm pushing 40 years [flying], and I'm still learning.

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Pilot age and safety: looking for links

BY JAMES WYNBRANDT

Proposed revisions of mandatory pilot retirement rules are reigniting a debate over the risks of aging pilots.

Mandatory pilot retirement regulations are in the spotlight as battles over age limits rage anew. Previously, these issues largely bypassed the business aviation world, because retirement age regulations established by many agencies worldwide apply solely to airline operations.

The effort to raise the standard from 65 to 67 years through the latest FAA reauthorization package is simply the newest clash over Part 121 retirement rules.

But for the first time, mandated retirement has come to the Part 135 air taxi/air charter realm, as NetJets, following a recent law change, this year imposed a retirement age of 70 for its pilots.

Many arguments for keeping, raising, or scrapping the mandatory retirement age have been offered over the decades, but the most contentious continue to be safety-based: those favoring age limits for safety's sake cite scientific acceptance of cognitive declines associated with aging; advocates of relaxing the rules note the lack of data linking accidents and pilot age that would justify retirement mandates. Their ongoing campaigns have embroiled regulators, operators, pilots, safety professionals, and many others for the majority of the more than 100 years since age limits came to aviation.

The International Commission for Air Navigation established the first age limit for pilots in 1919, set at 45 years, but the stricture may not have fit well with the quickly evolving industry. When the International Civil Aviation Organization (ICAO), the global regulator of international operations, assumed the commission's responsibilities in 1947, the age restriction was removed.

In the absence of regulatory limits, in the late 1950s, U.S. airlines sought to impose their own mandatory retirement policies. At the time, jets were replacing piston fleets (the pilots' union Air Line Pilots Association, or ALPA, signed its first jet contract—for National Airlines' DC-8 fleet—in 1958), and with a supply of young, military-trained jet pilots available, management at major carriers began raising questions about older (and more highly paid) pilots' ability to transition to turbine aircraft.

RETURN OF AGE LIMITS

In 1958, American Airlines, TWA, and Western Airlines instituted an age-60 mandatory retirement, citing additional costs of training and concerns about declining

HOW AN AIRCRAFT BROKER CAN HELP YOU GET THE MOST FROM TODAY'S PREOWNED MARKET

Everything about the preowned market—including aircraft availability, values, ages, financing, insurance, and operating costs—is changing rapidly. That's one reason both buyers and sellers need a highly qualified and experienced dealer/broker on their team to ensure that the final deal is right for everyone involved.

The COVID pandemic has caused many travelers to want to avoid crowded airports and airliners. As a result, the number of people flying privately via jet cards, fractional shares, or whole aircraft ownership has significantly increased.

This rush of new owners has turned the once relatively simple act of buying or selling an airplane into an increasingly complex transaction—one that requires the expertise, experience, and insight that only professionals possess.

"Private aviation has changed significantly over the past few years, but more importantly, the clients have changed," explains Emily Deaton, CEO of turbine and business jet dealer jetAVIVA. "Many post-pandemic clients have been first-time buyers, and they're not only staying but, in many cases, transitioning into different levels of ownership."

Ann Pollard, a member of aircraft dealer and MRO Duncan Aviation's Aircraft Sales and Acquisitions Team, notes another change. "Some preowned models entering the market are increasingly plagued by issues that can result in decreased asset value and extended downtimes," she says. "Buyers need to align themselves with an experienced team that can adapt quickly and provide actionable intelligence on the rapidly changing factors that impact market conditions."

Todd Jackson, VP of Acquisitions for business aircraft broker Elliott Jets, adds that another recent change has been the stabilization of preowned pricing. "The past couple of years has been a seller's market with little or no room for negotiations," he says. "But sellers aren't as bullish today. Yes, some makes and models are still desirable, and their prices have not started to settle. The list of those airplanes gets shorter every day. An unaware buyer can easily pay too much."

All these changes can be challenging for non-professionals to navigate successfully.

YOU'VE GOT A FRIEND IN THE BUSINESS

Fortunately, aircraft buyers and sellers can reach out to a network of dealers and brokers that can help them avoid costly mistakes.

It takes a keen eye and a lot of experience to differentiate an aircraft that's a good buy from one to which you should say "goodbye."

"It's particularly important to understand the pedigree, technical history, and airframe, engine, and component life-cycle status when purchasing a preowned aircraft," says Pollard. "Airframe and engine maintenance programs can provide some level of risk management, but they are no guarantee against unpleasant surprises like extended downtime due to supply-chain or obsolescence issues."

Pollard adds that Duncan Aviation's team draws heavily from the global experiences gained through its MRO facilities. Last year, the combination of full-service and satellite maintenance facilities "touched" more than 9,000 business aircraft from 86 countries.

As Elliott Jets' Jackson explains, each time our sister company, Elliott Aviation, works on a customer's aircraft, it learns what issues the model typically encounters and passes that insight along to the sales and acquisitions team.

EXECUTIVE INSIGHT

EMILY DEATON
CEO, jetAVIVA

WHAT IS YOUR BEST TIP FOR CHOOSING AN AIRCRAFT BROKER?

Start with an IADA-accredited [International Aviation Dealer Association] broker specializing in the aircraft type you want, then talk to them. Does the broker have a clear understanding of your goals? That's an important step for us. We are relationship- and solutions-focused, so we need to get to know our clients well from the start.

Phenom 300 Previously Sold by jetAVIVA.
Source: dbfoto, Dustin Breau LLC, 2021

Founded in 2006, jetAVIVA – a worldwide leader in pre-owned aircraft sales and acquisitions – has become one of the largest private jet sales organizations in the world as measured by total annual transaction volume. jetAVIVA has helped thousands of individuals and companies enter and enjoy the world of jet ownership.

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"These insights are a huge benefit to our customers because we can draw on the type history to help us lay out and execute a detailed strategy for our clients," he says. "The broker needs to work with their client and educate them to make sure they understand the current environment and potential pitfalls for the type of airplane they are buying or selling.

"For example, if someone is looking to buy, we start by asking a lot of questions about how they will use the airplane," Jackson continues. "What is their mission type and frequency? What's their number of passengers and what airports do they typically use? And, of course, what's their budget? We need all that information so that we can guide them toward the appropriate model."

These insights suggest why it's important to work with a broker who has intimate knowledge of the vast and various business aviation fleets and the intricacies of aircraft ownership and operation. Like owners, no two aircraft are the same.

jetAVIVA's Deaton adds, "Our primary objective is to use our experience, expertise, and industry connections to facilitate a successful outcome for our client. Yes, there's a simplified definition that brokers help buy and sell, but where we as brokers really play a vital role is knowing our clients as individuals.

"We do around 100 transactions a year, and every one of them is unique," she continues. "Each client has different priorities and motivating factors. Our job is to understand them and know which lever to pull to ensure they achieve those goals. When we do that, you really see the magic happen."

Another major benefit of working with a broker who is experienced in the year and model of the aircraft a buyer is considering is knowing what to look for to help pick the "cherry" from the bunch. Things like which required inspections or upgrades have been recently completed and what components are close to obsolescence.

Unraveling all the factors and then reassembling them into a cohesive plan to buy a particular airplane is not for the faint of heart. The right broker team will use its combined experiences and insights to provide accurate cost and downtime estimates for any required engine or airframe work or available modifications or upgrades.

ENSURING THE PRICE IS RIGHT

While a common belief is that a broker is more valuable to aircraft purchasers than to sellers, all our experts stressed that sellers stand to benefit equally, if not even more, than buyers, especially in today's rapidly evolving preowned environment.

As Elliott Jets' Jackson says, "When buyers have more options, as they do in today's market, sellers have to be more flexible in their terms and wants. So, the first thing we do is accurately establish the aircraft's real value."

He stresses that "real value" doesn't mean discounted pricing. "Pricing too low happens a lot, and sellers need to be careful. If your airplane has significant 'value adders,' those need to be considered and explained to a prospective buyer. It's easier said than done.

"To price it correctly, we need all the data, logbooks, records, history, etc., and then

EXECUTIVE INSIGHT

TODD JACKSON
Vice President of Acquisitions, Elliott Jets

WHAT IS YOUR BEST TIP FOR CHOOSING AN AIRCRAFT BROKER?

Whether I was buying or selling, I would zero in on using a certified IADA [International Aviation Dealer Association] broker that specializes in the category and class of aircraft I am interested in. Then it's just a matter of getting on the phone and talking. There's no mystery to it—you want to find someone who you are comfortable with.

Aircraft sold by Elliott Jets brokerage service. Source: Elliott Jets.

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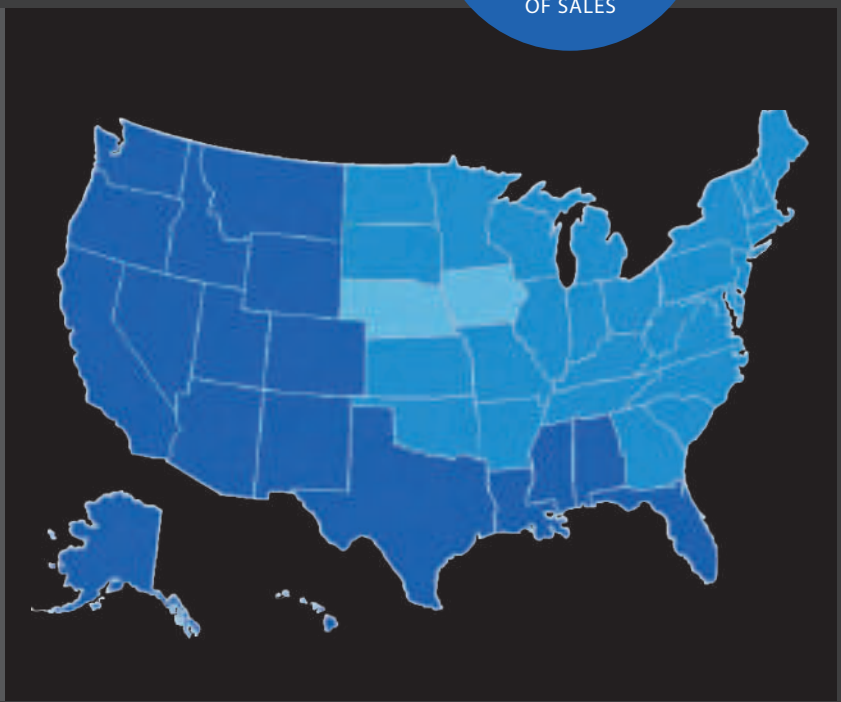

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we perform a detailed inspection of that airplane," Jackson continues. "We take all that and look at what buyers paid for recently sold, similar aircraft."

Let's face it: even a pinup-worthy "hangar queen" has little things that need to be attended to before she's ready to meet her competition on the runway. Again, working with a full-service broker takes the pressure of finding and supervising experienced aircraft detailers off the seller.

If the broker is attached to a full-service MRO, those blemishes can be taken care of in-house; if not, any good broker can point you to a facility that can fix what needs fixing.

Pollard says that in Duncan Aviation's case, its completion centers have interior and paint teams that can greatly enhance the interior and/or exterior of clients' aircraft.

"First impressions are important, so having the exterior paint touched up and shining and the interior detailed and well-organized goes a long way toward presenting a client's aircraft in the best light," she says.

Speaking of first impressions, an experienced broker will have the resources to provide top-level marketing support across a broad spectrum of media. Posting a for-sale notice on Facebook won't work in today's business aviation environment.

"One of the unsung heroes is the power of great marketing, and this is one of the many things we do well," jetAVIVA's Deaton says. "Sales gets the lion's share of attention, but marketing is key to maximizing that aircraft's place in our highly competitive and dynamic market.

"We want prospective buyers to get excited about an aircraft listing," she continues. "There is tremendous power in an effective marketing strategy when it comes to maximizing value. The key is not in throwing everything but the kitchen sink at every listing—but in understanding which tools work best at which times to drive value and sell aircraft quickly."

Speaking of marketing, our experts strongly suggest that you have your brokerage include a detailed outline of what resources it will employ to get your airplane on the radar screen of the right buyers.

EXECUTIVE INSIGHT

ANN POLLARD
member of Duncan Aviation's
Aircraft Sales & Acquisitions Team

WHAT IS YOUR BEST TIP FOR CHOOSING AN AIRCRAFT BROKER?

Choosing an experienced and ethical team is a good place to start. Look for an IADA [International Aviation Dealer Association] member with a record of valuing long-term relationships over individual transactions. Consider the company's reputation as well as the transactional, market research, and technical experience of its sales team.

Duncan Aviation has three full-service MRO facilities and AOG and in-field support locations throughout the United States. One of the hangars at its Lincoln, Nebraska, facility is shown here.

"OH, IF I HAD ONLY KNOWN..."

By now, you know why buying or selling an airplane today is anything but a DIY project. Helping you avoid the laundry list of common mistakes is an increasingly large part of what your broker will do for you.

According to our experts, one mistake first-time buyers frequently make is focusing just on the airplane's listed price and not on the ongoing costs of feeding the beast. Those expenses often come as an unwelcome surprise.

There are many pitfalls that can catch first-time owners off guard, including whether to operate an in-house flight department or use a management company. Then there are the non-negotiables, such as hiring crews, finding a hangar, choosing an MRO, arranging for training, insurance, financing, tax implications, and more.

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"Understanding the entire budget for the aircraft ownership experience needs to be a critical factor in the decision-making process," Duncan Aviation's Pollard says. "It can come down to whether or not ownership is the best solution for a particular situation. The sheer amount of data within our global organization, and our ability to analyze it, empowers our clients with actionable intelligence that leads to the right decision for their unique needs."

Another common pitfall is failure to understand the significance of a pre-buy inspection for both the buyer and the seller. According to Elliott Jets' Jackson, this is another area where a broker experienced with the make and model aircraft you are looking at can be invaluable.

"Buyers need to make sure that they are aware of all of that particular aircraft's 'soft spots,' which are locations where we might typically find issues on that model," he explains. "Since we see the same models over and over, we know where to look for corrosion or wear, or the aircraft may be equipped with avionics that are no longer supported by their manufacturer. Our goal is to make sure the buyer is not making someone else's problems theirs."

jetAVIVA's Deaton echoes those comments and adds, "I think a big part of what we provide is our ability to mitigate risks and save clients money during the transaction process. When our transactional and technical teams get involved, they work with our clients and aircraft service centers to complete a comprehensive pre-buy inspection.

"Depending on the needs of each client, we can also call on legal, taxation, insurance, operational, and training experts to ensure that no unhappy surprises are waiting in the wings," she continues. "This is an unexpected benefit for many first-time buyers in particular. It can be especially challenging when we are importing or exporting the airplane. That brings in a lot of potential issues that can ruin the outcome."

THE BOTTOM LINE ABOUT BROKERS

By now, you're probably thinking, "The knowledge that a broker can contribute to my transaction team seems indispensable. But what will it cost?

Well, as the old saying goes, "You have to spend money to make money"—or in this case, to save it. As any aircraft owner will tell you, if you buy the wrong airplane, even at a great price, it's a bad deal.

In the turbine markets, most brokers and acquisition fees are fixed. In some cases, brokers structure their fees as a percentage of the price of the aircraft. The percentage typically fluctuates by aircraft category, and often has a minimum/maximum cap.

And, yes, you're free to negotiate how your deal is structured with your broker. Just don't start your relationship by asking about the cost.

If you're still left wondering whether hiring a broker is the best move for you, you might want to consider the final comment from jetAVIVA's Deaton: "We've had many of our clients go through the entire process with us and say, 'I had no idea how hard this was going to be. I'm so happy you were there to help me navigate through it all. I would have been way over my head had I tried to do this alone.'"

mental capabilities. Pilots at all three carriers filed labor grievances in response.

That same year, Congress created the Federal Aviation Agency (now the Federal Aviation Administration/FAA), with the responsibility for civil aviation safety. Surely, retirement policy and regulation would have been key issues confronting the new agency.

Meanwhile, the airlines' retirement disputes were sent to binding arbitration for resolution, where all three of the companies were ruled in violation of fair labor law. The Western Airlines arbitrator said the evidence didn't support the carrier's contention "that it is unsafe to let a pilot perform after the age of 60" or "that the attainment of age 60 is in itself enough to disqualify a pilot."

American Airlines alone refused to comply with the ruling, which helped spark a pilots' strike that the airline settled in early 1959. Shortly after that, American's CEO, C.R. Smith, sent a private missive to the head of the FAA, Elwood Quesada—the two were close friends, having served together in the Army Air Force during World War II—advocating a government-mandated retirement age. Whatever the impact of Smith's entreaty, soon thereafter the agency drafted a medical justification for mandatory retirement, and by year's end the age 60 rule was published.

The following year, the International Air Transport Association (IATA), a global representative of airlines' interests, recommended that its members incorporate the same benchmark, and in 1963 ICAO adopted an age-60 pilot retirement standard, based on perceived risks of sudden incapacitation, according to ICAO.

(Not all countries have followed ICAO's recommendation: Australia, Brazil, Canada, Costa Rica, New Zealand, Senegal, and Ukraine are among the members that have no Part 121 retirement mandates, though their 65-and-older pilots are barred from nations ascribing to ICAO age standards. Japan, amid a long-term pilot shortage, raised the retirement age from 65 to 68 in 2015.)

Over succeeding years, calls to raise or abolish the limit continued, and ICAO periodically reviewed and left in place the age-60 standard, even as advances in healthcare quantifiably extended the vitality of aging populations throughout the developed world.

AGING SCIENCE

With U.S. airline traffic rebounding after 9/11 early in this century and concerns about a possible pilot shortage growing, the Senate directed the FAA to revisit the issue of pilot age and accidents.

> "The lack of a pilot age restriction for large private air carriers is a growing concern in aviation safety..."

The agency's Civil Aeromedical Institute (now the Civil Aerospace Medical Institute) published four reports in response. Two, published in 2003, examined pilot age and accident rates, the first focusing on ATP pilots, the second analyzing both ATP and commercial pilots, and both including accident data from Part 135 pilots aged 60 to 63.

The reports' conclusions were filled with caveats. However, the first found, "The overall tests suggest that mean accident rates did not differ statistically by age group," while the second determined that "the main effect for age was statistically significant in all analyses."

A third report was simply a bibliography of research and publications on pilot age and performance conducted during the 1990s, and the fourth was a statistical analysis of the data used by the Chicago Tribune in a 1999 article that reported airline accidents were spread evenly among all pilot age groups.

One of the FAA's conclusions in this last report resonates even today amid debates about links between pilot age and safety risks: "...More comprehensive investigations are warranted. There are important technical issues that must be carefully considered in order to conduct a more definitive, and informative, analysis with regard to Age 60."

These four reports were written more than 20 years ago, before airline pilots were permitted to fly until age 65, and remain the only pilot age-related research the FAA has conducted.

Support for relaxing retirement rules, meanwhile, gained more traction in the international community. In 2006, following a policy review by its Technical Commission, ICAO determined that although incapacitation risk increases with age—the basis for its age 60 rule—"the risk of incapacitation[-]cause accident is less now than in the 1970s," because of improved life expectancy and medical technologies. Accordingly, ICAO raised the standard retirement age to 65 for multi-crew operations, when paired with a second crewmember under age 60.

The U.S. was among a small minority (16 percent) of the organization's almost 200 members that favored maintaining the age-60 rule due to possible safety risks.

But despite the U.S. defense of the status quo, by the next year, the FAA and ALPA reversed their backing for the age 60 rule, and Congress set 65 as the new limit in 2007's Fair Treatment for Experienced Pilots Act.

THE BUSINESS AVIATION PATH

Fast forward a decade. In 2018, NetJets declared, "The lack of a pilot age restriction for large private air carriers is a growing concern in aviation safety," and that same year Congress proposed establishing mandatory retirement rules for Part 135 and Part 91K (fractional

ownership) operators. The proposed law would have applied only to those flying 150,000 or more flight operations per year—a benchmark that NetJets alone, operating the world's largest fleet of business jets, met.

Though the proposal was scrapped that year, it resurfaced in the omnibus spending bill adopted by Congress in December 2022, with two key changes. First, the operational threshold was halved; any operator flying at least 75,000 jet operations annually may establish a retirement age of 70 for its pilots. Second, the policy is optional for qualifying operators. Once instituted, however, a mandatory retirement policy can't be reversed.

NetJets implemented the policy in January, reportedly affecting fewer than 100 of the company's some 3,100 pilots. A request by a group of pilots for a preliminary injunction blocking the policy implementation was denied, as the court deemed the plaintiffs' case unlikely to succeed. NetJets declined to comment on its new policy, and the NetJets Association of Shared Aircraft Pilots, the pilots' union, also declined to comment, citing potential pending litigation.

Even after cutting the initial proposal's qualifying flight-operations threshold in half—to 75,000 operations—only three additional operators qualify: Flexjet, Vista Global, and Wheels Up.

"Flexjet has opted against implementing the rule," said Joe Salata, that company's senior vice president of flight operations. "We do not have any reason to force retirement when the pilots remain healthy and qualified."

Vista America president Dave Stanley sidestepped the retirement policy question but said that the company's training, in-house programs, and proficiency checks for its pilots ensure "their continued proficiency and competence." Wheels Up declined to address the topic.

The Flight Safety Foundation followed the development of the Part 135 retirement

> "We have examined NTSB accident data and cannot find any correlation between age and safety..."
>
> — Aircraft Owners and Pilots Association

policy, finding it without medical justification. "We're interested in data-driven provisions, based on stringent medical requirements, and I don't believe the age of 70 is data-driven," said Hassan Shahidi, president and CEO. Advances in medical technology, diagnostic capability, and health data analysis should be harnessed to "make sure that pilots are assessed appropriately, and the right decisions are made in terms of their suitability to fly, regardless of age," Shahidi said.

The National Air Transportation Association (NATA), while taking no position on the new retirement rule, also sees no evidence of risk reduction in the retirement mandate.

"What data is telling you that safety has been marginalized because of [age]?" NATA's v-p of regulatory affairs, Alan Stephens, asked rhetorically. "That's where the logic behind the argument [for age limits] begins to fall apart."

That same absence of evidence appears to apply to the Part 91 world. "We have examined NTSB accident data and cannot find any correlation between age and safety," said the Aircraft Owners and Pilots Association (AOPA), whose members are mostly general aviation pilots, unencumbered by regulatory age limits. But today, insurance underwriters "are not renewing policies or quoting exorbitant premiums" once pilots hit 70, even with impeccable safety and health records, AOPA said, forcing many to stop flying.

The new Part 135/91K retirement mandate was not the first effort to put business aviation operations under federal age limits. In 1980, amidst a rapid expansion in air charter activity, the NTSB, citing three unspecific accidents, told the FAA it had found "significant medical problems involving pilots more than 60 years old," and recommended that Part 121 age limits "should be equally and immediately applied to Part 135 operations." Noting

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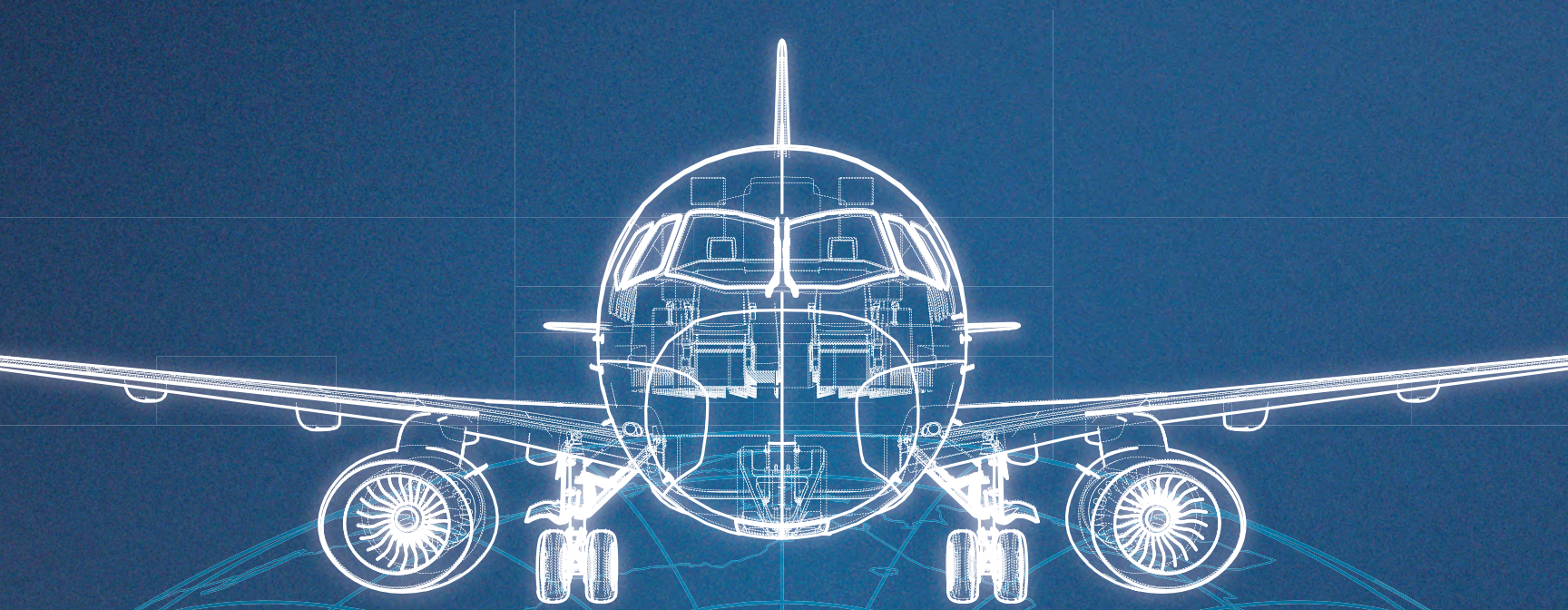

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that previous studies on the link between aging and human performance "have generally been inconclusive," the NTSB also recommended that the agency undertake its own studies to establish an appropriate age limit for charter pilots.

Concurrently, the National Institute of Health (NIH) was conducting a congressionally mandated study examining whether mandatory retirement for pilots aged 60 or older was medically warranted, and the two aviation organizations agreed to review the NIH report's results before proceeding.

The NIH concluded that insufficient precise and reliable data existed for determining the medical appropriateness of mandatory retirement ages, or understanding how the data could be medically evaluated to make such determinations. Citing these results to the safety board, the FAA declined to change its retirement regulations, and after several attempts to get the agency to reverse that decision, in 1984 the NTSB classified its Part 135 mandatory retirement recommendation as "Closed—unacceptable action."

THE NEGOTIATIONS

Negotiations over the five-year FAA reauthorization making its way through Congress have been the latest retirement age battleground. Sparked by concerns that a pilot shortage could impact service to smaller communities, the House version of the bill initially proposed raising the Part 121 retirement age from 65 to 67 before it was removed to ensure swift progress on the bill.

However, the issue still had become a sticking point in the Senate. Sen. Lindsey Graham (R-South Carolina), a leading supporter, minimized any potential safety impact, noting that when the limit was raised from 60 to 65 in 2007, "The sky did not fall."

Not taking any chances, when the Senate Commerce, Science, and Transportation Committee brought the reauthorization package up for consideration, FAA Administrator Michael Whitaker wrote committee leaders, stating, "...Other countries have not conducted research before increasing their upper age limit, but in the United States, we have the largest, most complex system in the world." Before increasing the retirement age, Whitaker said, "It is crucial to provide the agency an opportunity to conduct research and determine mitigations."

ALPA restated its opposition, labeling the alleged pilot shortage a "fake problem," and charging that the change would disrupt airlines' operations and training, and raise ticket prices.

The Senate Commerce Committee, like the House, left the retirement age unmentioned in its FAA funding proposal, making any change an uphill battle. But still concerned, ALPA waged a major lobbying campaign in March, taking out ads in publications read by lawmakers to object to any potential policy change.

ICAO and its age 65 standard will be the next theater for the campaign's opposing forces, coming later this year. IATA, representing almost 300 carriers, in 2022 submitted a paper to the organization, "Upper Age Limit for Pilots," that suggests scrapping Part 121 pilot age limits entirely.

"The demand for commercial pilots is expected to exceed supply," IATA's paper said, and the time had come to "revisit legacy age limitation requirements to ensure that they remain fit for purpose, do not represent an unjustified barrier to employment for these critical workers, and do not constitute de facto age discrimination."

The proposal is scheduled to come before the organization's 193 member states for consideration at this September's General Assembly in Montreal.

AIN 2024 FBO Survey

REPORT BY **CURT EPSTEIN**, CHARTS AND DATA BY **DAVE LEACH**

For the major business aviation market of North America, 2023 experienced a decline in flight activity compared with the previous year as the industry continues to stabilize from the Covid-era boom. According to Aviation Business Strategies Group's (ABSG) annual fuel sale survey, 41 percent of the FBO respondents noted they experienced lower fuel sales last year compared with 2022.

"After FBO fuel sales recovered in 2021 to pre-pandemic levels, we have seen a gradual softening across the market spectrum over the past two years," said ABSG co-principal and FBO industry veteran John Enticknap. "This downward trend seems to indicate that the general aviation market is testing a lower annual fuel volume as jet-A prices remain mostly elevated."

According to Argus International's TraqPak data, 2023 business aviation flight activity declined 3.3 percent in North America when compared with 2022. Despite this, some U.S. FBOs **AIN** spoke with in its annual FBO survey indicated that 2023 was a record year for them. Argus points out that comparing last year with 2019 shows an 11.8 percent increase in 2023 and argues that without the Covid aberration, it would equate to a rather normal 2 to 3 percent annual increase.

European activity declined 10.2 percent. December 2023 showed the lowest monthly activity, signaling a return to pre-Covid activity patterns.

The FBO operators in ABSG's survey support this view: 41 percent indicated they believe their fuel sales will be flat this year and 30 percent anticipated a modest increase in fuel sales from 2023.

While record-breaking consolidation activity has taken place in the FBO market, that pace should cool as larger chains pause to digest recent additions. "This is not to suggest there is a buyer's fatigue, rather, with every acquisition comes the need for integration, optimization, and stabilization," said Douglas Wilson, president and senior partner of consultancy FBO Partners. "To a certain extent this creates a human resourcing tax in further acquisitions, as many of the same [M&A teams] that conduct the acquisition then pivot to integration mode."

Wilson noted an evolution in how airports choose to award FBO leases, centering on sustainability. "[Request for proposals] scoring criteria has changed and changed significantly," he told **AIN**, adding the subject is now receiving increased consideration. "Sustainability scores can be as much as 20 percent or more of an overall score, which can make or break a respondent.

"The cost of achieving sustainability must be passed along to an end-user customer," Wilson said. "While a tenant may not care if the hangar they base in has LED lighting, solar panels, geothermal heat, or a roofline designed to capture rainwater runoff, those requirements of an airport make them more expensive to build."

In the **AIN** survey this year, Texas and Florida dominated the top 5 percent of the FBOs, with those states each fielding five locations or one third of the top tier each. No other state had as many as two, with the remaining five slots filled by facilities in Michigan, Tennessee, Colorado, Alabama, and Idaho.

To reach those highest rungs, an FBO must excel in more than one or two areas. This year, while two locations each earned the highest scores in two of the five categories, one ranked among the top 20 percent of FBOs in the Americas, while the other placed below that threshold. To attain the highest overall rankings, an FBO must exhibit excellence across all five categories in the eyes of its **AIN** reader customers.

The Americas

For the fourth consecutive year, Pentastar Aviation, a full service-provider at Detroit-area Oakland County International Airport (KPTK) has received the highest score in **AIN**'s annual FBO survey. **AIN** readers who evaluated hundreds of aircraft handling facilities on a 1 to 5 scale in five categories—line service, passenger amenities, pilot amenities, facilities, and CSRs—awarded the location an overall score of 4.81, an improvement of 0.03 points from last year.

Second place, with a 4.79 overall score, went to American Aero FTW at Fort Worth Meacham International Airport (KFTW) in Texas, followed by Sheltair Tampa (KTPA) in Florida with a score of 4.76. Tied for fourth was newcomer to the **AIN** survey Galaxy FBO with its facility at Dallas-area Addison Airport (KADS) and Henriksen Jet Center, the lone FBO at privately-owned Houston Executive Airport (KTME)—both of which earned a 4.74 overall score.

In fifth place this year with a score of 4.73 was Banyan Air Service with its sprawling campus at Fort Lauderdale Executive Airport (KFXE), which tied with fellow Florida FBO Jet Aviation at Palm Beach International Airport (KPBI).

Rounding out the top 5 percent this year were: Henriksen Jet Center (KEDC), Wilson Air Center (KMEM), Business Jet Center (KDAL), Galaxy FBO (KCXO), Sheltair (KBJC), Sheltair (KFLL), Aero-One Aviation (KDHN), Base Operations at Page Field (KFMY), and Western Aircraft (KBOI).

4.81

Pentastar Aviation

Oakland County International Airport (KPTK), Pontiac, Michigan

Like fine wine, some things improve with age. That is certainly the case with Pentastar Aviation, which celebrates its 60th anniversary this year and shows no signs of slowing down, having been the top-rated FBO in **AIN**'s annual survey for the past four years.

The company—born from the former Chrysler flight department—has evolved over the past six decades to become an independent, full-service FBO, offering a gamut of maintenance, completions, and refurbishment services. Pentastar also offers a robust aircraft charter and management division in addition to traditional aircraft handling, fueling, and sheltering.

For the second straight year, it is the only facility to be ranked among the top 10 locations in all five categories: line service (4.83), passenger amenities (4.76), pilot amenities (4.77), facilities (4.79), and CSRs (4.89).

The Avfuel-branded complex is home to 30 turbine-powered aircraft ranging from a BBJ-8 to an Eclipse very light jet. It includes 155,000 sq ft of hangar space and 10 acres of reinforced ramp space.

TOP RATED FBOS IN THE AMERICAS (BY OVERALL AVERAGE)

FBO	AIRPORT CODE	AIRPORT	OVERALL AVERAGE	CHANGE FROM LAST YEAR	
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.81	0.03	Top 5%
AMERICAN AERO	KFTW	FORT WORTH MEACHAM INTL	4.79	0.02	Top 5%
SHELTAIR KTPA	KTPA	TAMPA INTL	4.76	-0.01	Top 5%
GALAXY FBO	KADS	ADDISON	4.74	N/A	Top 5%
HENRIKSEN JET CENTER	KTME	HOUSTON EXECUTIVE	4.74	0.02	Top 5%
BANYAN AIR SERVICE	KFXE	FORT LAUDERDALE EXECUTIVE	4.73	0.00	Top 5%
JET AVIATION	KPBI	PALM BEACH INTL	4.73	0.01	Top 5%
HENRIKSEN JET CENTER	KEDC	AUSTIN EXECUTIVE	4.72	0.01	Top 5%
WILSON AIR CENTER	KMEM	MEMPHIS INTL	4.71	-0.02	Top 5%
BUSINESS JET CENTER	KDAL	DALLAS LOVE FIELD	4.70	0.01	Top 5%
GALAXY FBO	KCXO	LONE STAR EXECUTIVE	4.70	N/A	Top 5%
SHELTAIR KBJC	KBJC	ROCKY MOUNTAIN METROPOLITAN	4.70	-0.01	Top 5%
SHELTAIR KFLL	KFLL	FORT LAUDERDALE/ HOLLYWOOD INTL	4.70	-0.01	Top 5%
AERO-ONE AVIATION	KDHN	DOTHAN REGIONAL	4.69	0.00	Top 5%
BASE OPERATIONS AT PAGE FIELD	KFMY	PAGE FIELD	4.69	0.01	Top 5%
WESTERN AIRCRAFT	KBOI	BOISE AIR TERMINAL/ GOWEN FIELD	4.69	0.00	Top 5%
GLOBAL SELECT	KSGR	SUGAR LAND REGIONAL	4.68	0.01	Top 10%
LUX FBO	CYHU	ST-HUBERT	4.68	0.04	Top 10%
MCKINNEY AIR CENTER	KTKI	MCKINNEY NATIONAL AIRPORT	4.68	0.02	Top 10%
SHELTAIR	KORL	ORLANDO EXECUTIVE	4.68	0.01	Top 10%
DESERT JET CENTER	KTRM	JACQUELINE COCHRAN REGIONAL	4.67	0.05	Top 10%
HAWTHORNE GLOBAL AVIATION SERVICES	KPWK	CHICAGO EXECUTIVE	4.67	0.00	Top 10%
SHELTAIR	KJAX	JACKSONVILLE INTL	4.67	0.01	Top 10%
SIGNATURE AVIATION (FORMERLY MERIDIAN)	KTEB	TETERBORO	4.67	0.00	Top 10%
SHELTAIR	KDAB	DAYTONA BEACH INTL	4.66	0.04	Top 10%
TEXAS JET	KFTW	FORT WORTH MEACHAM INTL	4.66	0.01	Top 10%
WILSON AIR CENTER	KCHA	LOVELL FIELD	4.66	0.00	Top 10%
JET CENTER AT SANTA FE	KSAF	SANTA FE MUNICIPAL	4.65	0.00	Top 10%
MODERN AVIATION	KAPA	CENTENNIAL	4.65	0.02	Top 10%
SHELTAIR	KDTO	DENTON MUNICIPAL	4.65	N/A	Top 10%
US TRINITY AVIATION	KDTO	DENTON MUNICIPAL	4.65	N/A	Top 10%
ATLANTIC AVIATION	KMKC	CHARLES B. WHEELER DOWNTOWN	4.64	0.00	Top 20%
MILLION AIR	KHOU	WILLIAM P HOBBY	4.64	0.03	Top 20%
MILLION AIR	KHPN	WESTCHESTER COUNTY	4.64	0.01	Top 20%
SONOMA JET CENTER	KSTS	CHARLES M. SCHULZ - SONOMA COUNTY	4.64	N/A	Top 20%
AERO CHARTER, INC	KSUS	SPIRIT OF ST LOUIS	4.63	0.03	Top 20%
DEL MONTE AVIATION	KMRY	MONTEREY PENINSULA	4.63	-0.02	Top 20%
FARGO JET CENTER	KFAR	HECTOR INTL	4.63	-0.05	Top 20%
MILLION AIR	KAUS	AUSTIN-BERGSTROM INTL	4.63	N/A	Top 20%
MONTEREY JET CENTER	KMRY	MONTEREY PENINSULA	4.63	0.00	Top 20%
SHELTAIR	KPIE	ST PETERSBURG-CLEARWATER INTL	4.63	0.03	Top 20%
SKYSERVICE	CYYZ	LESTER B. PEARSON INTL	4.63	0.01	Top 20%
ATLANTIC AVIATION	KOKC	WILL ROGERS WORLD	4.62	-0.02	Top 20%
MILLION AIR - DALLAS	KADS	ADDISON	4.62	-0.01	Top 20%
ALLIANCE AVIATION SERVICES	KAFW	FORT WORTH ALLIANCE	4.61	0.02	Top 20%
ATLANTIC AVIATION	KCRQ	MCCLELLAN-PALOMAR	4.61	-0.01	Top 20%
EMBRAER FBO	SDCO	SOROCABA	4.61	0.00	Top 20%
J. A. AIR CENTER	KARR	AURORA MUNICIPAL	4.61	0.01	Top 20%
NORTHEAST AIR	KPWM	PORTLAND INTL JETPORT	4.61	0.02	Top 20%
SHELTAIR KPMP	KPMP	POMPANO BEACH AIRPARK	4.61	0.05	Top 20%
SIGNATURE AVIATION	KSTP	ST PAUL DOWNTOWN HOLMAN FIELD	4.61	-0.01	Top 20%
SIGNATURE AVIATION (FORMERLY MERIDIAN)	KHWD	HAYWARD EXECUTIVE	4.61	0.00	Top 20%
WILSON AIR CENTER	KCLT	CHARLOTTE/ DOUGLAS INTL	4.61	0.02	Top 20%
CUTTER AVIATION	KPHX	PHOENIX SKY HARBOR INTL	4.60	0.01	Top 20%
CUTTER AVIATION	KCOS	CITY OF COLORADO SPRINGS MUNICIPAL	4.60	0.01	Top 20%
GLOBAL AVIATION	KHIO	PORTLAND-HILLSBORO	4.60	0.01	Top 20%
HERITAGE AVIATION	KBTV	BURLINGTON INTL	4.60	-0.03	Top 20%
JACKSON JET CENTER	KPHX	PHOENIX SKY HARBOR INTL	4.60	0.00	Top 20%
NATIONAL JETS	KFLL	FORT LAUDERDALE/ HOLLYWOOD INTL	4.60	0.01	Top 20%
SHELTAIR	KECP	NORTHWEST FLORIDA BEACHES INTL	4.60	0.00	Top 20%
STANDARD AVIATION	TIST	CYRIL E KING - CHARLOTTE AMALIE	4.60	N/A	Top 20%

SOUTHEAST REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
ATLANTA			
HILL AIRCRAFT	KFTY	4.46	0.05
AERO CENTER EPPS ATLANTA	KPDK	4.37	0.00
SIGNATURE AVIATION	KPDK	4.33	0.13
ATLANTIC AVIATION	KPDK	4.17	0.00
SIGNATURE AVIATION	KFTY	3.95	0.00
BOCA RATON/POMPANO BEACH			
SHELTAIR	KPMP	4.61	0.05
SIGNATURE AVIATION	KBCT	4.37	0.01
ATLANTIC AVIATION	KBCT	4.17	0.00
CHARLESTON			
SIGNATURE AVIATION	KCHS	4.52	-0.01
ATLANTIC AVIATION	KCHS	4.11	0.02
CHARLOTTE			
WILSON AIR CENTER	KCLT	4.61	0.02
CHATTANOOGA			
WILSON AIR CENTER	KCHA	4.66	0.00
DAYTONA BEACH			
SHELTAIR	KDAB	4.66	0.04
FORT LAUDERDALE			
BANYAN AIR SERVICE	KFXE	4.73	0.00
SHELTAIR	KFLL	4.70	-0.01
NATIONAL JETS	KFLL	4.60	0.01
FORT LAUDERDALE EXECUTIVE JET CENTER	KFXE	4.54	N/A
JETSCAPE	KFLL	4.31	0.07
FORT MYERS/NAPLES			
BASE OPERATIONS AT PAGE FIELD	KFMY	4.69	0.01
NAPLES AVIATION	KAPF	4.28	0.02
PRIVATESKY AVIATION	KRSW	4.22	-0.03
JACKSONVILLE			
SHELTAIR	KJAX	4.67	0.01
MEMPHIS			
WILSON AIR CENTER	KMEM	4.71	-0.02
SIGNATURE AVIATION	KMEM	4.04	0.00
MIAMI			
FONTAINEBLEAU AVIATION	KOPF	4.51	0.05
ATLANTIC AVIATON	KOPF	4.40	0.00
SIGNATURE AVIATION	KMIA	4.25	0.01
SIGNATURE AVIATION	KOPF	4.14	-0.01
NASHVILLE			
ATLANTIC AVIATION	KBNA	4.15	0.03
SIGNATURE AVIATION	KBNA	4.12	0.00
NORTHWEST FLORIDA			
SHELTAIR	KECP	4.60	0.00
ATLANTIC AVIATION	KDTS	4.40	-0.04
MILLION AIR	KTLH	4.24	0.02
ORLANDO			
SHELTAIR	KORL	4.68	0.01
ATLANTIC AVIATION	KORL	4.50	0.00
ATLANTIC AVIATION	KMCO	4.48	0.00

The main 5,000-sq-ft terminal offers passenger lounges, multimedia-equipped conference rooms (including the unique tower conference room that is accessed via elevator and provides a panoramic view of the airport), company offices, and the Five-star Café. The latter houses the company's in-house professional catering department, which has become so popular that in addition to serving customers at neighboring FBOs, it also services operators at other airports in the region.

The complex also includes the Stargate, a separate large aircraft charter terminal with its own baggage carousel and what is believed to be the only privately-operated jetway in the country. Having achieved International Business Aviation Council's (IBAC) International Standard for Business Aircraft Operations (IS-BAO) Stage 3 registration two years ago, Pentastar this month will undergo the audit for the International Standard for Business Aircraft Handling (IS-BAH).

SOUTHEAST REGION (continued)

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
SIGNATURE AVIATION	KMCO	4.35	0.00
SIGNATURE AVIATION	KISM	4.31	N/A
RALEIGH/DURHAM			
TAC AIR	KRDU	4.15	0.00
SIGNATURE AVIATION	KRDU	3.89	0.01
SARASOTA			
ATLANTIC AVIATION	KSRQ	4.54	-0.01
DOLPHIN AVIATION	KSRQ	3.54	-0.02
SAVANNAH			
SHELTAIR	KSAV	4.59	-0.02
TAMPA/ST. PETERSBURG			
SHELTAIR	KTPA	4.76	-0.01
SHELTAIR	KPIE	4.63	0.03
SHELTAIR	KSPG	4.33	-0.04
SIGNATURE AVIATION	KTPA	3.99	0.05
WEST PALM BEACH/STUART			
JET AVIATION	KPBI	4.73	0.01
ATLANTIC AVIATION - STUART JET CENTER	KSUA	4.57	-0.07
APP JET CENTER	KSUA	4.48	0.03
SIGNATURE AVIATION	KPBI	4.41	0.00
ATLANTIC AVIATION	KPBI	4.33	0.00

FBOs with same score are listed in alphabetical order

"I think it obviously starts with the full services we provide," said Brad Bruce, the company veteran who was recently appointed president and CEO. "I think right behind that is the reputation that we enjoy for service, so people who really want a value are the clients we secure."

4.79

American Aero FTW

Fort Worth Meacham International Airport (KFTW), Fort Worth, Texas

When American Aero FTW opened seven years ago, it was with the goal of incorporating virtually any innovation to improve the FBO experience for its clients, and it has certainly accomplished that goal, according to **AIN**'s readers who have placed it firmly in the top 5 percent of all FBOs since 2018. This year, the company ranked in the top 10 in four of the five survey categories: passenger amenities (4.76), pilot amenities (4.76), facilities (4.80,) and CSRs (4.86), and it is one of two facilities to earn scores of 4.76 or higher in each of the five categories.

Located in the Meacham International Airport terminal building, adjacent to the U.S. Customs and Border Protection and Immigration facility, American Aero's 8,600-sq-ft area offers a variety of technological advances including sensor-driven, self-tinting windows in the lobby to dampen the harsh Texas sun; white noise speakers embedded in the walls to provide privacy; a noise-proof, one-ton door on the snooze room in the pilot lounge to ensure peace and quiet for resting crew; and a high-speed dishwasher for quick turns. Other amenities consist of three passenger lounges (including a

separate TSA-secure private lounge with ensuite bathroom and direct ramp access), a private dining room equipped with china for crew meals, a private lounge with monitors so pilots can watch for arriving passengers, shower facilities, a well-stocked refreshment bar, a 20-seat conference room, complimentary overnight crew cars, and a galley for food preparation.

The Avfuel-branded FBO sits on a 34-acre leasehold with more than 250,000 sq ft of hangar space that can accommodate the latest flagship business jets. It is home to 55 jets and turboprops, and plans call for the construction of another 40,000-sq-ft hangar.

"The feature of our FBO that is most appreciated and remarked upon by pilots is our expansive, 11-acre rectangular ramp that makes aircraft movements effortless," said general manager Angela Thurmond, adding another six acres are currently under development. "The ramp is also a significant safety feature, as it allows for multiple aircraft of various sizes and reduces the issue of jet blast on the ramp." Safety has always been in the facility's DNA. It was the world's first to achieve IS-BAH Stage 1 and Stage 3 registration.

4.76
Sheltair
Tampa International Airport (KTPA), Tampa, Florida

For its entire 17-year existence, Sheltair Tampa (and before that Tampa International Jet Center) has held a spot in the top rungs of the **AIN** FBO Survey. This year the facility was among the leaders in four of the five survey categories: line service (4.79), passenger amenities (4.76), pilot amenities (4.73), and facilities (4.79), and one of only three to score more than 4.70 in every category.

2023 was a busy year for the Avfuel-branded location, which occupies 35 acres at KTPA and is open 24/7 with a staff of 45. It recently concluded a $1.4 million interior modernization on its 12,000-sq-ft terminal, including the relocation of the customer service desk, addition of another conference room, refurbishment of the spacious lobby and pilot lounge, renovated restrooms, and a new refreshment area. Among the terminal's most popular features are a streetside porte d'cochere as well as its iconic ramp-side arrivals canopy to protect guests from Florida's notoriously fickle weather.

Home to 47 turbine aircraft from a Gulfstream G550 on down, the IS-BAH Stage 2-registered complex has 284,000 sq ft of hangar space, including a $26 million expansion project consisting of 77,000 sq ft of aircraft shelter along with 32,000 sq ft of office space that opened last year. By the middle of the year, Sheltair will have broken ground on a 50,000-sq-ft MRO

GREAT LAKES REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
BATTLE CREEK			
DUNCAN AVIATION	KBTL	4.39	0.01
CHICAGO			
HAWTHORNE GLOBAL AVIATION SERVICES	KPWK	4.67	0.00
J. A. AIR CENTER	KARR	4.61	0.01
ATLANTIC AVIATION	KPWK	4.55	0.01
B COLEMAN AVIATION	KGYY	4.51	0.11
SIGNATURE AVIATION	KPWK	4.42	0.02
CINCINNATI			
SIGNATURE AVIATION	KLUK	3.90	-0.03
CLEVELAND			
ATLANTIC AVIATION	KCLE	3.90	0.03
COLUMBUS			
LANE AVIATION	KCMH	4.25	0.04
SIGNATURE AVIATION	KCMH	3.92	0.00
DETROIT			
PENTASTAR AVIATION	KPTK	4.81	0.03
INDIANAPOLIS			
MILLION AIR	KIND	4.54	0.00
JET ACCESS INDIANAPOLIS EXECUTIVE AIRPORT (FORMERLY FIRST WING JET CENTER)	KTYQ	4.22	-0.05
SIGNATURE AVIATION	KIND	3.87	-0.40
LEXINGTON/LOUISVILLE			
SIGNATURE AVIATION	KLEX	4.48	0.00
ATLANTIC AVIATION	KSDF	4.25	0.04
MILWAUKEE			
SIGNATURE AVIATION	KMKE	4.40	0.04

FBOs with same score are listed in alphabetical order

WEST REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
ANCHORAGE			
ATLANTIC AVIATION	PANC	4.30	-0.01
HONOLULU			
ATLANTIC AVIATION	PHNL	4.48	-0.01
SIGNATURE AVIATION	PHNL	4.24	0.00
LAS VEGAS			
SIGNATURE AVIATION	KLAS	4.36	0.00
ATLANTIC AVIATION	KLAS	4.27	-0.01
HENDERSON EXEC ARPT	KHND	4.17	0.01
LOS ANGELES			
ATLANTIC AVIATION	KLGB	4.52	-0.04
MILLION AIR	KBUR	4.48	-0.02
ACI JET (SNA)	KSNA	4.38	0.08
CLAY LACY AVIATION	KSNA	4.35	N/A
CLAY LACY AVIATION	KVNY	4.35	0.03
PALM SPRINGS			
DESERT JET CENTER	KTRM	4.67	0.05
ATLANTIC AVIATION	KTRM	4.42	0.00
ATLANTIC AVIATION	KPSP	4.37	-0.01
SIGNATURE AVIATION	KPSP	4.29	0.01
PORTLAND			
GLOBAL AVIATION	KHIO	4.60	0.01
ATLANTIC AVIATION	KPDX	4.47	0.00
SAN DIEGO			
ATLANTIC AVIATION	KCRQ	4.61	-0.01
CARLSBAD JET CENTER	KCRQ	4.48	0.07
SIGNATURE AVIATION	KSAN	3.87	-0.01
SAN FRANCISCO/OAKLAND			
DEL MONTE AVIATION	KMRY	4.63	-0.02
MONTEREY JET CENTER	KMRY	4.63	0.00
SIGNATURE AVIATION (FORMERLY MERIDIAN)	KHWD	4.61	0.00
SIGNATURE AVIATION	KOAK	4.28	0.03
ATLANTIC AVIATION	KSJC	4.18	-0.01
SEATTLE			
MODERN AVIATION	KBFI	4.26	0.01
SIGNATURE AVIATION	KBFI	4.17	0.04

FBOs with same score are listed in alphabetical order

facility, which will be operated by a third party when it becomes operational in the third quarter of 2025.

The FBO has many unique benefits due to its location. As a result of KTPA's proximity to the city, an upscale shopping and dining district is just across the street from the FBO's front door, while Raymond James Stadium (home to the NFL's Tampa Bay Buccaneers) abuts the airport property. This allows the FBO to shuttle passengers heading there for football games—or as was the case last year, a trio of sold-out Taylor Swift concerts—to a side gate within walking distance of the stadium's entrance.

MIDWEST REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
DES MOINES			
MODERN AVIATION	KDSM	4.45	0.01
FARGO			
FARGO JET CENTER	KFAR	4.63	-0.05
KANSAS CITY			
ATLANTIC AVIATION	KMKC	4.64	0.00
SIGNATURE AVIATION	KMKC	3.91	-0.01
LINCOLN			
ATLANTIC AVIATION	KLNK	4.48	-0.01
DUNCAN AVIATION	KLNK	4.27	0.01
MINNEAPOLIS/ST. PAUL			
SIGNATURE AVIATION	KSTP	4.61	-0.01
SIGNATURE AVIATION	KMSP	4.49	0.00
ST PAUL FLIGHT CENTER	KSTP	4.35	0.00
PREMIER JET CENTER	KFCM	4.30	-0.01
ELLIOTT AVIATION	KFCM	4.12	0.00
OMAHA			
REVV AVIATION	KCBF	4.30	0.00
TAC AIR	KOMA	4.27	0.02
ST LOUIS			
AERO CHARTER	KSUS	4.63	0.03
MILLION AIR	KSUS	4.49	0.01
SIGNATURE AVIATION	KSUS	4.37	-0.02
SIGNATURE AVIATION	KSTL	3.80	0.00
WICHITA			
YINGLING AVIATION	KICT	4.47	0.06
SIGNATURE AVIATION	KICT	4.31	0.00

FBOs with same score are listed in alphabetical order

4.74
Galaxy FBO
Addison Airport (KADS), Dallas, Texas

A newcomer to **AIN**'s annual FBO survey is Galaxy FBO, which is also the newest of the three service providers at Dallas-area dedicated general aviation gateway Addison Airport. Galaxy also operates FBOs at two other Texas airports, Houston Hobby (KHOU) and Conroe/North Houston (KCXO). At KADS, its grand opening was in late 2022, delayed by post-pandemic labor and supply issues. In its first appearance in our FBO survey, the facility scored in the top 10 in three of the five categories, with the highest (4.80) for its facilities, followed by pilot amenities (4.76) and passenger amenities (4.72).

SOUTH REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
AUSTIN/SAN ANTONIO			
HENRIKSEN JET CENTER	KEDC	4.72	0.01
MILLION AIR	KAUS	4.63	N/A
MILLION AIR	KSAT	4.58	0.03
SIGNATURE AVIATION - NORTH TERMINAL	KSAT	4.31	0.01
ATLANTIC AVIATION	KAUS	4.29	-0.02
DALLAS/FORT WORTH			
AMERICAN AERO	KFTW	4.79	0.02
GALAXY FBO	KADS	4.74	N/A
BUSINESS JET CENTER	KDAL	4.70	0.01
MCKINNEY AIR CENTER	KTKI	4.68	0.02
TEXAS JET	KFTW	4.66	0.01
HOUSTON			
HENRIKSEN JET CENTER	KTME	4.74	0.02
GALAXY FBO	KCXO	4.70	N/A
GLOBAL SELECT	KSGR	4.68	0.01
MILLION AIR	KHOU	4.64	0.03
JET AVIATION HOUSTON	KHOU	4.45	0.02
LITTLE ROCK			
SIGNATURE AVIATION	KLIT	4.09	-0.02
NEW ORLEANS			
FLIGHTLINE FIRST	KNEW	4.39	0.01
ATLANTIC AVIATION	KMSY	4.23	0.00
SIGNATURE AVIATION	KNEW	4.22	0.01
OKLAHOMA CITY			
ATLANTIC AVIATION	KOKC	4.62	-0.02

FBOs with same score are listed in alphabetical order

Open 24/7 with a staff of 22, the IS-BAH Stage 1 FBO's 14,364-sq-ft, pet-friendly terminal offers conference rooms, concierge, pilot lounge with snooze room, shower facilities, turnkey tenant office space, on-site car rental, crew cars, and an expansive refreshment bar. Recently added was a special event/meeting room with runway views that can accommodate up to 100 people and has already been used to host several industry events. An enclosed parking garage for customer vehicles is also available.

Occupying 17 acres at the south end of KADS, with easy access to Runway 33, the complex has 110,000 sq ft of hangar space, which can handle the latest ultra-long-range business jets, and the largest contiguous ramp on the field. The Phillips 66-fueled facility is home to 33 jets and turboprops whose owners love to fly—according to general manager Jaime Muñoz—leaving room for short-term clients seeking transient hangar space. "2023 exceeded our expectations for both base tenant occupancy and transient aircraft traffic," she told **AIN**. "We are noticing more of our customers investing in larger and newer aircraft, and we are seeing a decline in the number of older aircraft visiting Addison Airport."

4.74
Henriksen Jet Center
Houston Executive Airport (KTME), Houston, Texas

Sharing the fourth highest score in this year's survey is Henriksen Jet Center, the lone service provider at privately-owned Houston Executive Airport. Just edging out its sibling and fellow Paragon FBO Network

member Austin Executive Airport among the top five FBOs this year, it improved on its tally from last year and earned the highest score in the pilot amenities category (4.81) among all FBOs in the 2024 survey. Key to that is the facility's massive arrivals canopy, which the company claims is the largest in the world. "In the Houston heat, it is a huge relief to be shaded not only on the arrival and departure, but when our pilots are in the aircraft pre-flighting," said Andy Perry, executive director for both airports.

Other amenities in the 23,300-sq-ft terminal include a crew suite with theater room, shower facilities, a pair of snooze/quiet rooms, kitchenette and dining area, flight planning room, 10-seat A/V-equipped conference room, refreshment bar, and concierge service. A complimentary valet parking garage is available to customers along with onsite car rental and courtesy crew cars.

The building—which opened in 2013 and is staffed 24/7/365—features 8,000 sq ft of tenant office space as well as a two-story passenger lobby with an authentic Ferrari 333 SP race car on display and floor-to-ceiling windows overlooking the ramp.

Home to 28 jets and 24 turboprops, the Phillips 66-supplied facility—which had its busiest year in 2023—provides the booming Houston area with more than 10 acres of ramp and 179,000 sq ft of hangar space that can accommodate the latest big business jets.

"We believe that our personalized service is a major factor of why our clientele visit," Perry told **AIN**. "This is why we emphasize our ramp CSRs program, who are dual trained to handle ramp duties while meeting the customers at the aircraft and are trained at the CSR desk." That, he noted has forged the company's line technicians and CSRs into a seamless cohesive unit.

Among the improvements this past year at KTME is a new control tower, which replaced a temporary facility to the delight of the air traffic controllers.

4.73
Banyan Air Service
Fort Lauderdale Executive Airport (KFXE), Fort Lauderdale, Florida

Banyan Air Service is the largest FBO in the world, with its sprawling complex occupying 120 acres at Florida's Fort Lauderdale Executive Airport. Its 360,000 sq ft of hangar space—spread between the north and south sides of the field—is home to nearly 200 turbine-powered aircraft.

The 14,000-sq-ft main terminal features an airy two-story atrium decorated with a waterfall, large saltwater aquarium, palm trees and paddle fans, and includes a separate TV lounge; three pilot lounges; a trio of a/v-equipped conference rooms seating six, 10, and 30 respectively; two snooze rooms, business center; and duty-free shop. Ramp side vehicle access, crew cars, onsite car rental, 24-hour catering, and U.S. customs between 8 a.m. and midnight are also available.

Other popular features at the Avfuel-branded facility are the world's largest pilot shop and the Jetway Café, a breakfast and lunch destination that is run by a local caterer. The main terminal caters primarily to transient traffic, while across the field on the north side, a 9,500-sq-ft satellite terminal serves base tenants in the 160,000-sq-ft hangar complex added in 2020.

Combined they all served to give the FBO its top-10 scores in the passenger amenities (4.72) and facilities (4.80) categories. Demonstrating its consistency, Banyan repeated its overall score from last year's survey.

Open 24/7 with a staff of 190, the IS-BAH Stage 2 facility serves as a gateway to the Caribbean, offering travel assistance and documentation services for the

NORTHEAST REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
ALBANY			
MILLION AIR	KALB	4.55	0.05
BALTIMORE			
SIGNATURE AVIATION	KBWI	4.10	0.00
BOSTON			
JET AVIATION	KBED	4.28	0.01
ATLANTIC AVIATION	KBED	4.26	-0.01
SIGNATURE AVIATION	KBED	3.99	0.03
SIGNATURE AVIATION	KBOS	3.59	0.00
BURLINGTON			
HERITAGE AVIATION	KBTV	4.60	-0.03
HARTFORD			
SIGNATURE AVIATION	KBDL	4.34	0.00
TAC AIR	KBDL	4.06	-0.01
LONG ISLAND			
MODERN AVIATION	KISP	4.46	-0.06
MODERN AVIATION	KFOK	4.45	0.02
MODERN AVIATION	KFRG	4.44	0.01
ATLANTIC AVIATION	KFRG	4.21	0.00
MAINE			
NORTHEAST AIR	KPWM	4.61	0.02
BANGOR AVIATION SERVICES	KBGR	3.93	0.00
NEW YORK CITY			
SIGNATURE AVIATION (FORMERLY MERIDIAN)	KTEB	4.67	0.00
MILLION AIR	KHPN	4.64	0.01
JET AVIATION	KTEB	4.46	0.00
SIGNATURE AVIATION - SOUTH TERMINAL	KTEB	4.37	0.01
SIGNATURE AVIATION	KMMU	4.25	0.00
PHILADELPHIA			
ATLANTIC AVIATION	KPHL	4.03	0.00
ATLANTIC AVIATION	KPNE	3.59	0.00
PITTSBURGH			
ATLANTIC AVIATION	KPIT	4.53	-0.02
ATLANTIC AVIATION	KAGC	4.24	N/A
WASHINGTON D.C.			
SIGNATURE AVIATION	KDCA	4.43	0.00
APP JET CENTER	KHEF	4.29	0.00
JET AVIATION	KIAD	4.26	0.00
SIGNATURE AVIATION	KIAD	4.26	0.03

FBOs with same score are listed in alphabetical order

ROCKY MOUNTAIN REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
ALBUQUERQUE			
CUTTER AVIATION	KABQ	4.53	0.02
BOISE			
WESTERN AIRCRAFT	KBOI	4.69	0.00
JACKSON JET CENTER	KBOI	4.33	-0.02
BOZEMAN			
YELLOWSTONE JETCENTER BY SIGNATURE	KBZN	4.52	0.01
JET AVIATION	KBZN	4.33	0.05
COLORADO MOUNTAINS			
VAIL VALLEY JET CENTER	KEGE	4.57	-0.01
ATLANTIC AVIATION	KMTJ	4.55	-0.05
ATLANTIC AVIATION	KRIL	4.30	0.00
TELLURIDE REGIONAL AIRPORT	KTEX	4.22	0.01
ATLANTIC AVIATION	KASE	4.13	0.01
COLORADO SPRINGS			
CUTTER AVIATION	KCOS	4.60	0.01
COLORADO JETCENTER	KCOS	3.96	-0.02
DENVER			
SHELTAIR	KBJC	4.70	-0.01
MODERN AVIATION	KAPA	4.65	0.02
DENVER JETCENTER	KAPA	4.50	0.00
SIGNATURE AVIATION	KDEN	4.42	0.00
SIGNATURE AVIATION SOUTH	KAPA	4.20	0.00
KALISPELL			
GLACIER JET CENTER	KGPI	4.49	-0.02
GRAND JUNCTION			
WEST STAR AVIATION	KGJT	4.46	0.00
JACKSON HOLE			
JACKSON HOLE FLIGHT SERVICES	KJAC	3.69	0.03
PHOENIX/SCOTTSDALE			
CUTTER AVIATION	KPHX	4.60	0.01
JACKSON JET CENTER	KPHX	4.60	0.00
SIGNATURE AVIATION	KSDL	4.58	0.00
ATLANTIC AVIATION	KSDL	4.42	0.02
CUTTER AVIATION	KDVT	4.38	0.03
PUEBLO			
FLOWER AVIATION	KPUB	4.43	0.00
SALT LAKE CITY			
SIGNATURE AVIATION	KSLC	4.44	-0.01
ATLANTIC AVIATION	KSLC	4.30	-0.03
SANTA FE			
JET CENTER AT SANTA FE	KSAF	4.65	0.00
SIGNATURE AVIATION	KSAF	3.79	-0.03
SUN VALLEY			
ATLANTIC AVIATION	KSUN	4.53	0.06
TUCSON			
ATLANTIC AVIATION	KTUS	4.38	0.00
MILLION AIR	KTUS	4.25	0.00

FBOs with same score are listed in alphabetical order

Bahamas and other island destinations.

Banyan also operates a Part 145 repair station at KFXE with an avionics shop, engine shop, paint shop, and parts department. For the first time, the company expanded, opening a satellite MRO at Northeast Florida Regional Airport (KSGJ) dedicated to HondaJet maintenance.

"Banyan is known to be a one-stop-shop for all aviation services when you visit South Florida," said COO Jon Tonko. "Whether you fly a J-3 or a Global Express, customers can expect a warm welcome from our team of professionals who share a passion to serve you above and beyond your expectations."

4.73

Jet Aviation

Palm Beach International Airport (KPBI), West Palm Beach, Florida

Jet Aviation is a global service provider with more than 30 FBOs scattered around the globe, but it is its location at Palm Beach International Airport that perennially tops its facilities in the annual **AIN** FBO survey. A member of the Air Elite Network of upscale FBOs, the facility's main 18,000-sq-ft, two-story terminal is open 24/7 and features passenger lounges, pilot lounge, snooze room, flight planning area, shower facilities, conference room, concierge and crew cars, courtesy shuttles, and onsite car rental. Its refreshment bar offers favored treats to beat the Florida heat, including freshly-squeezed lemonade, ice cream, and tropical-flavored slushees along with local healthy snacks. It is an approved gateway to Washington Reagan National Airport under the TSA's DCA Access Standard Security Program (DASSP), and like all other Jet Aviation facilities, it is IS-BAH Stage 2 registered.

A secondary 7,000-sq-ft terminal shared with sister company Gulfstream opened in 2020 along with a new 40,000-sq-ft hangar, which brought the facility—home to 52 turbine-powered aircraft—up to 200,000 sq ft of space that is capable

CANADA

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
CALGARY			
SKYSERVICE	CYYC	4.51	0.02
MONTREAL			
LUX FBO	CYHU	4.68	0.04
SIGNATURE AVIATION	CYUL	4.52	0.00
SKYSERVICE	CYUL	4.40	-0.01
TORONTO			
SKYSERVICE	CYYZ	4.63	0.01
SIGNATURE AVIATION	CYYZ	3.49	-0.01
VANCOUVER			
SKYSERVICE VANCOUVER	CYVR	4.32	N/A

FBOs with same score are listed in alphabetical order

BRAZIL

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
SAO PAULO			
EMBRAER FBO	SDCO	4.61	0.00
WORLD-WAY AVIATION	SDCO	4.55	0.02
LIDER AVIACAO	SBSP	3.76	-0.01

FBOs with same score are listed in alphabetical order

CARIBBEAN

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
ST THOMAS			
STANDARD AVIATION	TIST	4.60	N/A
PROVIDENCIALES			
PROVO AIR CENTER	MBPV	4.57	0.09
NASSAU			
ODYSSEY AVIATION	MYNN	4.36	0.00
JET NASSAU	MYNN	4.12	0.05
ST MAARTEN			
EXECUJET	TNCM	3.68	0.00

FBOs with same score are listed in alphabetical order

of accommodating bizliners such as the BBJ and ACJ. For outside aircraft parking, it also has more than a half million square feet of ramp space in its 25-acre leasehold at KPBI.

While the Phillips 66-branded location, which has been in operation since 1985, received no score lower than a 4.68 in any category this year, its highest score (4.80) was for its CSRs. "It is our team that truly sets us apart," explained Steven Schrammel, the location's general manager. "Many of them have been part of the team for years and their longevity and commitment to one another and our customers is shown in the seamless manner in which they keep our operation running."

While the location does not yet offer sustainable aviation fuel, it does allow customers the option to purchase it and receive the environmental credits through the company's book-and-claim program, with the actual fuel dispensed at the seven Jet Aviation locations that stock it.

TOP FBOS BY CATEGORY — AMERICAS

FBO	AIRPORT CODE	AIRPORT	LINE SERVICE
CLAY LACY AVIATION-KSNA	KSNA	JOHN WAYNE AIRPORT-ORANGE COUNTY	4.95
JET CENTER AT SANTA FE	KSAF	SANTA FE MUNICIPAL	4.89
DESERT JET CENTER	KTRM	JACQUELINE COCHRAN REGIONAL	4.88
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.83
NATIONAL JETS	KFLL	FORT LAUDERDALE/HOLLYWOOD INTL	4.81
MCKINNEY AIR CENTER	KTKI	MCKINNEY NATIONAL AIRPORT	4.80
MONTEREY JET CENTER	KMRY	MONTEREY PENINSULA	4.80
NORTHEAST AIR	KPWM	PORTLAND INTL JETPORT	4.79
SHELTAIR KTPA	KTPA	TAMPA INTL	4.79
AERO-ONE AVIATION	KDHN	DOTHAN REGIONAL	4.78
CUTTER AVIATION	KCOS	CITY OF COLORADO SPRINGS MUNICIPAL	4.78
WILSON AIR CENTER HOU	KHOU	WILLIAM P HOBBY	4.78
FBO	**AIRPORT CODE**	**AIRPORT**	**PASSENGER AMENITIES**
MILLION AIR	KAUS	AUSTIN-BERGSTROM INTL	4.86
HENRIKSEN JET CENTER	KEDC	AUSTIN EXECUTIVE	4.82
LUX FBO	CYHU	ST-HUBERT	4.77
AMERICAN AERO	KFTW	FORT WORTH MEACHAM INTL	4.76
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.76
SHELTAIR KTPA	KTPA	TAMPA INTL	4.76
WESTERN AIRCRAFT	KBOI	BOISE AIR TERMINAL/GOWEN FIELD	4.76
BUSINESS JET CENTER	KDAL	DALLAS LOVE FIELD	4.73
BANYAN AIR SERVICE	KFXE	FORT LAUDERDALE EXECUTIVE	4.72
GALAXY FBO	KADS	ADDISON	4.72
GLOBAL SELECT	KSGR	SUGAR LAND REGIONAL	4.72
WILSON AIR CENTER MEM	KMEM	MEMPHIS INTL	4.72

FBO	AIRPORT CODE	AIRPORT	PILOT AMENITIES
HENRIKSEN JET CENTER	KTME	HOUSTON EXECUTIVE	4.81
MILLION AIR	KAUS	AUSTIN-BERGSTROM INTL	4.79
GLOBAL SELECT	KSGR	SUGAR LAND REGIONAL	4.77
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.77
AMERICAN AERO	KFTW	FORT WORTH MEACHAM INTL	4.76
GALAXY FBO	KADS	ADDISON	4.76
HENRIKSEN JET CENTER	KEDC	AUSTIN EXECUTIVE	4.74
SHELTAIR KTPA	KTPA	TAMPA INTL	4.73
WESTERN AIRCRAFT	KBOI	BOISE AIR TERMINAL/GOWEN FIELD	4.70
BUSINESS JET CENTER	KDAL	DALLAS LOVE FIELD	4.69
US TRINITY AVIATION	KDTO	DENTON MUNICIPAL	4.69
FBO	**AIRPORT CODE**	**AIRPORT**	**FACILITIES**
MILLION AIR	KAUS	AUSTIN-BERGSTROM INTL	4.90
GALAXY FBO	KCXO	LONE STAR EXECUTIVE	4.84
GLOBAL SELECT	KSGR	SUGAR LAND REGIONAL	4.83
SHELTAIR	KDTO	DENTON MUNICIPAL	4.83
HENRIKSEN JET CENTER	KEDC	AUSTIN EXECUTIVE	4.81
AMERICAN AERO	KFTW	FORT WORTH MEACHAM INTL	4.80
BANYAN AIR SERVICE	KFXE	FORT LAUDERDALE EXECUTIVE	4.80
GALAXY FBO	KADS	ADDISON	4.80
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.79
SHELTAIR KTPA	KTPA	TAMPA INTERNATIONAL	4.79
FBO	**AIRPORT CODE**	**AIRPORT**	**CSRS**
CLAY LACY AVIATION-KSNA	KSNA	JOHN WAYNE AIRPORT-ORANGE COUNTY	4.92
SIGNATURE AVIATION	KSTP	ST PAUL DOWNTOWN HOLMAN FIELD	4.91
PENTASTAR AVIATION	KPTK	OAKLAND COUNTY INTL	4.89
ATLANTIC AVIATION	PHNL	HONOLULU INTERNATIONAL	4.88
AMERICAN AERO	KFTW	FORT WORTH MEACHAM INTL	4.86
FORT LAUDERDALE EXECUTIVE JET CENTER	KFXE	FORT LAUDERDALE EXECUTIVE	4.84
JET CENTER AT SANTA FE	KSAF	SANTA FE MUNICIPAL	4.84
SHELTAIR	KDTO	DENTON MUNICIPAL	4.83
SIGNATURE AVIATION (FORMERLY MERIDIAN)	KTEB	TETERBORO	4.82
DESERT JET CENTER	KTRM	JACQUELINE COCHRAN REGIONAL	4.81
TEXAS JET	KFTW	FORT WORTH MEACHAM INTL	4.81

Rest of World

AIN's annual FBO survey divides the world into two groups, the Americas and the Rest of World (RoW). This year, UK facilities dominated the top of the charts in the latter group with designated business aviation gateway Farnborough Airport (EGLF)—with its overall score of 4.67—again earning the highest accolades in the survey as it has virtually since the day it opened two decades ago.

Second place saw a tie between two FBOs at London Stansted Airport (EGSS): Harrods Aviation's The Brompton (formerly the Fayair complex, which Harrods acquired last year) and Universal Aviation; both received a score of 4.61. Following them, with a tally of 4.54, is Harrods' original location at EGSS—now known as The Knightbridge to distinguish it from its newer sibling—giving the London airport three FBOs in the top tier of the Rest of World segment this year.

For proof that there are quality FBOs outside the UK's capital area, we must travel to the other side of the world, where ExecuJet Australia at Sydney Kingsford Smith Airport (YSSY) earned a score of 4.52, tying it with Jet Aviation's facility at Amsterdam's Schiphol Airport (EHAM).

Other top performers in the RoW this year included Eccelsa Aviation at Olbia Costa Smeralda Airport (LIEO) in Italy and Signature Aviation's facility at Germany's Munich International Airport (EDDM), both of which received a score of 4.49, landing them in the top 20 percent of all FBOs worldwide.

4.67
Farnborough Airport (EGLF)
Farnborough, UK

Though the scores of most FBOs outside of the Americas tend to lag, the UK's Farnborough Airport continues to hold its own among the highest-performing FBOs in **AIN**'s annual survey. The complex earned top 10 scores in the passenger (4.76) and pilot amenities (4.73) categories this year, and the second highest score overall for facilities (4.86).

The continued high regard in which aircraft operators continue to hold Farnborough would appear to be a testimony to its ongoing commitment to invest in the site and the old real estate adage "location, location, location." The privately-owned airport is one of two in the London area that is entirely dedicated to business aviation and is in the process of seeking approval to increase the permitted number of movements.

"At the core of our customer service ethos is prioritizing our passengers' need for an efficient and secure arrival and departure experience," FBO director Dominic Osborne told **AIN**. "Stepping into our renowned terminal facility should evoke the ambience of a world-class hotel. Our customer service ethos very much aligns with our organizational

TOP RATED FBOS IN EUROPE, THE MIDDLE EAST, AFRICA, AND ASIA-PACIFIC (BY OVERALL AVERAGE)

FBO	AIRPORT CODE	AIRPORT	OVERALL AVERAGE	CHANGE FROM LAST YEAR	
FARNBOROUGH AIRPORT	EGLF	FARNBOROUGH	4.67	-0.02	Top 20%
HARRODS AVIATION-THE BROMPTON	EGSS	LONDON STANSTED	4.61	N/A	Top 20%
UNIVERSAL AVIATION	EGSS	LONDON STANSTED	4.61	0.00	Top 20%
HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	LONDON STANSTED	4.54	0.12	Top 20%
EXECUJET AUSTRALIA	YSSY	SYDNEY KINGSFORD SMITH	4.52	0.00	Top 20%
JET AVIATION	EHAM	AMSTERDAM SCHIPHOL	4.52	0.05	Top 20%
ECCELSA GENEREAL AVIATION	LIEO	OLBIA COSTA SMERALDA	4.49	0.01	Top 20%
SIGNATURE AVIATION	EDDM	MUNICH	4.49	0.01	Top 20%
MJETS FBO	VTBD	DON MUEANG INTERNATIONAL	4.46	0.01	
JET AVIATION	LSGG	GENEVA INTERNATIONAL	4.44	0.02	
HARRODS AVIATION	EGGW	LONDON LUTON	4.42	0.02	
HONG KONG BUSINESS AVIATION CENTER	VHHH	HONG KONG INTERNATIONAL	4.41	0.10	
SIGNATURE AVIATION	LSGG	GENEVA INTERNATIONAL	4.41	0.00	
GRAFAIR JET CENTER	ESSB	STOCKHOLM CITY/BROMMA	4.40	0.02	
LONDON JET CENTRE	EGSS	LONDON STANSTED	4.40	0.02	
JET AVIATION	EDDL	DUSSELDORF	4.35	0.03	
JET AVIATION	LSZH	ZURICH	4.34	0.02	
JET AVIATION	YSSY	SYDNEY KINGSFORD SMITH	4.32	0.03	
EXECUJET MIDDLE EAST	OMDB	DUBAI INTERNATIONAL	4.31	0.02	
MALLORCAIR	LEPA	PALMA DE MALLORCA	4.31	0.00	
OMNI HANDLING	LPPT	LISBON INTERNATIONAL PORTELA	4.31	N/A	
ADVANCED AIR SUPPORT	LFPB	PARIS LE BOURGET	4.24	0.01	
JET AVIATION	OMDB	DUBAI INTERNATIONAL	4.24	0.02	
UNIVERSAL AVIATION	WSSL	SINGAPORE/SELETAR	4.23	0.00	
SIGNATURE AVIATION - TERMINAL 3	LFPB	PARIS LE BOURGET	4.22	0.00	
BIGGIN HILL EXECUTIVE HANDLING	EGKB	BIGGIN HILL	4.19	0.02	
UNIVERSAL AVIATION	LFPB	PARIS LE BOURGET	4.19	0.00	
DASSAULT FALCON SERVICES	LFPB	PARIS LE BOURGET	4.16	0.05	
SIGNATURE AVIATION	LFMN	NICE COTE D'AZUR INTERNATIONAL	4.16	-0.02	
SIGNATURE AVIATION - TERMINAL 1	LFPB	PARIS LE BOURGET	4.12	0.00	
EXECUJET BRUSSELS	EBBR	BRUSSELS NATIONAL	4.11	0.00	
SKY VALET CANNES	LFMD	CANNES-MANDELIEU	4.09	0.02	
SIGNATURE AVIATION - TERMINAL 1	EGGW	LONDON LUTON	4.04	-0.03	
JET AVIATION	LSZH	ZURICH	4.01	0.01	
SWISSPORT EXECUTIVE	LFMN	NICE COTE D'AZUR INTERNATIONAL	4.01	0.00	
BUSINESS FLIGHT CENTER	EFHK	HELSINKI-VANTAA	4.00	0.00	
SKY VALET	LEMD	MADRID BARAJAS	4.00	0.02	
AVIAPARTNER EXECUTIVE	LFMN	NICE COTE D'AZUR INTERNATIONAL	3.99	0.01	
JET AVIATION	WSSL	SINGAPORE/SELETAR	3.99	0.04	
JETEX PARIS FBO	LFPB	PARIS LE BOURGET	3.97	0.00	
VIENNA AIRCRAFT HANDLING	LOWW	VIENNA INTERNATIONAL	3.92	0.00	
UNIVERSAL AVIATION / CJET	ZBAA	BEIJING/CAPITAL	3.36	0.03	
VIPPORT VNUKOVO-3	UUWW	MOSCOW/VNUKOVO	3.35	0.00	

FBOs with same score are listed in alphabetical order

EUROPE REGION			
FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
AMSTERDAM			
JET AVIATION	EHAM	4.52	0.05
DÜSSELDORF			
JET AVIATION	EDDL	4.35	0.03
GENEVA			
JET AVIATION	LSGG	4.44	0.02
SIGNATURE AVIATION	LSGG	4.41	0.00
LISBON			
OMNI HANDLING	LPPT	4.31	N/A
LONDON			
FARNBOROUGH AIRPORT	EGLF	4.67	-0.02
HARRODS AVIATION-THE BROMPTON	EGSS	4.61	N/A
UNIVERSAL AVIATION	EGSS	4.61	0.00
HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	4.54	0.12
HARRODS AVIATION	EGGW	4.42	0.02
MUNICH			
SIGNATURE AVIATION	EDDM	4.49	0.01
PARIS			
ADVANCED AIR SUPPORT	LFPB	4.24	0.01
SIGNATURE AVIATION - TERMINAL 3	LFPB	4.22	0.00
UNIVERSAL AVIATION	LFPB	4.19	0.00
SIGNATURE AVIATION - TERMINAL 1	LFPB	4.12	0.00
DASSAULT FALCON SERVICES	LFPB	4.16	0.05
JETEX	LFPB	3.97	0.00
SARDINIA			
ECCELSA AVIATON	LIEO	4.49	0.01
SOUTHERN FRANCE			
SIGNATURE AVIATION	LFMN	4.16	-0.02
SKY VALET CANNES	LFMD	4.09	0.02
SWISSPORT EXECUTIVE	LFMN	4.01	0.00
AVIAPARTNER EXECUTIVE	LFMN	3.99	0.01
STOCKHOLM			
GRAFAIR JET CENTER	ESSB	4.40	0.02
ZURICH			
JET AVIATION	LSZH	4.34	0.02
JET AVIATION	LSZH	4.01	0.01

FBOs with same score are listed in alphabetical order

value of pride, passion, ambition, and togetherness."

Farnborough is in the second year of a £55 million ($69.5 million) investment program that will increase the airport's existing 240,000-sq-ft hangar space by 70 percent. The new Domus III structure will be able to accommodate multiple large-cabin aircraft when it opens in the next few weeks.

Alongside the new building will be a further 125,000 sq ft of apron space, taking the total area of ramp above the one-million-sq-ft mark. The airport is also investing in the capacity of aircraft stands to make runway use more efficient, as well as in a new engine-run bay.

While the comfort and convenience of its customers remains paramount, Farnborough Airport is intently committed to reducing its carbon footprint as it works to achieve net-zero status by 2030. Part of this involves making efforts to increase the availability of sustainable aviation fuel.

Last October, it stepped up work to tap renewable energy sources by installing what is expected to be the largest array of solar panels in the southeast of England. This will allow it to recharge its electric ground vehicles with a self-generated energy source.

4.61
Harrods Aviation-The Brompton (formerly Fayair)

London Stansted Airport (EGSS), UK

It was a little over a year ago when Harrods Aviation—an offshoot of the famous London department store—purchased Fayair, a rival FBO at Stansted Airport. Immediately, the company made significant upgrades to the facility both from an infrastructure and a customer amenities perspective—which contributed to its score of 4.71 in the facilities category—and labelled it The Brompton to distinguish it from its existing highly-regarded FBO at EGSS.

"Adding the Brompton to our portfolio has been even more successful than we could have dreamed of," said managing director Paul Norton. "Customers have quickly realized that we have taken the facilities to another level."

The FBO offers onsite security, customs and immigration clearance, conference room, pilot lounge and work area,

gym, driver rest area, private vehicle ramp access, and crew transfers. Its 60,000-sq-ft hangar can accommodate aircraft up to a Boeing 757. An IS-BAH Stage 2-registered FBO, the company will receive its audit for Stage 3 this year.

"What distinguishes our location from our competitors is our emphasis on self-sufficiency," Norton told **AIN**, adding it operates and maintains its own equipment, including a fleet of refuelers, to ensure reliability and control. "This commitment to self-sufficiency not only enhances our operational efficiency but also underscores our dedication to providing exceptional service to our customers."

It is the high level of service that earned the location its second 4.71 score this year, for its CSRs. "We pride ourselves on providing a level of service that exceeds expectations, tailored to the needs of our clientele with meticulous attention to detail," explained Norton.

Like many of the FBOs in the London area, the facility saw a surge in private aviation activity last year for the coronation of King Charles III. "Our reputation as the leading ground handling service provider for head-of-state traffic means we were fully ready for the magnitude of these types of events."

4.61
Universal Aviation

London Stansted Airport (EGSS), UK

One of the longest-established FBOs in the UK, Universal Aviation's facility at London Stansted Airport once again placed among the top of the 2024 **AIN**

FBO Survey as it celebrates its 40th anniversary. Part of the ground-handling arm of Texas-based Universal Weather and Aviation, the Universal Aviation Stansted operation tied for second among FBOs outside of the Americas, matching its score from last year of 4.61.

The FBO's ruby anniversary follows a year where Universal was able to join in celebrations in the coronation of King Charles III. "It was a great honor to participate in Operation Golden Orb by welcoming in many heads of state at Stansted and safely seeing them out," explained Sean Raftery, managing director for Universal Aviation in the UK and Ireland. "We worked closely with the various embassies and the UK Foreign and Commonwealth Office as well as the air and ground crews."

The two-story, 11,000-sq-ft FBO is equipped with a crew business center, crew and VIP lounges, conference facilities and shower facilities.

Universal recently upgraded the terminal's furnishings and added new vehicles and ground-support equipment. With 40,000-sq-ft of private ramp space, the facility offers several hangars that can house aircraft the size of Boeing Business Jets or Airbus Corporate Jets.

Customs and immigrations services are available onsite. With 45 team members at EGSS, the IS-BAH Stage 2 facility operates from 7 a.m. to 10 p.m. but is available for 24-hour service on request.

Universal prides itself on helping customers navigate through flight complexities, reduce their stress, and offering a high level of consistency and care, Raftery said. This includes accommodating requests such as particular newspapers or specific brands of drink and emphasizing its standards and consistency. "The biggest compliment is repeat business," he said. "We have a lot of loyal customers that return over and over." In February, he said the facility arranged a water salute for a pilot that had used the facility for 30 years and was now retiring. This approach earned the facility its high score in CRSs of 4.79.

4.54

Harrods Aviation-The Knightsbridge

London Stansted Airport (EGSS), UK

While somewhat upstaged this year by its younger sibling at London Stansted, Harrods' original facility on the field—known now as The Knightsbridge—also placed highly in **AIN**'s annual survey, giving Harrods the unusual honor of having two FBOs from the same company at the same airport earning top honors in the Rest of World category.

While the company's new Brompton location generally handles smaller private aircraft, the original facility specializes in serving VIP bizliner and commercial charter flights carrying more than 100 passengers. "The Knightsbridge has always been and remains synonymous with large-cabin handling," explained Paul Norton, the company's managing director. "It is not uncommon to see two Boeing 747s on the ramp directly outside."

ASIA-PACIFIC REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
BANGKOK			
MJETS FBO	VTBD	4.46	0.01
SYDNEY			
EXECUJET AUSTRALIA	YSSY	4.52	0.00
JET AVIATION	YSSY	4.32	0.03
BEIJING			
UNIVERSAL AVIATION / CJET	ZBAA	3.36	0.03
HONG KONG			
HONG KONG BUSINESS AVIATION CENTER	VHHH	4.41	0.10
SINGAPORE			
UNIVERSAL AVIATION	WSSL	4.23	0.00
JET AVIATION	WSSL	3.99	0.04

FBOs with same score are listed in alphabetical order

MIDDLE EAST REGION

FBO	AIRPORT CODE	2024 OVERALL AVERAGE	CHANGE FROM LAST YEAR
DUBAI			
EXECUJET MIDDLE EAST	OMDB	4.31	0.02
JET AVIATION	OMDB	4.24	0.02

FBOs with same score are listed in alphabetical order

The FBO occupies the original permanent airport terminal building built in the late '60s. Open 24/7, it offers three separate customer lounges: a head-of-state lounge with private bathroom facilities and direct ramp access, a VVIP lounge with a full bar and hot and cold beverages, and a business lounge.

Its facilities are constantly being upgraded to give the company's customers the best possible experience. "To support the ever-increasing demand for large-cabin and higher-capacity flights, we have invested in a complete overhaul of our lounge dedicated to these flights," Norton told **AIN**.

The work—in partnership with noted design brand BoConcept—provides a sophisticated yet comfortable environment and helped the facility earn its highest score (4.58) in the facilities category.

The Knightsbridge received the same score for its CSRs. "Being part of the Harrods brand gives us an amazing

opportunity to showcase best-in-class customer service," Norton said. "We talk the talk, but we also have to walk the walk."

Having achieved Stage 2 registration under the IS-BAH program, the facility is scheduled to undergo its Stage 3 audit this year.

4.52

ExecuJet Australia

Sydney Kingsford Smith Airport (YSSY), Sydney, Australia

ExecuJet, the ground-handling arm of the Luxaviation Group, has 23 FBOs around the world, and it is its facility at Australia's Sydney Kingsford Smith Airport that earned a spot among the top-rated international service providers in **AIN**'s FBO Survey for the seventh straight year. An ExecuJet location since 2000, the facility has been in operation for 45 years.

"We regularly receive clients who remember a face or a name from a trip many years ago," said Matthew Guy, the company's regional FBO manager for the Asia-Pacific region. "It is this familiarity, combined with an exceptional level of service that brings our clients back time and time again.

The Sydney FBO was the global chain's first location to achieve IS-BAH Stage 3, and it was the FBO's line service that received its highest score (4.62) in this year's survey.

"Training our line staff is paramount to our success as an FBO of choice," Guy told **AIN**. "We have a dedicated ramp supervisor and training coordinator who facilitate and monitor our training through the group learning module system."

The leasehold includes two dedicated ramps with direct lounge access and enough hangar space to accommodate a pair of Bombardier Global 7500s, while the two story 3,200-sq-ft terminal includes passenger and crew lounges, onsite CIQ services, as well as a trio of conference rooms and a catering preparation kitchen. The facility—which is open from 6 a.m. until 10 p.m. seven days a week, in line with the airport curfew—is undergoing a major refurbishment, with the first phase consisting of upgrades to the passenger lounge and reception areas. Remodeling of the meeting rooms will follow.

According to Guy, a robust events calendar led by the FIFA Woman's World Cup drove strong aircraft movements to the region, eclipsing 2022, which was already considered a strong year.

TOP FBOS BY CATEGORY — REST OF WORLD

FBO	AIRPORT CODE	AIRPORT	LINE SERVICE
UNIVERSAL AVIATION	EGSS	LONDON STANSTED	4.72
EXECUJET AUSTRALIA	YSSY	SYDNEY KINGSFORD SMITH	4.70
JET AVIATION	EHAM	AMSTERDAM SCHIPHOL	4.62
SIGNATURE AVIATION	EDDM	MUNICH	4.58
HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	LONDON STANSTED	4.52
FBO	**AIRPORT CODE**	**AIRPORT**	**PASSENGER AMENITIES**
FARNBOROUGH AIRPORT	EGLF	FARNBOROUGH	4.76
ECCELSA GENEREAL AVIATION	LIEO	OLBIA COSTA SMERALDA	4.69
HARRODS AVIATION-THE BROMPTON	EGSS	LONDON STANSTED	4.68
MJETS FBO	VTBD	DON MUEANG INTERNATIONAL	4.62
HARRODS AVIATION	EGGW	LONDON LUTON	4.59
FBO	**AIRPORT CODE**	**AIRPORT**	**PILOT AMENITIES**
FARNBOROUGH AIRPORT	EGLF	FARNBOROUGH	4.73
HARRODS AVIATION-THE BROMPTON	EGSS	LONDON STANSTED	4.61
UNIVERSAL AVIATION	EGSS	LONDON STANSTED	4.58
HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	LONDON STANSTED	4.47
GRAFAIR JET CENTER	ESSB	STOCKHOLM CITY/BROMMA	4.40
FBO	**AIRPORT CODE**	**AIRPORT**	**FACILITIES**
FARNBOROUGH AIRPORT	EGLF	FARNBOROUGH	4.86
ECCELSA GENEREAL AVIATION	LIEO	OLBIA COSTA SMERALDA	4.71
HARRODS AVIATION-THE BROMPTON	EGSS	LONDON STANSTED	4.71
JET AVIATION	EHAM	AMSTERDAM SCHIPHOL	4.61
MJETS FBO	VTBD	DON MUEANG INTERNATIONAL	4.61
FBO	**AIRPORT CODE**	**AIRPORT**	**CSRS**
OMNI HANDLING	LPPT	LISBON INTERNATIONAL PORTELA	4.84
UNIVERSAL AVIATION	EGSS	LONDON STANSTED	4.79
SIGNATURE AVIATION	EDDM	MUNICH	4.78
UNIVERSAL AVIATION	WSSL	SINGAPORE/SELETAR	4.72
HARRODS AVIATION-THE BROMPTON	EGSS	LONDON STANSTED	4.71

4.52
Jet Aviation
Schiphol Airport (EHAM), Amsterdam, Netherlands

Jet Aviation Amsterdam, a perennial standout among international FBOs according to **AIN**'s readers, tied for fourth place in the RoW category this year, with its score rising by .05 percent from last year's survey.

One of the FBOs located in the general aviation terminal at Amsterdam's Schiphol Airport, last year the Jet Aviation facility added a third customer lounge and refurbished the furniture in its "Royal Lounge." Other upgrades included a new electrical GPU, replacement of diesel tractors with electric tractors, and plans to replace gas-powered vans with electric vans for passenger transport and install solar panels where appropriate.

The facility's highest score was for line service (4.62) and underscores Jet Aviation Amsterdam's commitment to safety and customer service. "The safety of our customers, employees, and the assets in our care is our number one priority at all times," said Ricardo Paiva, senior director site operations and general manager. "Jet Aviation Amsterdam is IS-BAH Stage II certified, and we operate a rigorous and regular training program to ensure our employees are up to date with all industry-standard knowledge and certifications."

Team members also participate in a "thorough customer service training program," he said, reflecting the score of 4.58 for CSRs. "Our team is known for their warm, personalized service, whether they are welcoming regular guests, or customers visiting our FBO for the first time. We have many regular customers, and every time we greet them, it feels like we are greeting family."

The FBO's dedicated terminal space includes 600 sq m (6,450 sq ft) on two levels with three customer lounges on the first floor and two crew lounges, all facing the ramp. Jet Aviation's own ramp space can accommodate 33 aircraft.

Like many of its sister FBOs around the world, the Amsterdam location carries a supply of sustainable aviation fuel and offers book-and-claim. "As a company, we know that sustainability is a key topic for business aviation," said Paiva.

FBO SURVEY RULES AND METHODOLOGY

This report on AIN's FBO survey covers fixed-base operations in the Americas as well as in the Rest of World categories.

History — **AIN** has been conducting surveys since 1981, asking about the service that FBOs provide their customers and reporting the results annually. Initially, we sent out a paper survey questionnaire by mail to qualified subscribers in the U.S.—pilots, flight attendants, and dispatchers—the people who use or make arrangements with FBOs. In later years, qualified subscribers in the remainder of North America and the rest of the world were added to the survey.

In 2006 we moved the FBO survey online. We have continued to add FBOs each year and now offer respondents a comprehensive list of 4,500 FBOs worldwide.

The Survey — The FBO Survey site allows subscribers to keep a list of personalized FBOs. From this list they can easily change or affirm a rating or leave an updated comment.

The scores in this report and on our website reflect the cumulative average of scores from 2015 through today. Only the most recent rating of an FBO is counted on a per-user basis and only FBOs that have received 20 or more ratings are eligible for their scores to be published.

From Sept. 13, 2023, until Feb. 3, 2024, we asked subscribers to update and give new ratings for FBOs they had visited in the preceding 12 months. We contacted readers via email and announcements in our enewsletters. The bulk of this promotion took place from Dec. 6, 2023 through Feb. 3, 2024.

The FBO survey site asks readers to evaluate FBOs they visited the previous year in five categories: line service; passenger amenities; pilot amenities; facilities; and customer service representatives (CSRs). For each of these categories, the participant is asked to assign a number from 1 to 5, 1 being the lowest and 5 being the highest.

Observations — Each year we review ratings to ensure their accuracy. On our new site we have a system to flag, review, and, if necessary, remove ratings identified as dubious by factors such as email address, IP address, and concentration of scores.

Score Calculations — An FBO's overall average is calculated by adding all the individual category ratings received by that FBO and dividing the resulting sum by the total number of all category ratings received by the FBO. In other words, if a particular FBO was evaluated by 50 people (and assuming that all 50 evaluators gave that FBO a rating in each of the five categories), then the FBO would receive a total of 250 category ratings. These 250 category ratings are added together and then the sum is divided by 250 to arrive at the overall average for this particular FBO.

Overall averages are calculated using the cumulative average of all ratings given from 2015 through the present. This year's results also will show an FBO's increase or decrease versus that FBO's cumulative rating from one year ago.

Most Improved

This year, the **AIN** survey is depicting the FBOs that have marked the most improvement from last year. We chose to profile the top FBO in this category.

4.33
Signature Aviation
DeKalb-Peachtree Airport (KPDK), Atlanta, Georgia

Signature Aviation, one of three service providers at dedicated business aviation hub DeKalb-Peachtree Airport in the Atlanta area, saw the most improvement in this year's survey, with its score climbing by 0.13 points from last year. General manager Orlanda Brown credits the improvements to the facility's recent infrastructure and staff training initiatives.

Located on a more than a 13-acre leasehold on the north side of the field, the FBO's 14,800-sq-ft terminal was recently renovated with updates to its lobby, conference room (offering an expansive view of the airport), pilot lounge, and snooze room. As well, the company renovated the line service office and provided increased space for the duty managers.

A refreshment bar in the lobby offers a variety of beverages and snacks including local Georgia peanuts, and concierge service for hotel and rental car reservations is available along with dry cleaning and laundry service and dishwashing. The facility also has courtesy cars available for crew use, on-site catering, and even a pet comfort station.

"We believe that our modern and pristine facility, coupled with great products

and an unparalleled level of service and hospitality sets us apart," Brown told **AIN**. "Aside from exceptional customer service, our ramp canopy allows customers to get in and out of their aircraft rain or shine."

The complex, which is open 24/7, has 54,000-sq-ft of hangar space.

MOST IMPROVED FBOS - WORLDWIDE (BY CHANGE FROM LAST YEAR)

FBO	AIRPORT CODE	AIRPORT	OVERALL AVERAGE	CHANGE FROM LAST YEAR
SIGNATURE AVIATION	KPDK	DEKALB-PEACHTREE	4.33	0.13
HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	LONDON STANSTED	4.54	0.12
B COLEMAN AVIATION	KGYY	GARY/CHICAGO INTL	4.51	0.11
HONG KONG BUSINESS AVIATION CENTER	VHHH	HONG KONG INTL	4.41	0.10
PROVO AIR CENTER	MBPV	PROVIDENCIALES	4.57	0.09
ACI JET (SNA)	KSNA	JOHN WAYNE AIRPORT-ORANGE COUNTY	4.38	0.08
CARLSBAD JET CENTER	KCRQ	MCCLELLAN-PALOMAR	4.48	0.07
SIGNATURE AVIATION	KEYW	KEY WEST INTL	3.02	0.07
JETSCAPE	KFLL	FORT LAUDERDALE/HOLLYWOOD INTL	4.31	0.07
SHELTAIR	KLAL	LAKELAND LINDER INTL	4.52	0.07
ATLANTIC AVIATION	KSUN	FRIEDMAN MEMORIAL	4.53	0.06
ATLANTIC AVIATION	KPVD	THEODORE FRANCIS GREEN STATE	3.86	0.06
YINGLING AVIATION	KICT	WICHITA MID-CONTINENT	4.47	0.06
SHELTAIR KPMP	KPMP	POMPANO BEACH AIRPARK	4.61	0.05
SIGNATURE AVIATION	KTPA	TAMPA INTL	3.99	0.05
SIGNATURE AVIATION	KTTN	TRENTON MERCER	3.91	0.05
DASSAULT FALCON SERVICES	LFPB	PARIS LE BOURGET	4.16	0.05
DESERT JET CENTER	KTRM	JACQUELINE COCHRAN REGIONAL	4.67	0.05
FONTAINEBLEAU AVIATION	KOPF	OPA-LOCKA EXECUTIVE	4.51	0.05
HILL AIRCRAFT	KFTY	FULTON COUNTY AIRPORT-BROWN FIELD	4.46	0.05
JET AVIATION	KBZN	BOZEMAN YELLOWSTONE INTL	4.33	0.05
JET AVIATION	EHAM	AMSTERDAM SCHIPHOL	4.52	0.05
JET NASSAU	MYNN	NASSAU/LYNDEN PINDLING INTL	4.12	0.05
MILLION AIR ALB	KALB	ALBANY INTL	4.55	0.05
PORT CITY AIR	KPSM	PORTSMOUTH INTERNATIONAL AT PEASE	4.00	0.05

Above & Beyond

The below FBO staff members were recognized for going “Above & Beyond” in the field of customer service.

PERSON	FBO	AIRPORT CODE	TITLE
Anabel Stein	B COLEMAN AVIATION	KGYY	CUSTOMER SERVICE REPRESENTATIVE
Angelica Villela	BUSINESS JET CENTER	KDAL	CUSTOMER EXPERIENCE MANGER
Ann Roy	PENTASTAR AVIATION	KPTK	LEAD CUSTOMER SERVICE REPRESENTATIVE
Antonella Lombardi	MODERN AVIATION	KJFK	CUSTOMER SERVICE MANAGER
Ashley Bishop-Hallett	ATLANTIC AVIATION	KCRQ	CUSTOMER SERVICE MANAGER
Ashley Rainer	SHELTAIR KBJC	KBJC	CUSTOMER SERVICE MANAGER
Barbara Wicks	ATLANTIC AVIATION	KBDR	LEAD CUSTOMER SERVICE REPRESENTATIVE
Bernie Spencer	HERITAGE AVIATION	KBTV	CUSTOMER SERVICE REPRESENTATIVE
Betsy Santos-Torres	BOHLKE INTL AIRWAYS	TISX	CUSTOMER SERVICE MANAGER
Betsy Wines	SIGNATURE AVIATION (FORMERLY MERIDIAN)	KTEB	DIRECTOR, CUSTOMER RELATIONS
Brandon Clark	FLIGHTSERV	KTTN	CUSTOMER SERVICE/ MARKETING MANAGER
Brian King	MILLION AIR ALB	KALB	GENERAL MANAGER
Casey Blundetto	PREMIER JET CENTER	KFCM	CUSTOMER SERVICE REPRESENTATIVE
Christina Carey	ALLIANCE AVIATION SVCS	KAFW	DIRECTOR OF MARKETING AND OUTREACH
Dawndi Ulmer	FARGO JET CENTER	KFAR	CUSTOMER SERVICE REPRESENTATIVE
Delanie Potteiger	SHELTAIR	KLAL	CUSTOMER SERVICE REPRESENTATIVE
Erika Estrada	SHELTAIR KDAB	KDAB	GENERAL MANAGER
Estrella Flores	CARLSBAD JET CENTER	KCRQ	HOSPITALITY MANAGER
Eugenio Uriona	CHANTILLY AIR JET CENTER	KHEF	CUSTOMER SERVICE SUPERVISOR/PILOT
Francesco Cossu	ECCELSA AVIATION	LIEO	GENERAL MANAGER
Gavin Dyer	WILSON AIR CENTER CLT	KCLT	CONCIERGE
Hannah Branda	SHELTAIR KTPA	KTPA	CUSTOMER SERVICE REPRESENTATIVE
Harvey Tucker	MILLION AIR	KHOU	LINE SERVICE MANAGER
Holly Hopkins	TEXAS JET	KFTW	CUSTOMER RELATIONS MANAGER
Jan Lee	HONG KONG BUSINESS AVIATION CENTER	VHHH	CUSTOMER SERVICE SUPERVISOR
Jeff Carbray	SKYSERVICE	CYYC	MANAGER, FBO OPERATIONS
Jenna Anderson	ATLANTIC AVIATION	KPIT	CUSTOMER SERVICE REPRESENTATIVE
Jenner Brown	JACKSON JET CENTER	KBOI	CUSTOMER SERVICE REPRESENTATIVE
Julia Mogg	HENRIKSEN JET CENTER	KEDC	CUSTOMER SERVICE REPRESENTATIVE
Katie Tisma	HARRODS AVIATION	EGGW	CUSTOMER SERVICE MANAGER
Kawai Lopez	MONTEREY JET CENTER	KMRY	CUSTOMER SERVICE MANAGER
Kerrie Kiefer	CUTTER AVIATION	KABQ	CUSTOMER SERVICE MANAGER
Kevin Cayer	FONTAINEBLEAU AVIATION	KOPF	REGIONAL DIRECTOR OF SALES
Kyndal Burch	MILLION AIR	KSAT	CUSTOMER SERVICE LEAD
Lauren Rones-Payne	MILLION AIR	KHPN	GENERAL MANAGER
Leigh Kendziorski	SHELTAIR	KSAV	GENERAL MANAGER
Liane Rolle	NATIONAL JETS	KFLL	GUEST SERVICES SUPERVISOR
Lindsey Sherman	PROJET AVIATION	KJYO	CLIENT SERVICE MANAGER
Lita Tanner	SHELTAIR	KFLL	CUSTOMER SERVICE REPRESENTATIVE
Meatha Southern	SHELTAIR	KDTO	CUSTOMER SERVICE REPRESENTATIVE
Melissa Shollenbarger	GALAXY FBO	KADS	REGIONAL DIRECTOR OF SALES
Mellisa Luedke	MAC JETS	KPWM	CUSTOMER SERVICE REPRESENTATIVE
Michelle King	MCKINNEY AIR CENTER	KTKI	CUSTOMER SERVICE REPRESENTATIVE
Monica Otin	PROVO AIR CENTER	MBPV	SENIOR CONCIERGE
Mya Hamilton	GLOBAL SELECT	KSGR	AIRPORT SERVICES REPRESENTATIVE
Nathan Farrow	HARRODS AVIATION-THE KNIGHTSBRIDGE	EGSS	HEAD OF CUSTOMER EXPERIENCE
Nikki Newcity	SHELTAIR KECP	KECP	CUSTOMER SERVICE MANAGER
Pam Coates	WILSON AIR CENTER CHA	KCHA	CONCIERGE SUPERVISOR
Peni Nelson	DESERT JET CENTER	KTRM	CUSTOMER RELATIONS ADVISOR
Phillip Humphries	SHELTAIR KJAX	KJAX	LINE SERVICE MANAGER
Pierre Tremblay	LUX FBO	CYHU	SALES MANAGER
Richard Campbell	CUTTER AVIATION	KPHX	REGIONAL MANAGER, LINE SERVICES
Savanah Dowling	CLAY LACY AVIATION-KSNA	KSNA	LEAD CLIENT SERVICES REPRESENTATIVE
Shalene England	J. A. AIR CENTER	KARR	CUSTOMER SERVICE REPRESENTATIVE MANAGER
Shanna Ash	HILL AIRCRAFT	KFTY	CUSTOMER SERVICE MANAGER
Shelby Atwell	AERO-ONE AVIATION	KDHN	CUSTOMER SERVICE REPRESENTATIVE
Solange Videira	SKYSERVICE VANCOUVER	CYVR	CUSTOMER SERVICE REPRESENTATIVE
Stone Chau	TAG AVIATION	VMMC	DEPUTY GENERAL MANAGER
Tara Creel-Cesena	CUTTER AVIATION	KDVT	GENERAL MANAGER
Vincent Camus	DASSAULT FALCON SERVICES	LFPB	CUSTOMER SERVICE REPRESENTATIVE
Willy Mayorga	BANYAN AIR SERVICE	KFXE	LINE SERVICE TECHNICIAN
Ysabella Tetley	HENRIKSEN JET CENTER	KTME	CUSTOMER RELATIONS MANAGER

Piasecki steps up development of hydrogen-powered PA-890 helicopter

BY CHARLES ALCOCK

The legacy rotorcraft manufacturer aims to fly a prototype of the slow-rotor wing compound PA-890 in 2028.

Piasecki Aircraft Corp (PiAC) is stepping up its plans to bring a hydrogen-powered helicopter to market by the end of the decade. Development work that has been significantly boosted by support from the U.S. Air Force (USAF) now involves the evolution of a 660-kilowatt test rig for the propulsion system into an iron bird unit that will pave the way for a full-scale prototype the company aims to start flying in 2028.

The PA-890 slow-rotor wing compound helicopter is expected to be able to carry a pilot and up to seven passengers on trips longer than 200 nm. Its projected payload is 1,660 pounds and the maximum takeoff weight is 7,000 pounds.

Pennsylvania-based PiAC anticipates that the aircraft will be used for both commercial and defense applications such as emergency medical flights, cargo logistics, and personnel transport and could potentially also be employed for commercial air taxi operations. The company expects the PA-890 to deliver a 50 percent reduction in operating costs compared with current turbine helicopters, as well as being much quieter and producing zero emissions.

"We've made some significant progress and what we're striving towards is to increase the energy density available for vertical flight by around five times compared with batteries," president and CEO John Piasecki told **AIN**. "We're aiming for a market that we feel is robust enough to warrant this investment to meet demand from operators needing longer range than they can get from eVTOL aircraft."

The PA-890 will be powered by a high-temperature proton exchange membrane fuel cell system being developed by ZeroAvia, which is advancing plans to convert existing airliners seating up to around 80 passengers. As part of work with the USAF, PiAC has already produced a two-seat proof-of-concept demonstrator using an 80-kilowatt propulsion system.

According to the company, five prospective launch customers have shown interest in the PA-890. For now, their identities remain private, but they are providing

input for the program regarding their operating requirements and preferences. "For instance, new trends in the emergency medical space have seen customers pushing to increase the payload of the aircraft they operate so that they can carry more sophisticated equipment," Piasecki commented.

While pressure for air transport to decarbonize may be mounting, Piasecki said the interest his potential customers are showing in hydrogen is mainly driven by economics. "Commercial helicopter operators have margins of only around 4 percent, so affordable operations is an existential issue for them," he stated, adding that because the hydrogen fuel cell system has far fewer moving parts than a turbine engine, it will significantly reduce maintenance costs.

PENTAGON SEEKS TRANSFORMATIVE VTOL CAPABILITY

In November 2023, the USAF awarded PiAC a $37 million contract toward the development of its Aerial Reconfigurable Embedded System (ARES) tilt-duct VTOL aircraft. This came from the Air Force's Afwerx research and development program as part of its strategic funding increase initiative, which is available for small businesses that have won Phase 2 contracts from the agency's small business innovation research and technology transfer programs.

Originally developed under a DARPA program as a collaboration between PiAC, Lockheed Martin, and Sierra Nevada Corp., ARES is an optionally crewed VTOL aircraft powered by twin ducted fans mounted on a tiltwing. After completing design studies, a contract to develop a proof-of-concept ARES flight demonstrator was awarded to Lockheed Martin and PiAC in 2014.

After investing more than $89 million into research and development, DARPA canceled the ARES program in 2019, citing cost overruns and schedule slips. The aircraft was transferred back to PiAC, which has developed and integrated a new triplex fly-by-wire flight control system with its partner Honeywell, thanks to follow-on funding from the USAF and the Army.

> "It's a bit like a Swiss army knife, and the footprint is very small. The propellers inside the ducts support collective and monocyclic pitch and so it's very compact."

"The aircraft is being designed to take off vertically and then use tilt ducts [for cruise flight] and offer multiple payload modules for roles such as cargo and casualty evacuation," explained Piasecki. "It's a bit like a Swiss army knife, and the footprint is very small. The propellers inside the ducts support collective and monocyclic pitch and so it's very compact."

Last year, PiAC acquired Lockheed Martin's Sikorsky Heliplex facility in Coatesville, Pennsylvania, to establish a research and development hub for VTOL aircraft and uncrewed aerial systems, including the PA-890. The 219,000-sq-ft site previously served as the production and delivery center for Sikorsky's S-76 and S-92 helicopters.

PiAC was founded in 1955 by rotorcraft pioneer Frank Piasecki, whose earlier Piasekci Helicopter company had developed the PV-2 model in 1943 before this venture was sold to Boeing, which renamed it Vertol. To support its new programs and anticipated growth, PiAC is now looking to double in size, leading it to launch a recruitment drive for a mix of young and more experienced engineers.

Diamond DA50 RG

BY MATT THURBER

The diesel-powered Diamond single packs a lot of performance into a sleek-looking package

At first glance, the Diamond DA50 RG might not seem to add much to the ranks of high-performance piston-powered single-engine airplanes. It isn't especially fast, doesn't carry a huge load, and it is expensive, with a price tag well over $1 million. Diamond Aircraft, however, isn't about ordinary, and its airplanes have all carved a niche in the general aviation marketplace.

The DA50 RG is no exception, especially because it carries on Diamond's penchant for putting jet-A-burning diesel engines into light airplanes.

What makes the DA50 RG stand out are some unique attributes, but for me, it starts when I walk up to the airplane and see just how large it is. In the world of high performance, single-engine airplanes, only turboprops look larger than the DA50 RG; this is a robust, serious airplane, and it looks professional. Of course, all aircraft require a professional approach, but the DA50 RG practically screams: "Hey, we're not fooling around here."

Composite construction is supposed to allow designers to create strong airplanes at lighter weights. In every case where composites are used for major structures, they've always looked to me to be far less flimsy than the thin aluminum skins that enfold a monocoque structure. The DA50 RG's composite airframe is almost intimidating in its appearance of strength and stability. The fit and finish are outstanding and make me feel like Diamond has this method of manufacturing down to a science. Of course, with a list price of $1,150,000, one would expect a high level of fit and finish.

DIESEL POWER

No lightweight airplane, the DA50 RG's 4,407-pound maximum takeoff weight (mtow) begs for a healthy amount of horsepower, and for this application, Diamond turned to Continental Motors for the first certified application of its Centurion 3.0 CD-300 diesel engine. What would have been a finicky avgas-burning piston engine running at high-power settings

is instead an electronically controlled, twin-turbocharged, 300-hp, 182 cu-in displacement diesel engine that barely seems to be working hard, even at full power.

It's easy to see the difference. On takeoff, a 300-plus-horsepower turbocharged piston engine that displaces almost three times more than the CD-300 will burn about 36 gph and make lots of noise doing so to deliver maximum power. The CD-300 on takeoff burns fewer than 20 gph.

Potential buyers of the DA50 RG inevitably will compare it to other million-dollar-plus piston singles, which include the new Cirrus SR22 G7 (the turbocharged version is the most expensive) and the Beechcraft G36. Both the DA50 RG and G36 lack the Cirrus whole-airplane parachute system, and that may be a dealbreaker for some buyers.

An important number for this class of aircraft is the payload that can be carried with a full fuel load. The DA50 RG is a relatively heavy airplane. The G36 tops out at 3,805 pounds, while the Cirrus SR22T mtow is 3,600 pounds. The SR22T's payload with maximum fuel is nearly 700 pounds, not as much as the 769 pounds that the G36 can carry.

The DA50 RG's higher mtow gives it the advantage here, and it has a maximum fuel payload of 884 pounds, which provides more flexibility for filling its five seats. It's not just the mtow difference that helps the DA50 RG carry more but the amount of fuel each airplane needs to carry; the diesel engine's lower fuel consumption means the DA50 RG can meet performance targets with less fuel, just 49 gallons usable, although jet fuel weighs more than avgas.

Range of the three airplanes is as follows: DA50 RG, 820 nm; SR22T, 1,021 nm; and G36 920 nm.

The G36 is the only one of the three that has a large enough cabin for six individual seats, and its rear cabin is configured as a double-club layout, with a generous door opening into the rear cabin. The SR22 can also seat five, although its cabin isn't as wide as the DA50 RG's, at 49 inches versus 50.8 inches. It's a little easier to get into the back seat of the DA50 RG with a third door aft of the pilot's door on the left side. The doors hinge upwards so getting in and out isn't awkward.

These modern airplanes are a big step up from what used to be rather utilitarian interiors decades ago, and that probably helps push their prices up. But that's what today's buyers have come to expect, comfortable furnishings akin to luxury cars, not cheesy plastic and seat fabrics that aren't designed to last.

STICK FLYING

Inside, the DA50 RG instantly signals that this is an airplane designed to delight pilots; instead of a yoke for controls, it has a stick. Nothing new here for experienced Diamond pilots, but it is a pleasure to see a manufacturer that understands pilots. However, when flying from the traditional left seat, keep in mind that the pilot flies with the left hand on the stick and the right hand on the throttle. This may be slightly discombobulating for a pilot used to flying a stick with the right hand and throttle with the left hand, but it took no time to get comfortable with this setup. The right stick can be removed, and that is an optional feature ($8,425).

The panel is utilitarian, filled with Garmin G1000 NXi displays, Mid-Continent's MD302 Standby Attitude Module, and just a handful of switches, including a blue level button for the GFC 700 autopilot. The NXi displays have all the normal Garmin buttons for those who prefer that interface, but Diamond engineers added an optional GCU 476 keypad in an unusual place, mounted upside down in the center console. When stowed, the keypad fits flush to make a nice armrest, then flipping

it over pulls out the keypad and FMS controls in a place that comes easily to hand. The keypad must be stowed during takeoff and landing and during emergencies. One feature some pilots might not like is the alphanumeric keyboard. It's a hardware keyboard, so there is no way to switch to a QWERTY keyboard, and that ought to be an option for those whose brains are wired to typewriter keyboards. The keypad FMS option costs $27,250.

Just forward of the center armrest is the single power control; unlike the avgas piston engines in the SR22 and G36, the DA50 RG's Continental CD-300 diesel engine has a fully automatic digital engine control (fadec), something that has been long overdue in general aviation airplanes and that makes flying so much simpler.

The seats are fixed in place but the rudder pedals are electrically adjustable. This must be done on the ground, however, and isn't permitted in the air. Like the SR22, the center seat in the back row isn't designed for a full-size adult. But with two adults, the rear offers plenty of comfortable space.

Seats and upholstery elements are finished with real leather, and modern composite inlays accentuate the interior trim. All seats have USB power outlets and both standard dual headset jacks and powered Lemo headset adapters. The rear seats can be folded down to create more baggage space, plus there are storage compartments under the baggage-area floor.

Some other optional features on the DA50 RG are an oxygen system with outlets for each seat (31 pounds and $42,200), TKS weeping wing de-icing (55 pounds and $117,800), and electric-powered air-conditioning (53 pounds and $57,350).

FLYING THE DA50 RG

Once settled into the front left seat and with the rudder pedals adjusted, I felt immediately comfortable. Sam Linton, national sales director for Diamond distributor Lifestyle Aviation, was the demo pilot for the DA50 RG tour around the U.S., and our flight at Oregon's Portland International Airport (PDX) was one of his final stops.

It was an unusually gusty day in Portland with a low layer of scattered clouds. Starting the CD-300 engine is simple: just push the start button. No monkeying with mixture and throttle controls as on an avgas engine, no matter the outside temperature. The engine settled into a smooth rumble, and Linton said to run it at 1100 rpm while it warmed up.

We completed the runup on the Atlantic Aviation ramp so as not to clog up the taxiways. Engine checks require pushing the fadec test button and verifying proper operation of each engine control unit (ECU), then pushing the Force B button to test a single system as a backup and making sure the engine operates the same.

The DA50 RG has a free-castering nosewheel, a simpler design than a steerable nosewheel. Turns with the brakes are easy but it is necessary to get some forward speed before turning. The DA50 RG has a large rudder, Linton said, and on straightaways and shallow turns, the rudder is strong enough to steer without using the brakes.

The fuel selector mounted on the center console behind the trim wheel is set to the normal position, which draws fuel from the left fuel tank. The right tank's fuel is transferred to the left during normal operation, and the maximum difference is 9 gallons. Fuel transfer rate is 60 gph, and it automatically stops if the pilot forgets to turn off the transfer switch. Although, it will switch on as the left tank's quantity drops. The selector also can be switched to the right tank if necessary. Total fuel capacity is 51.5 gallons, with 49 usable.

Entry into the front or back is easy with the upward-hinged doors.

The optional FMS keypad (center) folds down to create an armrest.

The electrical system is essential for running the ECUs and various systems, and there are two belt-driven 70-amp alternators. In normal operation, alternator 1 runs most systems while alternator 2 runs the air-conditioning system. Each alternator has its own backup lead-acid batteries to provide field current if the main battery should fail. The 24-volt, 13.6 amp-hour, lead-acid main battery is the backup if both alternators fail. The Mid-Continent MD302, which has its own backup battery, provides standby instrumentation.

With just one power lever to operate the engine, the engine indication system provides power information as a percentage of load. The liquid-cooled CD-300 is a four-stroke diesel with twin turbochargers and intercoolers. The three-blade MT Propeller's rpm is reduced via a gearbox with a 1.67 gear reduction ratio. Dual fadec ECUs control fuel injection, engine rpm, and propeller pitch.

For the pilot, engine gauges include the percentage of load, prop rpm, oil temperature, oil and fuel pressure, and volts and amps. For pilots new to diesel flying, there are also indicators for coolant and gearbox temperature and fuel temperature.

"Jet-A has a tendency of gelling at high altitude," Linton explained. "But we don't have that issue because we have a high-pressure fuel system that basically superheats the fuel."

Elevator trim is set for takeoff according to a mark on the manual trim wheel. Linton suggested trimming aft a little as we had no weight in back. Rudder trim is accomplished with a switch on the throttle quadrant; electric rudder trim is new for the DA50 RG. The DA42 and DA62 have manual rudder trim using a knob.

After checking the front doors and the rear door were closed, we tested the landing gear and stall warning system and then opened the cowl flaps for takeoff.

I taxied to PDX's Runway 10R, and using Garmin's SafeTaxi depiction on the G1000 NXi MFD helped with orientation on the airport. Before takeoff, Linton explained that I should take 3 seconds to advance the power. The flight manual cautions pilots to advance power slowly, to avoid over-speeding and excessively rapid rpm changes of the wood-cored MT propeller.

Pilots new to diesel engines need to monitor coolant and gearbox temperatures in addition to the standard engine indications.

Lining up with the runway, we checked that the fuel pump and lights were on and cowl flaps open with the flight director set for takeoff at 6 degrees pitch up. I advanced the power while counting to three, then as we accelerated—which didn't feel much different than an avgas-powered high-performance single—rotated below 70 knots and climbed out at the 79-knot Vy speed. Once the gear and flaps were up, climb speed went up to 94 knots.

The engine is limited to 100 percent power for 5 minutes, and during the climb, we were burning just 17 gph. After a few minutes, I pulled the power back to 90 percent as I steered around some of the scattered clouds and flew to the north then leveled off at 3,500 feet. Linton told me that using pitch trim helps when flying the DA50 RG, and he was right. I like using manual trim and appreciate that it's available in addition to the electric trim switch on the stick.

Flying with my left hand on the stick proved to feel natural, and I didn't experience any hunting for the stick with my right hand.

Once level at 3,500 feet, we closed the cowl flaps and kept the power at 90 percent, with fuel burn at 15.3 gph. True airspeed settled at 156 knots. Linton said that at the optimum altitudes of 8,000 to 12,000 feet, true airspeed would be 170 to 175 ktas while developing less power.

The flight manual shows that cruise performance in ISA conditions at 12,000 feet delivers 172 ktas at 86 percent power (14.7 gph). The same speed is available at 14,000 feet but with 82 percent power and 14.3 gph. Speeds remain in that range or slightly below through 16,000 feet and then start dropping to 158 ktas and 60 percent power (11 gph) as the airplane nears its maximum operating altitude of 20,000 feet.

For comparison, a Cirrus SR22T, which has fixed landing gear, at 12,000 feet can fly at 187 ktas burning 18.3 gph at 85 percent power. At about the same fuel burn as the DA50 RG at that altitude, the SR22T would be running at 65 percent power and 167 ktas.

Linton pulled the power back and demonstrated how the Diamond just loafs along with power set at 50 to 60 percent. "What I love about this airplane is it totally depends on how much power I want to put to it," he said. "She'll maintain altitude way down here in the 50s. That's 10 gph at 60 percent power. It just hangs out here no big deal, super smooth, super calm."

HANDS-OFF TURNS

I played a bit, maneuvering around and getting the feel for the controls. The DA50 RG is well-harmonized, and pitch and bank

work smoothly together to give the pilot precise control. Linton had me set up a steep turn, dial in some trim, and then let go of the controls. It stayed perfectly solid in the turn. "One of the fun things about the DA50 is it's a very maneuverable platform with the pushrod [aileron and elevator controls]," he said.

Turning away from some clouds, I pulled back the power for some slow flight, and we put the gear down and selected takeoff flaps. Flying between 75 and 80 knots, control was still solid, and full aileron deflection didn't cause any upset.

"If you're tired, not paying attention, or you get slow, this airplane's not going to magically bite you some way. It's just very well balanced," said Linton.

We did some more turns, then retracted the flaps and landing gear and climbed to 4,500 feet for a power-off stall demonstration.

After some clearing turns and with the landing gear and flaps down again, I pitched the nose up past the stall warning horn and held the stick all the way back. The airplane just descended, wings level, with no tendency for the nose to drop. "It's not going to surprise you and drop a wing," he said. "It's very relaxed." Once I let the stick move forward and added power, the stall was quickly over with.

Before we returned to the airport, he pulled back the power to below 20 percent, and because the landing gear was retracted, we heard an audible beeping, saw a "check gear" CAS message, and then heard a vocal alert saying "check gear."

Linton briefly demonstrated an accelerated descent, although we didn't have much altitude to lose on the way back to PDX. "Everything is all fadec controlled, and we're not worried about temperatures," he said.

The landing gear, he explained, "is basically a gigantic speed brake." With the gear down and full flaps, he had me point the nose down fairly steeply, which allowed us to descend without picking up much speed. "We're barely at 100 knots. It's just a very relaxed descent."

The DA50 RG looks at home parked on ramps next to business jets.

Linton loaded a visual approach into the Garmin avionics to help ensure alignment with the correct runway, in this case, PDX's 10L. We were instructed by the Portland Tower controller to keep our speed up for a Phenom jet on base leg, which was easy, not only by adding power and flying faster but then slowing quickly as we neared the runway.

"The cool thing about this airplane is we can slow this down like crazy," he said. Vref ranges from 73 to 77 knots, depending on weight, but we kept it a little high because of the gusty conditions.

The winds were 90 degrees across the runway and gusting from 12 to 23 knots, so Linton helped me with the landing. The DA50 RG took it in stride and settled smoothly on the trailing link landing gear. "For a gusty crosswind she didn't do too bad," he said.

Diamond recommends keeping the engine at ground idle for two minutes to cool down the turbochargers, which was pretty much the time it took to taxi from the runway to the Atlantic Aviation ramp. Shutting down the engine is as simple as turning off the engine master switch, then when the engine ceases running, turning off the electric master switch.

A NEW MARKET?

Will the DA50 RG make inroads on the most popular modern single-engine piston airplane, the Cirrus SR22? It's too early to tell, but one factor could make a difference: the DA50 RG's diesel engine.

What could make the DA50 RG stand out is if its diesel engine proves to be more reliable than high-performance and non-fadec piston engines, which do have the occasional engine failure.

A more reliable engine could eliminate some of the reasons why a pilot might elect to pull the parachute handle. And the widespread availability of jet fuel compared with confusion surrounding the switch to a high-octane unleaded avgas and the lack of advanced engine controls on avgas engines could make the DA50 RG more attractive.

The diesel engine has another advantage: complaints on pilot forums by SR22 pilots about how difficult their avgas engines are to start in hot weather continue.

But the DA50 RG's electronically controlled engine doesn't have that problem.

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LEONARDO

VR simulators fly into helicopter training

BY MATT THURBER

@ Heli-Expo 2024

At the Vertical Aviation International Heli-Expo show in February, helicopter flight simulators that use virtual reality (VR) glasses to replace bulky and expensive visual displays seemed to be all over the place. The two newest devices, Leonardo's VxR (AW119) and TRU Simulation's Veris Bell 505, were in use every day of the show, as was Loft Dynamics' H125 VR simulator and a setup in the Rotor Safety Zone with two Precision Flight Controls VR simulators on Ryan Aerospace motion bases.

I'd flown the Loft H125 at last year's show, and this year with a fresh commercial rotorcraft add-on rating in hand, I tried out both the VxR and the 505. Each uses Varjo XR-3 mixed-reality glasses, which include hand-tracking that allows the user to interact with controls, avionics, and systems knobs, buttons, and switches in the cockpit and provides a high-resolution view of the outside world. The glasses replace large fixed visual systems, which take up a lot of space and are expensive to build.

Leonardo simulator engineer Ermes Marcigaglia ran the VxR AW119 simulator at Heli-Expo.

LEONARDO VXR

I flew the VxR first and, once strapped into the seat, I placed the Varjo glasses on my head and adjusted them for a firm fit. After Leonardo simulator engineer Ermes Marcigaglia ran some calibration tests, I could see the outside view perfectly matched with the simulated AW119's windows and interior. The cool thing about VR glasses is that the user can look in any direction and see what would be viewable in real life. This gives a better visual experience than full-flight simulators, which are limited to the field of view available on their fixed visual displays. I could turn and look in the back and see the cabin of the simulated helicopter, for example, or look to either side to ensure tail rotor clearance.

Marcigaglia started the helicopter in cruise flight at about 1,000 feet over Baltimore and gave me control. Then he switched on the six degrees of freedom (6-DOF) motion base. I flew around to get a feel for the controls and noted that the simulator, which is designed to replicate the AW119 fairly precisely, is heavy on the controls. These VR simulators include electric control loading, which allows them to mimic the control feel of a real helicopter.

Leonardo has been working on this device since August 2022. Heli-Expo was the first time it was shown publicly, according to Paolo Petrosso, Leonardo v-p of simulation and training services.

I flew toward downtown Baltimore, then slowed and descended and tried flying around a tall smokestack while keeping the nose pointed at the stack. The visuals were top-notch, and it felt as if I was able to get the helicopter to respond to my commands without much trouble. It probably helped that the AW119's controls are heavy, as I would soon find out, compared with those on the 505.

I turned toward a nearby hospital helipad on top of a building, and Marcigaglia switched to a nighttime scene so it would be easier to see the pad. Dredging up memories of the night landings I had done at the downtown Portland, Oregon, helipad on top of a six-story building, I tried to ease the simulated helicopter into the lighted landing spot. I was too fast on the first attempt so I turned around for a second try, and here is where I experienced a drawback of these simulators.

Although I was able to slow the helicopter to a more sedate pace and land on the pad without crashing, I was missing the

proprioceptive cues that come with flying a real helicopter. A perfect approach, without obstacles, looks like a smooth descent at not too steep or shallow an angle and involves decelerating consistently until arriving at a hover just above the landing spot. It takes hours of practice to perfect this, and until I flew these simulators, I didn't realize the important role that feel plays. In the simulators, I just couldn't get that oh-so-sweet, on-the-rails-but-slowing-down feeling I experienced in the helicopter, so I had to rely more on visual perception and what the instruments were telling me.

Having never done a full-down autorotation on my own, I tried one in the VxR. Marcigaglia repositioned the VxR over Martin State Airport at about 1,000 feet, and I lowered the collective and entered the autorotation. I got a little slower than the recommended 80 knots, but the descent was fairly smooth. Here again, I had trouble judging height, although Marcigaglia helpfully called out my altitude so I knew when to begin raising the nose, and then leveling off. I was a bit too high when I started pulling the collective, however, so I ended up crashing onto the runway.

After resetting the simulator, I lifted off again, then landed on a helipad—still a rough landing but everyone aboard the simulated helicopter survived.

More than 40 pilots flew the VxR at Heli-Expo, according to Leonardo's head of flight training, Roberto Bianchini, and most were AW109 and AW119 pilots. "They were very happy," he said. "They think this is the future."

TRU BELL 505

TRU's Bell 505 also features 6-DOF motion and electric control loading, which is a TRU specialty. The 505 simulator will be located at the Bell Training Academy in Fort Worth, Texas. "It enhances training and real-world scenarios," said Tim Otteson, an academy instructor who helped me with the demo. VR simulation allows pilots to practice emergencies and operations like vertical reference maneuvers and complex slope landings without the risk involved in the real helicopter.

Although Bell Academy instructors take pride in doing full-down autorotations and emergency practice in real helicopters, he said, "We're limited in what we can do." No one does actual engine or tail rotor failures in the real helicopter because it isn't safe or possible in the case of the tail rotor. "But we can do those in this device," he said, "with a level of fidelity that traditionally you don't get in an FTD [flight training device]."

For my flight in the 505 simulator, Otteson set me up at the Downtown Manhattan Heliport in New York City. I lifted off and tried to hover but had a little trouble keeping the lighter 505 right where I wanted it, so I pulled up on the collective, lowered the nose, and took off toward the Brooklyn Bridge then over the city and south toward the Statue of Liberty.

I descended to 400 feet and did some right circles around the statue, which was rendered in striking detail, thanks to Blackshark.ai's "hyperrealistic 3D environments" technology, which powers Microsoft FlightSim. From there I flew northeast toward Governors Island, where the simulation features a sloped ramp with a square landing pad at the top.

I wanted to see whether I could land the 505 on the slope. I approached it head-on to see if I could make a straight-in slope landing, something I'd never done. After some back and forth, I managed to get the helicopter down in one piece.

Then I moved back and tried landing on the square pad at the top. Again, I had trouble judging my rate of closure with the spot and had to try a couple of times before finally crashing into the prominence.

I flew back to the Blackshark-rendered Downtown Heliport to try landing and hovering. Although I messed up the first landing attempt by hitting the tailboom (yes, I felt it, which is a tribute to the motion base), I finally got more comfortable and was able to hover taxi around the heliport relatively smoothly and land and takeoff with a little more precision.

The author tested TRU's Veris Bell 505 VR simulator during the Heli-Expo show.

BY GREGORY POLEK

C&L Aerospace Opens Wichita Aircraft Parts Warehouse

Bangor, Maine-based C&L Aerospace has opened an 8,500-sq-ft parts warehouse in Wichita, giving it space to store avionics and parts inventories for Cessna Citation XLS and Sovereign, Beechjet, Hawker, Bombardier Challenger, and Embraer ERJ 135/145 and E170/190 aircraft.

The move is part of a larger expansion plan to position aircraft parts closer to C&L's worldwide customer base. C&L also plans to open two additional warehouse facilities around the globe in the second quarter.

"The new warehouse is strategically located, allowing us to better support our customers in the Midwest and West Coast," said Chris Kilgour, CEO of C&L Aviation Group. "Inventories kept here are critical rotables and components needed on a short-term notice. It will also allow for more favorable shipping times and rates for our customers on the west side of the country."

Davinci Jets Installs SmartSky Lite on a King Air 350

SmartSky's sales and installation partner Davinci Jets Services has completed a first-article installation of the SmartSky Lite system on a Beechcraft King Air 350. The expected supplemental type certification will qualify 18 additional King Air models for SmartSky installations, representing nearly 2,000 in-service tails.

The project marks the third SmartSky STC installation by Davinci Jets Services, a full-service MRO operated by North Carolina-based aircraft management firm Davinci Jets. Davinci recently completed first-of-type installations of a SmartSky Flagship system on a Cessna Citation Latitude and SmartSky Lite on a Pilatus PC-12. It also has begun work on installing a SmartSky Lite system on a first-of-type Citation CJ4.

"An increasing number of our customers are asking for SmartSky, because of the unmatched capability of its connectivity that users describe as 'game-changing,'" said Davinci Jets CEO Eric Legvold. "What's different and so much easier about SmartSky is there is no pre-set limit to the number of devices connected, unlike the legacy air-to-ground systems. We can have watches, cell phones, and computers connected as if you were in your office. Plus, customers can use their cellphones to make calls without any special app and stream on any device, all without paying additional fees or subscriptions."

Hartzell Propeller Service Center Doubles Warranty Coverage Length

Hartzell Propeller Service Center has doubled its warranty coverage to two years or 2,000 flight hours while increasing its propeller exchange inventory to cover a wider range of aircraft.

The Hartzell Service Center's doubling of the warranty term on work performed at the FAA-certified repair station in Piqua, Ohio, reflects what it calls its commitment to quality, performance, and support.

"These improvements at the Hartzell Service Center give our customers extended warranty protection and additional inventory, leading to less flight downtime," said Hartzell Service Center director Scott Foster. "We continually look for ways to add convenience and value for aircraft owners and operators."

As the Hartzell factory-owned repair station for the overhaul and repair of Hartzell propellers and governors, the Hartzell Service Center offers a "sizeable" propeller exchange inventory supporting several aircraft. The Hartzell Service Center now offers propeller governor exchanges for customers requiring minimum flight downtimes. Operators also can schedule a governor exchange ahead of scheduled service.

Plane Place Aviation Taps into Surging Demand for Airframe MRO

Only two years into its existence, Cleburne, Texas-based Plane Place Aviation already has carved out a prominent place for itself among more established MRO providers in the Southwest. Having recently added AOG and mobile repair team (MRT) services to its capabilities for Texas and Oklahoma, the company also expanded on-site support at Dallas Love Field while co-owners Tristan Noe and Travis Roberson look for further growth opportunities.

The added services augment Plane Place's maintenance of Bombardier Challenger 300, Hawker, and Cessna Citation airframes, on which the company claims extensive experience supporting large MROs, charter operations, and aircraft management companies.

Noe noted the high volumes of business aviation activity at Dallas Love Field in particular. "We've got a lot of customers up there and sometimes it just doesn't make sense for them to fly their airplane down to Cleburne to get minor maintenance done," he explained. "So, we're trying to provide some support for them up there."

Tapping into an abundance of AOG work in and around Texas, Plane Place took advantage of the dearth of support in Austin and the location of its headquarters just southwest of Dallas Fort Worth International Airport.

Employing 26 mechanics in late February, Plane Place has never stopped hiring since its establishment in 2022. As seems to be the case with most MRO providers, the company has had trouble attracting good-quality, experienced candidates, noted Roberson.

"It's rough," he said. "This year we've tasked ourselves with hiring quality senior technicians. We're emphasizing quality over quantity. And nothing against the [technicians]; they get a job somewhere and either don't want to leave or they don't have to leave because they're being taken care of."

Plane Place co-owner and DOM Tristan Noe replacing a Hawker windshield.

The company needs to hire between five and 10 more mechanics to perform heavy structural inspections, said Noe.

Plane Place's facilities include about 20,000 sq ft of hangar space, not enough to keep up with the increased level of demand Noe sees. "We're working on expanding, whether that means leasing more hangar space or building more hangar space," he remarked. "We're hoping over the next 12 months we'll have another solution for an extra 20,000 square feet."

Plane Place has waited for a year since applying for a Part 145 certificate and now sees the likelihood of it taking another year thanks to bureaucratic delays at the FAA. "We've been very fortunate," said Roberson. "We've been able to keep the hangars full and keep everything moving. But there's still that, 'well, we could have had this one if we had [the Part 145 certificate.]' That's the hard part."

Along with a shortage of qualified mechanics, other constraints include low parts availability due to persistent supply chain kinks. While some shops say they have seen an improvement, Noe didn't mince words about the cost and increased turnaround times. "I definitely think that it's still a huge problem," he said, adding that the Hawkers have suffered most. "The Hawker is having a hard time with parts. We've been able to help out with that; we've got a couple of additional options for serviceable parts. We have a company here on the field that parts out Hawkers."

While the parts problem has contributed to longer turnaround times, Noe noted that the mechanic shortage has played a part as well. Work volumes have skyrocketed, prompting many maintenance shops to ask mechanics to work overtime and on weekends. "The sheer volume that everybody's going through is tremendous," commented Noe.

Meanwhile, costs overall have increased precipitously, often faster than the rate of inflation. Hangar rent at Love Field, for example, has increased by 40 percent this year, he added.

"Everything about the MRO aspect has gone up," he reported. "The parts are getting more expensive, the cost of living is more expensive, so the mechanics have to make more money, so then the shop rates have to go up, even down to the consumables that we use on the airframe—the greases, the lubricants, the acid brushes, the paint brushes, all that's gone up." **G.P.**

BY DAVID JACK KENNY

Preliminary Reports

Hypoxia Suspected in Loss of Fire Spotter

Twin Commander 695A,
Nov. 4, 2023,
Cloncurry, Queensland, Australia

Earlier anomalies in flight track and pilot communications suggest hypoxia as a possible cause of the crash that claimed the lives of the pilot and two fire spotters. The IFR flight to perform aerial photography of fire zones north of Mount Isa climbed to FL280 after departure from Toowoomba. Twenty minutes later the pilot requested descent to FL150; after six minutes, the pilot requested and was cleared to climb back to FL280.

The pilot acknowledged a frequency change at 12:45:51 but failed to respond to 15 separate transmissions over almost an hour. He did check in on the correct frequency at 13:41 but didn't respond to subsequent transmissions.

A Royal Australian Air Force flight eventually reached the Twin Commander on another frequency, after which contact with ATC was re-established. Four readbacks of the clearance to operate in the vicinity of Mount Gordon suggested confusion on the part of the pilot, whose "rate and volume of speech had substantially lowered from earlier communications and was worsening." A requested frequency change at 14:19 went unanswered, as did eight subsequent attempts to reach the pilot.

By 14:25, the airplane's groundspeed had dropped form 225 to 104 knots as heading and altitude remained steady. It then departed controlled flight, entering a left spin at a descent rate that reached 13,500 fpm.

Oil Pressure Warnings Preceded Emergency Highway Landing

Bombardier Challenger 604,
Feb. 9, 2024, Naples, Florida

Oil pressure warnings preceded the failure of both engines and the fatal crash of the business jet that landed on a highway near Naples Municipal Airport in Florida. The two pilots of the Part 135 flight operated by Ace Aviation Services (doing business as Hop-A-Jet), were killed in the accident. The flight attendant and two passengers escaped with minor injuries.

Flight data recorder information revealed that the first of three master warnings was recorded less than a minute before both engines flamed out: first, "L Engine Oil Pressure," then, "R Engine Oil Pressure," and then, "Engine." The system alerted pilots with the illumination of a "Master Warning" light, a corresponding red message on the crew alerting system, and a triple chime voice advisory, "Engine oil."

Twenty seconds later, at about 1,000 feet msl and 122 knots on a shallow intercept angle for the final approach course, the crew announced, "...lost both engines... emergency...making an emergency landing." The tower controller acknowledged the call and cleared the airplane to land. Seven seconds later, with the aircraft at 900 feet and 115 knots, the crew replied, "We are cleared to land but we are not going to make the runway... ah...we have lost both engines."

Dashcam video submitted to the NTSB that captured the final second of the flight-showed the airplane descending in a shallow left turn and then the wings leveling before it touched down aligned with traffic traveling in the southbound lanes of Interstate 75. The left main landing gear touched down first in the center of the three lanes followed by the right main landing gear in the right lane.

The airplane continued through the breakdown lane and into a grass-shoulder area before running into a concrete sound barrier, coming to rest about 1,000 feet past the initial touchdown point, upright in the grass area, opposite the direction of vehicle travel. Both engine throttle levers were found near the IDLE stop position

After the Challenger came to rest, the cabin attendant said she found the cabin and emergency exits blocked by fire. She then coordinated a successful egress through the baggage compartment door in the tail section of the aircraft.

The airplane, N823KD, was returning to Naples from Ohio State University Airport in Columbus, Ohio, where it had flown earlier in the day. It received 2,345 pounds (350 gallons) of fuel before departing.

The 2004 model aircraft's most recent continuous airworthiness inspection was completed on January 5 at 9,763 total hours of operation. NTSB said a visual examination of the main fuel control and main fuel pump revealed no anomalies and the oil filter appeared in good condition with no particles seen within the pleats. The main fuel inlet port exhibited a small, yellow-colored debris particle.

Six Killed in Helicopter Charter

Airbus EC130B4,
Feb. 9, 2024, Halloran Springs, California

A charter flight from Palm Springs, California to Boulder City, Nevada crashed in a remote California desert, killing all six on board. The VFR flight departed at 20:45 and tracked Interstate Highways 10, 215, and 15, descending to 3,500 feet msl—150 feet agl—near Barstow, California. The last ADS-B

track points showed gradually decreasing altitude and increasing groundspeed. The wreckage was found at an elevation of 3,360 feet. Witnesses who reported a "fireball" described weather conditions as mixed rain and snow.

Final Reports

LTE Cited in Fatal Police Crash

MD Helicopters MD500N, Feb. 19, 2022, Newport Beach, California

While focused on conditions on the ground, the pilot allowed the helicopter's airspeed to decay during a low-speed, low-altitude right orbit. Corrective inputs failed to arrest an uncommanded right yaw and the aircraft spun into the harbor, coming to rest on the seabed. The pilot escaped with minor injuries but the tactical flight officer (TFO) drowned while trying to extricate himself from the cabin. Both had received underwater egress training.

The accident occurred about 30 minutes into a routine night patrol by the Huntington Beach Police Department. As they departed Newport Beach, a radio transmission advised of a fight just south of their location. The pilot began orbiting the scene at 500-600 feet while the TFO scanned the ground with the infrared camera. The pilot tightened the orbit and slowed the helicopter as ground officers arrived.

He responded to a sudden, aggressive right yaw with full left pedal and forward cyclic, but without effect. The turn tightened into a spinning descent; control inputs appeared partially effective, but without a visible horizon the pilot was unable to gauge his altitude. He chose not to enter autorotation because the area was heavily populated.

The helicopter hit the water hard on the TFO's side of the cabin, shattering the canopy, and settled on its right side. To escape, the TFO had to make his way through the submerged cabin. His body was found partway out of the left door's window, and his autopsy suggested he'd survived the impact without serious injury.

Though the pilot recalled only slowing the craft to 50 knots airspeed, flight track data indicated that it had essentially entered a hover, drifting sideways for the last 30 seconds before the sudden yaw.

The NTSB noted that "tight-radius, uncoordinated turns in a high-power and low-airspeed regime" increase susceptibility to loss of tail rotor effectiveness and suggested that the pilot's attention to the scene on the ground may have compromised his awareness of flight conditions. Fatigue was also cited as a possible factor, as the pilot's day had begun at 04:00 in order to catch commercial flights home from a trip out of state.

Programming Confusion Precipitated Fatal Stall

Pilatus PC-12/47E, Feb. 13, 2022, Beaufort, North Carolina

The 67-year-old commercial pilot's decision to take off after failing to enter a flight plan into the airplane's integrated flight management system left him struggling to program the system throughout the 28-minute flight, distracting him from monitoring its attitude as it pitched up, slowed, and eventually stalled. All eight on board were killed when the single-engine turboprop crashed into the ocean some three miles offshore as the pilot attempted to navigate to the initial approach fix for the GPS approach to Runway 26 of Michael J. Smith Field (KMRH) in Beaufort, N.C.

The voice channel of the lightweight data recorder captured the pilot trying to teach a student pilot in the right front seat how to enter a flight plan, eventually saying, "We'll get it later." Power was advanced for takeoff at 13:34 and the Pilatus climbed on autopilot to the selected altitude of 3,500 feet, entering a 2,100-foot overcast layer without an IFR clearance. Several minutes passed before the pilot contacted air traffic control requesting both VFR flight following and an IFR clearance to KMRH. Four minutes after the controller warned that Restricted Area R-5306A was active and the pilot promised to remain clear to its east, the Pilatus penetrated the restricted airspace. Multiple calls from the controller went unanswered as the pilot and passenger continued trying to program the flight management system, so the controller told the military aircraft operating there to remain above 4,000 feet.

The CVR recorded the pilot's frustration with programming the avionics throughout the flight. After being cleared to cross the CIGOR initial approach fix at or above 1,900 feet, the airplane descended to 1,700. Engine torque was reduced and airspeed decayed as the pitch attitude gradually increased, reaching 10 degrees nose-high at 109 knots at 13:59.

Fourteen seconds later the stall alert and stick shaker activated, the autopilot disconnected, and engine power increased to nearly full. The pilot continued to discuss the avionics as airspeed diminished to 93 and then 83 knots and pitch increased to 31.7 degrees nose-up and the stick pusher activated. The controller radioed the Pilatus without response as it climbed to 4,700 feet at 14:01. The recording ended less than a minute later and showed that the aircraft rolled right beyond 90 degrees and pitched 50 degrees nose-down in its final descent.

Compliance Countdown

BY GORDON GILBERT

JUST AROUND THE CORNER

April 8, 2024

U.S.: Falsified Information

The FAA proposes to amend, restructure, and consolidate the regulations that prohibit providing false information to the agency and the sanctions that can be taken for submitting falsifications. Presently these regulations are located throughout different FAR parts. This proposal would harmonize inconsistencies among the various falsification regulations and associated sanctions; consolidate all existing falsification regulations into a general rule (new Part 402) that standardizes the existing falsification regulations; and ensure that falsification-related conduct not addressed by pertinent current regulations would be covered under Part 402. Comments on the proposal are due by April 8, 2024.

NEW April 16, 2024 and Jan. 1, 2028

U.S.: Fuel Efficiency Certification

Effective April 16, 2024, FAA adopted fuel efficiency certification standards that implement new EPA-determined greenhouse gas emission levels that are required for subsonic jet airplanes with a mtow greater than 12,566 pounds and turboprop airplanes with a mtow greater than 19,000 pounds. An airplane is subject to these certification requirements: (1) at new (original) type certification; (2) upon manufacture of any covered airplane after Jan. 1, 2028; or (3) when a modification to a covered airplane meets change criteria specified in the regulations.

April 24, 2024;
Oct. 24, 2024; April 25, 2025

U.S.: Airport SMS

Certain air carrier airports certified under FAR Part 139 will be required to submit an implementation plan for a safety management system (SMS) on the following deadlines: April 24, 2024, for airports designated as hubs; Oct. 24, 2024, for airports with 100,000 or more annual operations over the previous three years; and April 25, 2025, for airports classified as port of entry, landing rights, user fee, and international facilities. The SMS must be implemented within 12 months of receiving FAA approval of the implementation plan.

NEW May 22, 2024

U.K.: Nighttime Noise Restrictions

Final comments are due May 22, 2024 on a UK government proposal to consider more stringent nighttime noise reduction options at Heathrow, Gatwick, and Stansted airports. The current policy expires in October 2025. The government is scheduled to announce a decision on the next flight regime at the designated airports by late July 2024 and provide a bridging night flight operational limits of three years that will cover October 2025 to October 2028.

Sept. 9, 2024

U.S.: Pilot Records Database

Final compliance date is Sept. 9, 2024, for reporting historical records concerning training, alcohol testing, qualification, proficiency, and disciplinary action records that date before Jan. 1, 2015, to the FAA's new pilot records database (PRD). Also beginning on Sept. 9, 2024, the Pilot Records Improvement Act (PRIA) ceases to be effective and will not be an available alternative to PRD. Also after this date, each entity that holds an operating certificate under Part 121, 125, or 135—or management specifications for Part 91K—must report to the PRD all historical records kept in accordance with PRIA dating from Aug. 1, 2010, until June 10, 2022. Since June 2023, certain operators under Part 91, 91K, and 135 were required to complete submissions to the PRD of all historical records dating on or after Jan. 1, 2015.

Dec. 1, 2024

NEW

U.S.: Notam Transition

On or about Dec. 1, 2024, the FAA is scheduled to transition its notam format so it aligns with international standards. The agency said shifting to the new format will ensure U.S. notams are compliant with standards set by the International Civil Aviation Organization (ICAO). According to the FAA, the new format will result in improved accuracy and accessibility of notam data for pilots, dispatchers, and other notam consumers; provide notam consumers with one consistent format for domestic and international operations; and allow for enhanced search, sorting, filtering, and archiving capabilities of notam data. An advisory circular will be published when the new format becomes effective.

Dec. 2, 2024

Europe: Part 145 SMS

Starting on Dec. 2, 2022, EASA Part 145 maintenance organizations were required to meet revised regulations that were published in November 2021. However, there is a two-year transition period, to Dec. 2, 2024, to allow maintenance organizations to correct any findings of noncompliance with the new Part-145 requirements. The main change introduced in the regulation is

the required implementation of a SMS. To support the SMS processes, several organization requirements have been changed including the safety policy and internal occurrence reporting.

Jan. 1, 2025

Europe: ELTs

EASA has implemented a two-year postponement requiring certain large airplanes certified in Europe to be equipped with an emergency locator transmitter (ELT) with distress tracking capability: ELT(DT). An ELT(DT) is designed to activate automatically in flight when it detects conditions indicative of a distress situation, or the flight crew can manually activate the ELT(DT). Under the new rules, airplanes with a mtow of more than 27,000 kilograms (above 59,500 pounds) and first issued their CofA on or after Jan. 1, 2024 will be required by Jan. 1, 2025 to be equipped with an ELT(DT) that autonomously transmits information from which the aircraft's position can be determined by the operator at least once every minute when in distress.

Feb. 16, 2025

U.S.: Medical Transport of Veterans

Scheduled to start on Feb. 16, 2025—a year delay—the U.S. Veterans Administration (VA) will have the authority to begin reimbursing non-contract ground and air ambulance transportation at rates "significantly below costs," according to providers. Critics charge that the move will force providers to "downsize operations and reduce hours of availability while compromising the ability of veterans, particularly in rural areas, to receive prompt medical transport." Under the new rules, the VA will be allowed to pay the "lesser of the actual charge or the amount determined by the Medicare Part B Ambulance Fee Schedule." The VA currently pays the actual costs of such medical transports.

For the most current compliance status, see: ainonline.com/compliance

People in Aviation

BY JESSICA REED

DAVID SMITH

David Smith took over as president and CEO of *Robinson Helicopter Company*. Smith joined Robinson last year as v-p of operations after a long career at Bell in engineering, program management, product development, and senior executive positions. He also led the Textron Aviation unit TRU Simulation & Training. Smith succeeds **Kurt Robinson**, who retired from Robinson after more than 40 years with the California helicopter maker founded by his father Frank. Robinson, 66, spent most of his professional career at the company from its inception and took over leadership of the company when the late Frank Robinson retired in 2010.

Private jet services provider *Wheels Up Experience* promoted former chairman of operations **Dave Holtz** to COO. Before joining Wheels Up, Holtz ran the operations and customer center at Delta Air Lines. Also at Wheels Up, **Rob Hamilton** was appointed as the new senior v-p of operations, **Pat Busscher** as senior v-p of management, **Patrick Burns** as senior v-p of flight operations, **Todd Wesoloskie** as v-p of flight operations, and **Al Mann** as v-p of safety, security, and compliance.

Danny Maldonado, former president and CEO of Textron Financial, is taking on the role of chief commercial officer at *Bell Textron*. Previously, he was the executive v-p of sales and marketing at Bell.

DREW MCEWEN

French aircraft manufacturer *Aura Aero* appointed **Drew McEwen** as its chief commercial officer. McEwen brings more than 35 years of experience at Piper Aircraft and Beechcraft.

Rick Rodriguez was promoted to Embraer project manager at *West Star*'s Chattanooga, Tennessee facility. His previous experience includes working for Continental Airlines, Noble Jet, the Colombian Air Force, and Embraer.

Stephanie Kenyon, who served as interim CEO for *Women in Aviation International*, was promoted to COO. Kenyon joined the organization in 2021 as its chief growth officer.

The *Royal Aeronautical Society* has appointed **Paul Ashcroft** as president of its Singapore branch. Ashcroft recently relocated to Singapore from the UK and now serves as senior v-p of Asia-Pacific for aviation asset group *AerFin*. Previously, he held senior technical positions with Rolls-Royce, Cathay Pacific, and GE Aerospace

JON TONKO

Jon Tonko was promoted to chief operating officer at *Banyan Air Service*. He previously led the customer support department and has more than three decades of expertise in business aviation.

Jenny Ann Urban, managing director of air charter and maintenance at the *National Air Transportation Association* (NATA), was appointed as the primary NATA representative on the U.S. Department of Transportation Aerospace Supply Chain Resiliency task force.

JENNIFER PICKEREL

Jennifer Pickerel, v-p of *Aviation Personnel International*, was recently selected for the Bombardier Safety Standdown Advisory Council. Pickerel also serves as chair of Endeavor, NBAA's Diversity, Equity, and Inclusion Working Group.

Duncan Aviation appointed **Mitch Robson** as Southwest regional manager, a role that includes supporting aircraft operators in Utah, Southern Nevada, Arizona, and Southern California. This is Robson's 25th year with the company. Duncan also hired **Colin Kay** for the design team at its Battle Creek, Michigan facility. Kay's previous experience includes working for a range of automotive performance shops where he designed aftermarket performance parts.

TIMON HUBER

Timon Huber, managing director and specialist for *JetAviva's* Embraer sales team, was given additional responsibility as the preowned aircraft sales specialist for Mexico. Huber has more than 36 years of experience working

for Embraer and joined JetAviva a year ago.

MercFuel, a division of Mercury Aviation, hired **Kimberly Ruth** as v-p of business development and supply. She will oversee the company's worldwide aviation fuel sales and supply. Ruth most recently worked for Phillips 66's aviation fuel department for nine years.


KIMBERLY RUTH

Patrick R. Rizzi, who has almost 30 years of experience advising clients across the aviation industry, has joined *Cozen O'Connor's* Transportation & Trade practice as a member. Previously, he was employed at the law firm Hogan Lovells.

Leading Edge Aviation Solutions hired aircraft maintenance professional **Rick Raymond** as v-p of technical services. He brings more than four decades of experience, from the U.S. Marine Corps to a career in business/general aviation.

Stephen Tong was hired as the director of aircraft management sales at *Desert Je*t in Greater Palm Springs, California. Tong's expertise includes aircraft management, operations, acquisitions, and sales.


STEPHEN TONG

Michael Malutinok, who started flying at age 14, just became the youngest type-rated Falcon captain at 19 years old. His father, Kevin Malutinok, owns Strategic Air Services and Magna Air Group in St. Louis.

AWARDS AND HONORS

The *Wichita Aero Club* recognized **Sen. Jerry Moran** (R-Kansas) with the 2023 Wichita Aero Club Trophy during its annual Trophy Gala on February 3. Also during the event, Molly McMillin, editor-in-chief of *The Weekly of Business Aviation* and Wichita Aero Club board member, honored two well-known Wichita journalists who passed away last year, **AIN** senior editor **Jerry Siebenmark** and **Daniel McCoy,** a *Wichita Business Journal* reporter who covered the local aviation beat.

Membership in the Senate Committee on Appropriations and the Committee on Commerce, Science, and Transportation, according to the Wichita Aero Club, "has positioned Sen. Moran to be the leader in aviation and an advocate for this critical industry through a multifaceted lens. He has hosted leaders in Kansas to see firsthand the critical work being done to advance our nation's aviation, space, science, and defense capabilities. Sen. Moran has helped craft legislation to support NASA's Artemis programs, train the next generation of aerospace engineers and scientists, and invest in research and development to make certain Kansas remains the air capital of the world."

The Trophy Gala event raised about $50,000 this year for educational endeavors and Wichita Aero Club initiatives.

FINAL FLIGHT


FERDINAND FRANCOIS

Fernand François, a former chief executive of the *European Business Aviation Association* and publisher of *BART International* magazine, passed away on March 1. After beginning his career as a graphic designer and running an advertising agency, he earned a private pilot's license in 1970 and then spent the best part of five decades focused on aviation. He was instrumental in founding the EBACE trade show that is jointly run with NBAA.

In 1993, EBAA appointed François as its chief executive and he played a leading role in regenerating the trade association. After 12 years in the post, he handed over the reins to Brian Humphries and focused on running his Business Aviation Real Tool (BART) media group, with operations in both Europe and the U.S.

His collaboration with former NBAA president Jack Olcott transformed EBAA's annual meeting from a small annual event held in a Brussels hotel to the large-scale convention now staged in Geneva each May. The first EBACE was held April 18 to 20, 2001, and the upcoming 23rd edition will take place May 28 to 30.

› continued from page 4

Subsequently, 6X deliveries that had been scheduled for 2023 were postponed to this year, Trappier explained.

Dassault warned that certain supplier weaknesses coupled with capacity shortages, mainly for aerostructures, will continue to weigh on its business this year. However, Trappier maintained that "things are improving and internally we're trying to have a better picture of the supply chain in order to anticipate what's going to happen with [distressed] suppliers."

The French OEM has moved to centralized management for aerostructure supplies to implement corrective action. In some cases, it is providing support, including financial, to some of its subcontractors, while also advancing its "Make in India" strategy to move some production.

Dassault Reliance Aerospace Limited (DRAL), the joint venture of Dassault and India's Reliance Aerospace, is already producing the T12 and T4 sections for the Falcon 2000. "The parts are [manufactured] on time [and are] up to our quality standards. They are cheaper than in France. So that's a very positive experience," Trappier commented.

Dassault Aviation is actively involved in the development of the Indian supply chain and plans to sign contracts in early 2024 with several Indian companies, including Dynamatic for T5 tanks for the Falcon 6X and with Aerolloy to develop a titanium foundry branch.

Last year, Dassault collected orders for 23 new Falcons, which was just over a third of the 64 units booked in 2022. "We're selling pretty well in the U.S., not so much in Europe, and maybe this is reflecting some concerns in Europe," Trappier said. "From the economic standpoint, the U.S. market is doing well, there is full employment. But in Europe, some countries are in a recession, some are close to recession, and some have very high debts. This will prompt some stringent budget decisions at the national level for some countries. So this is not an encouraging environment to buy a business aircraft in Europe." ▮

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