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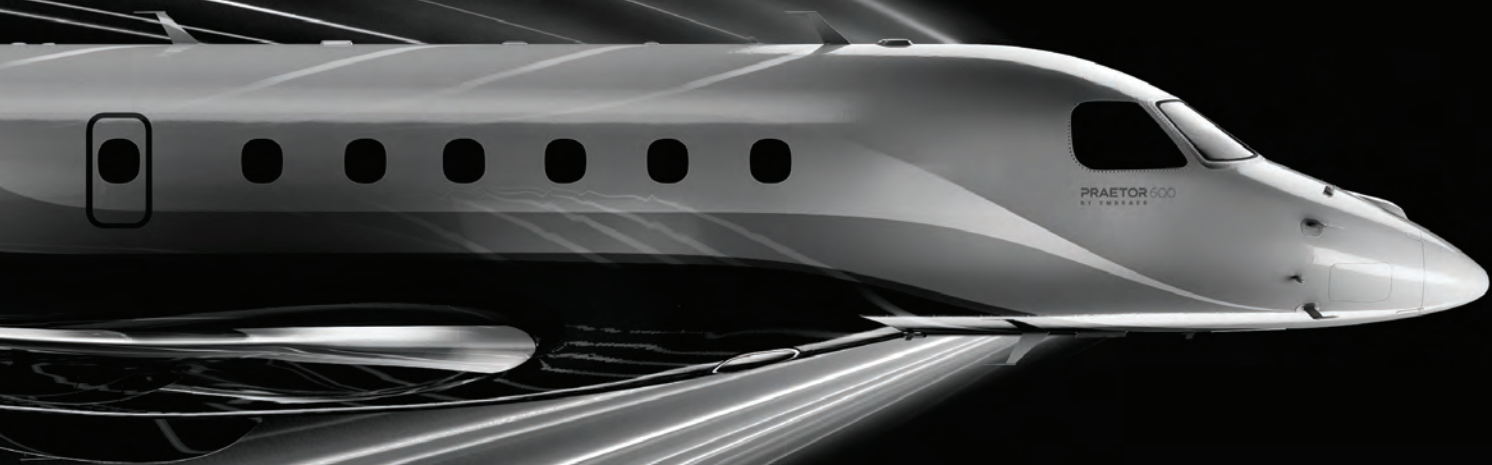


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Nine cabin-worthy wines, 11 quirky roadside attractions, **10 best beach towns**, and much more.

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DESIGN: GREG RZEKOS

BJTONLINE.COM EXCLUSIVE

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- Latest business aviation news



MARK WAGNER

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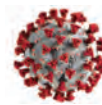
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FLYING IN THE AGE OF COVID-19



A revamped business aviation landscape will affect everyone from occasional charter users to aircraft owners. Here's what you need to know to deal with changes resulting from **the pandemic**. **Page 16**



You have more on your mind than **financing your business jet**.
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Up Front



We typically reserve our covers for luminaries who fly privately—Sir Richard Branson, Suze Orman, Greg Norman, and John Travolta, to name a few. Our editors deliberated for several weeks about breaking that habit for this issue, hoping against hope that the pandemic would somehow dissipate by the time we had to make a firm decision. Unfortunately, it became clear that COVID-19 will be engulfing the world—and affecting business aviation—for some time. A coronavirus cover story became the most appropriate option.

If the pandemic has forced you to consider different ways to fly, you're not alone. Many charter companies are reporting a surge in interest from first-time business jet travelers who figure there has never been a better time to fly privately than now.

Whether you're a beginner or an old pro in the world of bizav, James Wynbrandt's "Flying in the Age of COVID-19" (page 16) will help you navigate the current private aviation landscape. His comprehensive report explains what's changed and what to expect, suggests questions you should ask about disinfection and safety protocols, and provides tips to help you make sure your flight provider is financially sound.



BY CYR

Wynbrandt's byline also precedes another must-read in this issue: "Treating Your 'Get-There-itis'" (page 34). Private flight remains one of the safest ways to travel, but accidents like the Kobe Bryant tragedy inevitably force the bizav industry to evaluate what could be done better.

Wynbrandt's article explores the delicate topic of the passenger/pilot relationship and describes what you can do to make sure that safety is put above all other concerns, including getting to your destination on time.

There's lots more to explore in this issue, including our ninth annual Book of Lists (page 36), our latest collection of opinions, facts, and trivia about travel, restaurants, aviation, and other subjects. And we're already working on our winter edition, which will contain the results of this year's Readers' Choice Survey. Many of you took time out of your busy schedules to complete the poll and provide feedback about **Business Jet Traveler**, which we deeply appreciate.

Jennifer Leach English
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P.S. BJT recently won national and Northeast regional awards in the American Society of Business Publication Editors' 2020 competition for Best Q&A (Jeff Burger's Stevie Van Zandt interview) and Best Regular Contributed Column (James Wynbrandt's Inside Charters). We also took home Northeast regional awards for Best Front Cover (Stevie Van Zandt, photo by Bill Bernstein, design by John Manfredo) and Best Regular Contributed Column (Joe Sharkey's On the Road and Jeff Wieand's Taxes, Laws, and Finance). In addition, in the 2020 Aerospace Media Awards, BJT was a finalist for Best Rotorcraft Submission (Airbus H175 by Mark Huber) and Best Passenger and Crew Wellbeing Submission (Cabin Technology & Furnishings by Amy Laboda).

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The organization classifies disasters into three broad categories: Sudden-Onset such as tornados and hurricanes, Slow-Onset such as famine, and Complex, which includes humanitarian crises resulting from war. The consulting arm of CDP provides organizational, grant-making, and technical guidance to donors and nonprofits. By helping donors, CDP seeks to create "a world where the impact of disasters is minimized by thoughtful, equitable, and responsible recovery for all."

—Jennifer Leach English

BJT readers—who represent one of the highest-net-worth magazine audiences anywhere—clearly have the means to contribute to a better world. To help you do that, we spotlight deserving organizations in every issue. All of them have received a four-star overall rating from Charity Navigator (charitynavigator.com), which evaluates philanthropic institutions based on their finances, accountability, and transparency.



PHOTOS: ANN YUNGMEYER

Sushi and a Soak

If you plan to be among the 10 million visitors to next year's summer Olympics in Tokyo, you might want to consider venturing beyond that city and such other popular Japanese destinations as Kyoto and Osaka. You can escape the urban buzz and find a tranquil retreat in the relatively unexplored Tohoku region of northern Honshu, a two- to four-hour bullet train ride from Tokyo.

The prefectures of Tohoku (Aomori, Akita, Iwate, Miyagi, Fukushima, and Yamagata) offer an authentic look into Japan's culinary and cultural vibe, from exuberant festivals and whimsical rice-field art to historic seafood markets, sake breweries, and whiskey distilleries. The area boasts countless opportunities to enjoy nature, including the celebrated *onsen*—natural hot springs—where you can take a soak and experience a Japanese tradition.

Many Tohoku hotels feature *onsen* in scenic natural settings with recreation nearby, such as hiking, apple and cherry picking, and winter skiing. Accommodations range from traditional inns (known as *ryokans*) with futon bedding and tatami mats to modern hotels with Western-style rooms.

In addition to indoor and outdoor hot springs bathing, most provide sumptuous cuisine, which may include the multi-course, seasonally inspired *kaiseki*. Guests receive slippers and a kimono-style *yukata* robe to wear to the hot springs and meals.

Here are a few of Tohoku's best *onsen* retreats:

Chikusenso. This luxury resort features several bathing pools that are accessed by lovely wooden decks and surrounded by verdant forest in the shadow of Mount Zao.

Hoshino Oirase Keiryu. This all-season resort, located along the picturesque Oirase Gorge, offers guided nature walks and cycling.

Jogakura. This European-style mountain resort, bordered by virgin beech forests, provides access to nearby Oirase Gorge and Lake Towada.

KAI Tsugaru. Surrounded by nature, this boutique *ryokan* features apple-scented baths and lobby folk music on the traditional shamisen guitar.

Matsushima Taikanso. Overlooking Matsushima Bay at one of Japan's most scenic spots, this hotel features folklore-inspired baths and sunrise views.

—Ann Yungmeyer



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Chief Pilot Adam Shelton

Duncan Aviation's Aircraft Sales and Acquisitions team found a Falcon 2000LX for a long-time maintenance customer. The aircraft was owned by a party in Thailand, and the acquisition required a great deal of research, consultation with Duncan Aviation's maintenance experts, and weeks of negotiations.

Ultimately, an agreement was reached. Chief Pilot Adam Shelton was confident in Duncan Aviation's Aircraft Sales Representative Doug Roth's abilities.

"Quite honestly, Doug is a professional," says Adam. "What was unique about Doug, and it probably comes from experience, was his ability to work through the greatest difficulties on this deal."

The new owners decided to make the Falcon 2000LX entirely their own with custom paint, interior, and avionics.

When Adam saw the completed aircraft, he wasn't entirely surprised. "You guys literally touched everything on that airplane that could have been touched—it's basically a new airplane."

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Some like it hot

Instead of downplaying their intense summertime heat, some cities have been flaunting it.

by Joe Sharkey

“

It's true: summer in Scottsdale is triple-digit, fry-an-egg-on-the-sidewalk, stick-your-head-in-the-freezer hot. Who'd want to meet here?"

That sounds like a warning complaint about the legendary summery heat in the tony city that neighbors Phoenix, but it's actually a promotional spiel from Scottsdale's tourism agency. Traditionally, locales where summer weather is staggeringly hot have downplayed that fact, but Scottsdale is flaunting it. A while back, it cooked up, so to speak, a summer promotional website, *itsthatshot.com*, to tout summer activities and discount hotel and other rates for vacation travelers, and for event and meeting planners.

How hot is it? Consider that the Phoenix-Scottsdale area had 128 days when the temperature hit 100 degrees or higher in 2018—and 19 days in 2019 when the temperature reached or exceeded 110. That scorching pattern continued in 2020. Yet record heat hasn't driven tourists away. Just the opposite, though COVID is of course impacting tourism today. In Arizona—where the state's Office of Tourism also launched a hot-weather promotional campaign—summer tourism hit an 11-year high in 2019.

By the way, you've probably read an alarming news story or two claiming that it's sometimes so hot in Phoenix, for example, that airplanes can't take off. My knowledge of aerodynamics is as thin as Sonoran Desert air in July, but a few flight restrictions on the hottest days have affected some regional jets with performance-chart data geared to a maximum of 117 degrees. Guideline maximums for larger airplanes can range up to 127 degrees. The hottest temperature ever recorded in Phoenix (so far at least) was 122 on June 26, 1990. So there's not much to worry about in this regard.

This summer and last summer, the effect of climate change on temperature has been at least as big a topic in travel as it was in 2018, when even southern Europe was staggered by heat waves that sent temperatures soaring over 100 degrees in some areas.

They're not used to that kind of heat in Europe. In the Southwestern United States, on the other hand, scalding summers are nothing new, nor are they as bothersome as they are in Europe given that, as they say in Arizona, it's a dry

heat. I live in Tucson and, trust me, a sunny 110-degree day with 10 percent relative humidity here is far more pleasant than a 90-degree day with 80 percent humidity in the New York area, my previous home base.

For real heat, take Death Valley National Park in California, site of the highest air temperature ever reliably recorded on earth: 134 degrees on July 10, 1913 at Furnace Creek. July, August, and September 2019, before the COVID travel crash, were actually the busiest months of the year, as foreign "heat tourism" visitors—Germans and Brits especially—sought to experience the extremes of the American West. They weren't disappointed. Temperatures on four days in July 2019 reached 127 degrees, and there were 21 days in spring and summer when the highs exceeded 119. The foreign tourists "travel to experience something different than they have at home," a park spokeswoman, Abigail Wines, told the *Las Vegas Review Journal*.

About 140 miles east across the desert from Furnace Creek, Las Vegas is also an increasingly popular travel destination in summer. During recent summers, when the thermometer has often exceeded 105 degrees (at 9 percent humidity), hotels routinely reported occupancy rates over 90 percent, with a robust convention business. That collapsed in 2020, but the heat certainly didn't. It was over 100 degrees every day in July.

Back in Scottsdale, meanwhile, the tourism marketers eagerly promote the fact that hotel and resort prices plunge once the thermometer skyrockets. For example, the cheapest room at the swanky Phoenician resort was \$1,152 for a night in winter 2018 but only \$332 in late July 2020, including taxes and a "resort fee." In Las Vegas, the lowest price for a room at the Venetian in late February was about \$450, but it had dropped to \$201 for August 2020 plus a \$45 "resort fee." Air conditioning is included, but that bottle of spring water on the desk will cost you extra. You can bet on it. **EJTB**



Joe Sharkey
(jsharkey@bjtonline.com), the author of six books and a longtime **BJT** contributor, wrote a weekly business travel column for the *New York Times* for 16 years.

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Why your company needs an aircraft-use policy

Here's how written rules can help—and what they should cover.

by Jeff Wieand



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Elaborate procedures and policies often weigh down big companies, especially public ones, turning the simplest actions into bureaucratic nightmares. The hapless corporate official tasked with accomplishing something can lose himself in a labyrinth of departmental approvals and box checks: procurement, insurance, law, finance, human resources. So does your company really need a formal policy for use of its jet? The short answer is yes, it probably does.

Such policies—I'm talking about written and published ones—used to be rare, something a

company might have only because several key executives were fighting over who gets to use the aircraft. If there was a chairman/founder/CEO who ruled the roost, the “policy” might just be: “I decide who flies when and where, and if you don't like it, buy your own airplane.”

Clarifying any confusion about who gets to use the jet is certainly an important reason to have a formal policy. If nothing else, it helps avoid putting someone in the flight department or elsewhere in the difficult position of having to tell a blustering executive why he can't use the aircraft tomorrow. A written policy can eliminate

the need for such explanations by specifying rules that everyone can read for themselves. Some companies make the aircraft available to all employees, while others limit its availability to specific people, departments, or levels of management. In the latter case, the rules may allow permitted users to bring along other corporate employees because, for example, they're working on the same project together.

Drafting a corporate-use policy provides an excellent opportunity for a company to reflect on, and make decisions about, what it views as most important. The most controversial use-policy issue

is a function of the company's views about the safety of air travel.

Companies that view business aircraft as among the safest forms of transportation may be committed to filling the seats and taking maximum advantage of each flight, not only as a way to move people from place to place but from a financial and tax point of view. In that case, the corporation may even require that a certain percentage of the seats on the airplane be occupied before it can be used for a trip at all.

On the other hand, a company that is more focused on the potential for an aircraft accident may in effect try to keep employees off the jet. Concerned about putting all of its eggs in one basket, it may discourage key executives or all employees in a given department from taking the same flight. Similarly, where a company regards more than one executive as too important to lose, the aircraft-use policy may require them to fly on different airplanes even when they're traveling to the same destination at the same time.

Of course, safety is an important consideration in a corporate-use policy even for companies that don't focus on the possibility of accidents. A policy can let everyone know that aircraft operational decisions are the province of, say, the aviation department director (on the ground) and the pilot-in-command (on the trip). The rules should protect the flight crew from being bullied by a key executive into implementing an inadvisable or unsafe operation that runs counter to their professional judgment. Similarly, the policy can clarify who oversees administering and enforcing compliance with the policy itself.

The policy should also contain specific instructions about how eligible travelers can request use of an aircraft. Who makes the decision about granting access to the jet? How much lead time is required under normal circumstances—and can requirements be waived if a critical trip pops up unexpectedly? If you reserved the aircraft first, can you be bumped in favor of a more important flight or passenger? The policy should include rules for prioritizing requests and adjudicating conflicts.

For times when a company aircraft isn't available for a given trip, the policy can specify and rank permissible alternates, such as use of the

executive's own aircraft (including rules regarding expense reimbursement), fractional shares, charter, and the airlines. The policy may also require specific charter operators, operator qualifications (such as Argus Platinum and Wyvern Wingman), and aircraft types (e.g., no single-engine aircraft).

Clarifying any confusion about who gets to use the jet is certainly an important reason to have a formal policy.

Don't forget to include detailed information about recordkeeping for trips—whose responsibility it is, what information should be recorded (dates, places, passengers, purposes), and where the information is kept. Such data may be invaluable if, for example, the IRS audits the company's tax return.

If the corporation has more than one aircraft, the policy should clarify which are available for what kinds of trips. The company's Global 6000 is probably not the model of choice to fly from

Chicago to Cleveland—unless its other aircraft aren't big enough to carry everyone who needs to make the trip.

Some companies have rules requiring key executives to use the corporate jet instead of the airlines for all flights, including personal ones. Not only are company aircraft potentially more secure, especially for travel to dicey destinations around the globe; they also offer all the other benefits of business aviation, such as significant savings of valuable time for key employees, a private and productive work environment (including telephone and Wi-Fi connectivity), and the ability to change travel plans quickly. The policy should dovetail with a security program if the company has one.

Personal use of company aircraft raises a host of issues worth addressing. Will executives be charged, and if so how much? The FAA now permits companies with policies that reflect a desire for key executives to be immediately available when on non-business trips to charge the executives for use of the aircraft.

Among other questions: Are pets welcome? Will the company need to collect the transportation excise tax? To the extent that the executive is not charged, will income be imputed for tax purposes? Suppose a given flight has both business and non-business passengers—what rules apply for bringing friends and family along?

A newly drafted aircraft-use policy should be reviewed by all relevant company departments, including flight, legal, financial, tax, and risk management. Aviation counsel should also scrutinize the policy to ensure, for example, that it complies with FAA, DOT, and IRS rules regarding charges and taxes for flights. And don't neglect to show it to the CEO. **BJT**



Jeff Wieand

(jwieand@bjtonline.com) is a senior vice president at Boston JetSearch and a member of the National Business Aviation Association's Tax Committee.

How to help grown millennials grow up

Providing financial assistance to your kids in the early post-college years can be a good idea, so long as you set some limits.

by Chana R. Schoenberger

For today's college graduates, an entry-level professional job, shared apartment, and other totems of early-20s life sometimes come with a backstop: financial support from Mom and Dad. But most parents who can afford to provide this assistance must nevertheless wonder how they can dial back the funding and help their kids learn to support themselves.

"It's so much better if you can get your kids to be financially independent and then if they do inherit something, they're much better prepared to inherit it," says Linda Davis Taylor, the CEO of financial advisory firm Clifford Swan Investment Counselors in Pasadena, California.

In one New York City-area family, a teen daughter was accustomed to having a credit card "for emergencies" that she was tacitly allowed to use for purchases like restaurant meals with friends. As the girl was preparing to graduate from college, her parents had her meet with their financial adviser, Jennie Sowers of New York City-based Kore Private Wealth, to work out a budget. Sowers discussed choices the girl would have to make: she would no longer be

able to afford a personal trainer, so she would have to choose a less-expensive gym membership, or perhaps just go for runs in the park. The parents knew the girl's entry-level sales job wouldn't cover much more than rent in Manhattan, and they were willing to help her financially as she started her career, but they wanted her on a path to self-sufficiency, Sowers says.

"When she graduated from college, she had no clue about money, but now, two years in, we've steadily lowered the amount of the support" she gets from her parents, Sowers says.

In previous generations, even wealthy parents often stopped providing cash to children once they became adults. Today's families, however, often underwrite rent, a cell-phone plan, or other expenses at the beginning of their children's adult lives—but only if they feel that their offspring will eventually wean themselves off the financial lifeline, Sowers says.

Every parent has his or her own ideas about what help to provide. Some don't want their kids to live in neighborhoods they consider dangerous; others consider gym time essential. "It starts with a conversation with the parents about what they

PHOTO: ADOBE STOCK



want for their kids,” says Sowers, whose clients frequently bring her these dilemmas.

While parents may have strong philanthropic values and be proud to see their children aspiring to careers in save-the-world fields like social work, environmental activism, and teaching, they typically still want their kids to understand that these jobs won't allow them to afford the lifestyles they've had.

Financial advisers also see the opposite situation: parents who fear their social status will take a hit if their children appear to be downwardly mobile.

In either case, frank conversations about what Mom and Dad expect and what they're prepared to pay for should start early, when a child is choosing a college major. “You can't force kids to be investment bankers if that's not their skill set, but if they're choosing among a variety of programs, they can pick one that will make them more competitive,” Taylor says. A psychology major, for instance, could take courses in data science and statistics, which could be useful for a career in marketing or academic research.

For grown children who haven't found their way onto a career ladder, Taylor recommends a business-style family meeting to talk strategy. When you sit down with your children, discuss their skills and talents, and consider whether they might need career or psychological counseling. Have frank conversations about their college major or graduate degree, and whether it will lead to a job or whether they'll need to pursue additional studies or a professional certificate. Be clear about what exactly you're willing to fund and for how long, Taylor says.

Set deadlines in advance if you want to pull back on making financial transfers to your children, she adds. Let them know, for example, that six months from now they'll have to pay their own cell-phone bills or that next year they'll have to cover a certain percentage of their rent.

If you have reached your limit and no longer want to make financial gifts to your grown children, consider setting up a family “bank,” Taylor adds. “If your children want to apply for additional support for specific reasons, to help through a rough patch, they can apply for a loan with an agreement about how and when they will pay it back, just as they would do if they borrowed from a financial institution,” she says.

“Helping with the basic necessities of life feels different than providing an unlimited credit card to go shopping,” says Christine Whelan, a professor

who directs the Money, Relationships & Equality Initiative at the University of Wisconsin-Madison's School of Human Ecology.

One expenditure that's worthwhile to many parents is family travel. While they may balk at sponsoring their kids' trips with friends, they're eager to foot the bill for their kids, kids' spouses, and grandkids to join them.

“Some parents will say, ‘What we value now is being together, so once a year we want to have a multigenerational family trip, which is a luxury, but it's also keeping the family connected,’” Taylor says.

One client recently called to alert Sowers to expect financial outflows when she pays for her children and their spouses to join her in Bermuda. “This woman wants to spend her money creating experiences with her kids, and so she provides that,” Sowers says.

Should kids always accept money from parents? It depends. From the children's point of view, it may be valuable for them to say no to parental help, says Whelan. Not taking money from their families means they get to direct their own choices in life without giving their parents a veto, even if their standard of living goes down, she says.

“The unfortunate dynamic we don't like to recognize in our family lives is that money is power, and if parents provide the money, it keeps them in charge,” Whelan says.

It may make sense for families to pay for vacations together, for tuition and healthcare, and for essentials like rent if the grown children are in jobs where they can't afford it. Families may also want to put their money toward helping their grown children spend more time with their own kids—for instance, by paying for them to hire a housekeeper. But extravagances are the grown child's purview, she says.

“Funnel your resources toward joint experiences and making sure basic needs are covered around education and health,” Whelan says. “After that, they should be on their own.”

BJT



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CYRILLE COSMAO/DASSAULT

Flying in the Age of COVID-19

A revamped business aviation landscape will affect everyone from occasional charter users to multiple-aircraft owners. Here's what you need to know to deal with changes resulting from the pandemic.

by James Wynbrandt

COVID-19 has upended the business aviation industry, bringing aircraft manufacturing, maintenance, and transactions to a virtual halt. But these systemic shocks have been of relatively little consequence to private jet travelers—so far, at least.

Most have been resigned to staying sheltered or were required to do so. Yet, while governments shut borders, airlines slashed service, and your office became off-limits, private aviation remained open for business. If you needed to charter, use hours on your jet card, or summon your fractional-

share aircraft, your provider could accommodate you. For aircraft owners, meanwhile, access to the National Airspace System remained uninterrupted.

Meanwhile, the industry quickly implemented effective safety protocols. It also secured financial and regulatory assistance from Congress and the FAA to keep business aviation and the airways open. (See sidebar on page 00.) Indeed, business aviation demonstrated once again, perhaps more emphatically than ever before, that its people, equipment, and culture can be counted on in times of crisis.

But make no mistake: COVID-19 is dramatically altering this industry, and you need to understand what's changing, how those changes will affect your flights, and what you can do to be ready.

BUSINESS AVIATION'S NEW FLIGHT RULES

The first rule of flying in the coronavirus era: make sure your lift provider—whether a charter or jet card company, membership or fractional program,

flight department, or yourself as an owner—follows recommended standards for coronavirus prevention. If you travel on your company's aircraft, or on a principal's owner-flown aircraft, ask the head of the flight department or whoever is in charge of the boss's airplane about health procedures.

The Centers for Disease Control, Food and Drug Administration, and World Health Organization are among agencies promulgating standards. Comprehensive compliance guidance is available from business aviation groups, including the National Business Aviation Association (NBAA), Helicopter Association International (HAI), National Air Transportation Association (NATA), and European Business Aviation Association (EBAA).

Virtually all providers, from operators to ground-service suppliers, have developed and instituted COVID-19 protocols. Signature Aviation's SignatureAssure is among now-common branded safety programs based on standards from the aforementioned agencies, and the company ensures that its service partners observe them, as well. Universal Weather and Aviation, for example, has implemented its own standards-based program at the top 100 destinations frequented by its flight-services customers, covering FBO operations, in-flight catering, and ground transportation.

For the foreseeable future, you'll see examples of these measures throughout your journey. You'll be asked about your health and recent travel, have your temperature read before departure, and fly with a mask-wearing crew. The aircraft will have been disinfected immediately after its last use to ensure that it's safe for servicing by ground personnel and again, for your safety, before you board. You will be offered a mask. Catering options may be limited, and onboard service items may be disposable.

Protocols are in a constant state of updating as researchers gain more understanding about the coronavirus and new disinfection products and systems come to market. Charter broker Magellan Jets had to "learn how to match up the list of FDA- and EPA-approved cleaning materials" and then distribute ample supplies to its partner operators, COO Todd Weeber said during a NATA webinar.

Companies have become accustomed to customers requesting details about cleaners and procedures, according to that webinar's participants, so don't be shy about asking. At an NBAA-hosted webinar on disinfection practices, decontamination expert Frances Grinstead recommended that customers demand peer-reviewed data on the efficacy of each product and system the provider uses.

Remember that though all U.S. public-use airports remain open, surrounding communities

may be under various lockdowns, so investigate your intended destination accordingly. If you're planning to travel internationally, your charter provider will research any COVID-19 restrictions affecting the flight, your entry into the country of destination, and quarantine issues.

FINANCIAL CONCERNS REGARDING LIFT PROVIDERS

For the duration of the downturn, charter will likely remain on sale along many routes, as operators struggle to generate cash flow and book enough business to satisfy the manufacturer-recommended minimum operational time for engines and aircraft. This has led to a "race to the bottom in pricing," says Worldwide Jet's Noel Fournier. However, one-way pricing has reportedly become less available on some routes, as providers aren't confident that they can find customers to book the return legs.

Many jet card, membership access, and fractional programs report an uptick in customer renewals and inquiries from prospects. Fractional-fleet operator Flexjet's CEO, Mike Silvestro, terms such activity "off the charts," and NetJets saw in May "the best month of new customer relationships" in 10 years.

Yet COVID-19 has revealed the risks to financial health that charter providers can represent, in the failure of light jet operator JetSuite. The high-profile company, backed by Jet Blue and Qatar Airways, owed some \$50 million in deposits to customers when it was forced into bankruptcy after the pandemic cratered demand. In bankruptcy filings, JetSuite revealed that it had never been profitable. (Several membership programs stepped up to offer discounted services to former customers who lost deposits, though most of these programs require deposits of their own.)

The true financial condition of privately held companies is impossible to know. Nonetheless, ask for audited financials before depositing funds with any flight provider. Consider working with a consultant to help with your choice. And seek a provider that offers an escrow option. In the wake of JetSuite's bankruptcy, for example, Clay Lacy Aviation introduced interest-bearing, protected accounts for customer deposits.

CORONAVIRUS 101 FOR AIRCRAFT OWNERS

Aircraft owners must ensure that an effective written COVID-19 protection plan—which outlines standards and practices to be followed through-

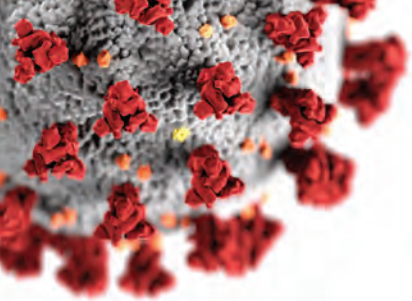


FLIGHT ACTIVITY UNDERSCORES BUSINESS AS UNUSUAL

The COVID-19 era arguably began March 11, when the World Health Organization declared the virus a pandemic, triggering the global lockdown that reduced business jet activity to what aviation services company Argus International at the time called "unfathomable levels."

In North America, March, April, and May all broke Argus's previous record low for flight activity—February 2009, the bottom of the Great Recession. April 2020, the nadir, registered 47,771 flights, compared with more than 250,000 in April 2019. Charter was down 67 percent, private flights were off 72 percent, and fractional flight hours declined 80 percent. Europe, already in a prolonged bizav slump, saw year-over-year activity drop more than 70 percent in April as lockdowns took hold, and remain down more than 60 percent in May. In early June, business aviation activity was 49 percent lower year over year in North America and 51 percent globally, according to Hamburg, Germany-based WingX.

The stock market and overall economy will largely rule business aviation activity going forward. Look for October's numbers for the next big data point on its trajectory, Argus and others say. That is expected to be North America's highest traffic month, thanks to spinoff activity from the forthcoming presidential elections, professional sports (the only month when all six leagues are playing), the absence of national holidays to disrupt schedules, and few weather interruptions. As October goes, market watchers say, so go the following months.



DIVERTING FROM FLIGHT TO COVID FIGHT

Responding boldly to the coronavirus pandemic, business aviation continued its tradition of providing humanitarian assistance in times of need as only it can. Volunteer pilots in Colorado teamed with the state's business aviation association and Department of Veterans of Foreign Wars to bring medical equipment, doctors, and COVID-19 test kits to remote mountain towns that are difficult to access by road. Collins Aerospace and Universal Weather donated flight-handling services for pandemic-related humanitarian operations, while Wheels Up and partner Feeding America launched "Meals Up," collecting 10 million meals for families facing economic hardship due to the virus.

In addition to such traditional relief missions, business aviation responded as if going to war, marshalling its resources toward producing the weapons of victory. Billings Flying Service, a family-owned helicopter operator in Montana, reprogrammed its 3D printers to produce protective face masks for local medical personnel, for example. Duncan Aviation, the Midwest-based MRO powerhouse, channeled its interior design and manufacturing skills to fabricating protective face masks for hospitals. At Piper Aircraft in Florida, production workers made face shields for medical personnel at the local Cleveland Clinic Indian River Hospital.



TACAIR

out flight operations—is in place. The NBAA has published guidelines owners can use to implement cleaning protocols, and HAI has issued "COVID Clean" standards for rotorcraft operators. These cover disinfection and cleaning procedures for aircraft and facilities, and the use of personal protective equipment (PPE).

Consider the ground services at your destination airport and contact any facility you're considering for a tech stop or longer stay to ask about its COVID-19 protocols. If a management company operates your airplane, satisfy yourself that it has instituted appropriate practices.

Make sure you've minimized the potential for liability claims arising from COVID-19 exposure in your aircraft, whether from a charter customer, a line person who handled the baggage, or others. Aviation attorney David Mayer advises requesting COVID-19 waivers and indemnities from affected individuals to mitigate the risk of liability claims. Examine your insurance policy to see whether it protects you against such claims. Though proving a link between a suspected exposure and infection is difficult, you must take reasonable care to maintain a safe and healthy environment in and around the aircraft to avoid being considered negligent and liable.

Ensure that your flight crew remains sharp despite falling flight hours and the FAA's waived recurrency and training requirements. Wyvern's senior director of quality and education, Andrew Day, suggests providing simulator stick time "at the very least."

Maintain manufacturer-mandated operational minimums for your aircraft and engines; failure to comply can void warranties. At Solairus Aviation, which has 119 aircraft on its charter certificate, owners allow their crews to perform takeoffs and landings, "and in some cases a few approaches,"

notes Tom Benvenuto, senior vice president of flight operations. To maintain their focus on aviation, Solairus also regularly gathers its remotely based crewmembers online in small groups to discuss aircraft systems and procedures.

Monitor the financial health of your management company, as well. As demand for lift skyrocketed in the lead-up to business aviation's last cataclysm—the Great Recession—some management companies underpriced their fees to draw aircraft owners, calculating that their 15 percent share of charter revenue would compensate. Some of their clients, meanwhile, counted on charter income to make aircraft ownership financially viable. Both approaches revealed their folly in the ensuing collapse.

Sound management companies charge fees commensurate with the services they offer and keep owners apprised of the economics and realities of the charter market. If your management company doesn't appear to be doing that, ask why.

BUYING AND SELLING AIRCRAFT IN A PANDEMIC

Buying and selling business aircraft during COVID-19 hasn't been as easy as booking a flight through charter or other "asset light" access programs. At the onset of the coronavirus era, uncertainty about aircraft valuations brought transaction activity to a near standstill; with residual values unknown, aircraft financiers turned off the spigots, and prospective buyers walked away from deals. Moreover, the mechanics of transactions—moving an aircraft to an inspection site and returning the crew home as well as ensuring the facility would remain open and that needed parts would be available—became fraught with risks of their own, further inhibiting transactions.



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The last convulsion of this scale followed the 2008 financial collapse, which introduced a decade of declining values, but consider important differences between then and now. The 2008 debacle was triggered by a financial bubble, one big enough to levitate the values of some preowned business jets higher than those of new models (no waiting in line!). By contrast, valuations on the eve of the COVID-19 era were reality-based, and for now, government stimulus programs are helping to soften financial fallout, and panic pricing hasn't cut residual values.

A sales slowdown began in the fourth quarter of 2019 after more than a year of market stabilization, and low global economic growth prospects were anticipated to put a damper on demand in 2020 anyway, but not on the scale COVID-19 created. In April and May, preowned business jet transactions were down about half, year over year, from a total of 431 to 217.

On the plus side, "sellers have [refused] to capitulate to market pressure to sell quick and cheap," says JetNet's Paul Cardarelli.

As of mid-June, inventory stood at 10.3 percent, with some 2,300 jets on the market. Though that's above the 10 percent threshold considered to separate a buyer's and seller's market, no influx of for-sale aircraft accompanied the decline in transactions. By contrast, in the recession, inventory quickly began rising and ultimately topped out near 18 percent.

Also, by mid-June, average values of business jets fell 13 percent from COVID's onset, Amstat reported, with large-cabin models losing the most (15 percent) and light jets the least (12 percent).

But the market remains thin, and with uncertainty prevailing, professionals advise buyers and sellers alike to wait for more clarity.

If you're thinking of selling, use the current downtime for maintenance and upgrades that will make your aircraft stand out in what is likely to become a more competitive market. If you're a buyer, work to identify the best models for your mission. The economic downturn is sure to motivate some owners to sell their aircraft, and some bargains for cash purchasers may be available. If you want to capitalize on such an opportunity, don't try to lowball your bid, angling for the deal of a lifetime. Identify a target acquisition and seek a reasonable discount rather than a fire-sale price.

Meanwhile, the slowdown that began last year and was accelerated by COVID-19 has hit sales of new aircraft as well. Manufacturers have reduced workforces and lowered production and sales targets and will likely sell 30 percent fewer aircraft than they did last year, predicts JetNet's Rolland Vincent—even as a new generation of models (the

Pilatus PC-24, Bombardier Global 7500, and Gulfstream 500 and 600, for example) come to market. Some new aircraft are reportedly being discounted. So if you've been thinking about buying new, this could be an excellent time to do it.

THE ROUTE AHEAD

One rare bright spot in the COVID-19 crisis is that it has for now erased business aviation's pilot shortage, which had increasingly constrained operations and raised concerns about the industry's growth prospects. The airlines are expected to furlough thousands of pilots before traffic returns to pre-pandemic levels, ending the exodus of corporate pilots to the commercial world, though the length of the reprieve is debated.

Meanwhile, the economy will remain business aviation's underlying driver, and for now, as goes COVID-19, so goes the economy. But whatever the economic trend, the consensus is that in the long term the pandemic will bring business aviation many new customers who are concerned about the health risks of commercial aviation.

Fully 90 percent of the approximately one million people who can afford to fly privately do not, according to a recent McKinsey study based on Credit Suisse and Wealth-X data. Moreover, 40 percent of billionaires are 70-plus years old, and the average age of ultra-high-net-worth Americans is 58, putting this group at high risk for COVID-19 and other pathogenic diseases.

But fewer providers may be around to offer them service. Grants, cash reserves, and investor funds are helping to keep business aviation airborne, but many industry observers expect that if the downturn continues beyond this year, some providers could consolidate or go out of business. Conversely, many believe that should the war against COVID-19 turn a corner by year's end, we'll see a strong market turn.

"During an economic downturn or a recession, business aviation has been the first to go and the last to come back," says Joe Moeggenberg, CEO and president of aviation services company Argus International. "This [current situation] is just the opposite. Companies are not selling their airplanes, corporate flight departments are not putting aircraft on the market or furloughing pilots and other staff, and the same goes for charter operators." **BJT**



James Wynbrandt
(jwynbrandt@bjtonline.com), a multi-engine instrument-rated pilot and regular **BJT** contributor, has written for the *New York Times*, *Forbes*, and *Barron's*.



HELP FROM UNCLE SAM

Business aviation was included among the industries eligible for funds resulting from the Coronavirus Aid, Relief, and Economic Security (CARES) Act. "Congress has demonstrated an understanding of the importance of business aviation as a transportation link and as an economic engine," says Ed Bolen, president and CEO of the National Business Aviation Association, which led a legislative effort to secure the assistance.

Grant recipients have included two global, vertically integrated lift services: Directional Aviation's OneSky Flight (\$84 million) and Wheels Up (\$74.2 million). Directional Aviation owns Flexjet, jet card company Sentient Jet, and OneSky Flight and charter brokerage PrivateFly. The Wheels Up membership access provider is the parent of TMC Jets, Delta Private Jets, and Gama Signature Aviation. More than half a dozen other bizav companies received at least \$1 million each in CARES funding, with some mainstream media questioning the propriety of the grants.

"These funds are being used solely to preserve jobs because that's what they're mandated to be used for," says Scott Cutshall at Clay Lacy Aviation, which saw flight activity decline more than 90 percent after the pandemic's onset and received \$26.9 million. "These funds have enabled us to keep people employed," he notes.

Critically, also, the FAA published Special Federal Aviation Regulation (SFAR) 118, temporarily waiving certain training, recency, checking, and testing requirements, which has enabled flight crews, technicians, and other professionals to remain on the job.

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FACTORY-NEW
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Embraer Phenom 300E

A bestselling business jet gets another laudable upgrade.

by Matt Thurber

A new version of Embraer's Phenom 300E, which received FAA certification in late March, offers a faster top speed than its predecessor as well as upgraded avionics and an improved cabin. These enhancements are especially noteworthy since the Phenom 300 has been a bestselling light jet for the past seven years, with more than 540 entering service since the first delivery in 2009. Its competitors are Cessna's Citation CJ3+ and CJ4, the Learjet 75, and Pilatus's PC-24.

In 2018, Embraer upgraded the Phenom 300 with the E package, adding features to the Lufthansa Technik nice-HD cabin management system and other comfort elements. What's new in the cabin of the \$9.65 million latest version of the 300E—which has also been certified by aviation authorities in Brazil and Europe—is the availability of the Bossa Nova interior. That interior takes attributes from the Praetor 600, such as Ipanema stitching and details, carbon-fiber accents, piano-black veneer, accent leather, and gold plating. The

interior is also much quieter than that on the previous 300E, thanks to engineering changes to mechanical components.

Sound-suppression improvements include new thermal-acoustic insulation, which lowers the high-pitch tone of the engines during climb by minimizing the blade-passing frequency perceived in the cabin, according to Embraer. Engineers also redesigned three check valves to eliminate metallic flapper noise during descent and final approach. A new muffler in the vapor-cycle air-conditioning



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system eliminates noise from the condenser fan, which previously could be heard during approach; it also reduces noise from the system when it's running on the ground.

The 300E is available with three interior layouts. The maximum number of occupants in one available layout is 11 (one pilot, 10 passengers), and this includes a belted lavatory seat and a two-place divan opposite the main entry door. If that divan is replaced with a single seat, the total drops to 10. For nine occupants, the seat opposite the entry door is replaced with storage/galley features.

Another improvement for pilots and passengers is upgrading the airborne connectivity to Gogo's Avance L5 air-to-ground system, which offers much faster service in the U.S. and many areas in Canada, allowing streaming of movies, emails with attachments, and Gogo's Text & Talk service. Avance L5 does require two rather large antennas mounted on the bottom of the fuselage,

but the faster service makes these worthwhile.

The most significant change in the new Phenom 300E is its more powerful Pratt & Whitney PW535E1 engines with 3,478 pounds of thrust, up by 118 pounds per engine. The increased power means faster ascents and a new top speed of Mach .80 or 464 knots true airspeed, up from Mach .78 and 446 knots. The power increase was done via a software change to the engines' full authority digital electronic engine controls, thanks to some extra power margin built into the engines.

Embraer engineers were able to carve out extra fuel volume, and the 300E carries another 50 pounds, boosting range to more than 2,100 nautical miles at long-range cruise speed. Maximum payload remains the same at 2,436 pounds, but payload with maximum fuel is up 26 pounds to 1,387 pounds.

You can choose to go faster in the new 300E or slow down and go farther. For example, with

six occupants, range at long-range cruise speed is 2,010 nautical miles. At maximum cruise speed, that drops to 1,865 nautical miles. Those numbers are for the baseline airplane; most buyers will opt for typically equipped configurations, which means that you could still fly the 1,865 nautical miles at high speed but with five occupants, not six.

Taller pilots will love the new space on the flight deck. By moving the bulkheads behind the pilot seats farther aft and redesigning the location of some items that live in the bulkhead area, Embraer was able to add 40 percent to the length of the pilot seat tracks. This might not seem like much, but the flight deck can now comfortably accommodate pilots up to six feet four inches, solving an issue with the Phenom 300.

Pilots will also enjoy the new avionics capabilities in the Garmin G3000-based Prodigy Touch flight deck. This includes new avionics display hardware with much faster processors, higher resolution, and improved map-panning features. In

FACTORY-NEW AIRCRAFT

addition, Embraer has added emergency descent mode as a standard feature; it autonomously flies the airplane to a lower altitude in case of decompression at high altitudes.

The new displays and software load enable the addition of graphical weight and balance, takeoff and landing data, and performance calculations and autopilot-coupled go-arounds, all also standard features, as is ADS-B Out/In.

To help pilots avoid landing problems, Embraer added the standard Stabilized Approach System and the optional Runway Overrun and Awareness Alerting System or ROAAS. Designed to reduce the risk of a runway overrun on landing, ROAAS addresses one of the top issues in business aviation safety. Overruns are the third-biggest cause of incidents and accidents in business aviation, and traditional mitigation efforts such as training aren't helping reduce the accidents.

ROAAS calculates runway distance in real-time while the Phenom is approaching and landing; accounts for deviations that may lead to an overrun; and advises the pilot to perform a go-around or to use maximum braking action once on the runway.

ROAAS bases its warnings, which are both aural and visual on the flight display, on the actual weight of the airplane by recalculating in real-time



the aircraft's energy state. This is a unique system and the first-ever application certified for business aviation, although similar technology has been implemented by Airbus for its commercial airplanes and is planned for the Gulfstream G700.

The upgrades—some of which will be available for retrofit on existing Phenom 300s—all make a lot of sense. They improve upon an already excellent aircraft, making the cabin and flight deck more comfortable while adding important safety features. **BJT**

Matt Thurber (mthurber@bjtonline.com) is editor in chief of AIN Publications, publisher of **BJT**.

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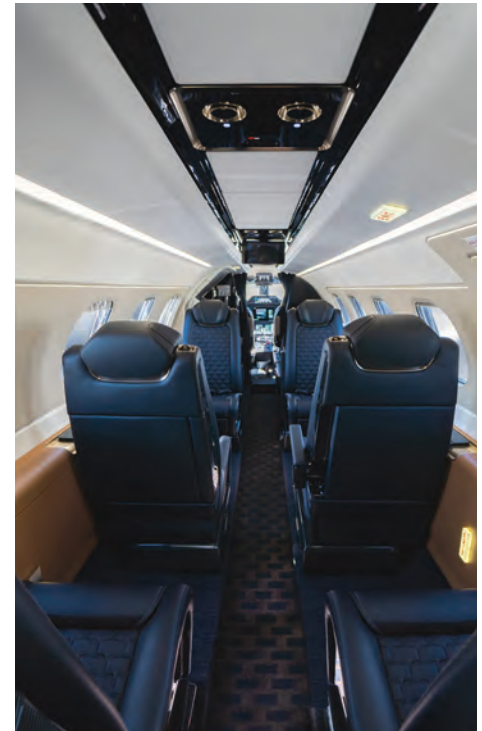
2020 Embraer Phenom 300E at a Glance

Price*	\$9.65 million
Passengers	8–10 (plus 1 crew)
Range**	2,010 nm
Long-range cruise	385 ktas
Maximum takeoff weight	18,551 lb
Cabin	Volume: 325 cu ft
	Width: 5.1 ft
	Height: 4.9 ft
Length: 17 ft 2 in	
Baggage capacity:	84 cu ft

Source: Embraer

*typically completed and equipped

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MARK WAGNER

Where the new and preowned markets meet

When manufacturers offer discounts, used jets' residual values drop, too.

by James Wynbrandt

The preowned and new aircraft markets typically behave quite differently. Prices virtually always go down for preowned aircraft, but they almost always go up for new ones. (The bubble preceding the Great Recession was an exception regarding preowned prices; among factory-new models, rare outliers include the Learjet Liberty, the upgraded and downwardly priced model 75 introduced last year to better compete among light jets.) Moreover, manufacturers determine new aircraft prices long before models become available, and unlike prices for pre-owned aircraft, those for factory-fresh airplanes

are not often adjusted to changing market conditions. Airframers prefer offering enhanced warranties, additional crew training, and other value-added incentives over price cutting.

Discounts are a slippery slope: word gets around when a buyer receives a manufacturer discount, and demand for markdowns grows. Meanwhile, as soon as the news reaches the preowned market (almost immediately in most cases), prices face downward pressure, as some buyers see a reduced-price new model as a better deal than a late-model preowned one, and preowned values drop along with that of the discounted new aircraft.

Manufacturers have a large interest in and responsibility for maintaining the residual value of their in-service fleet: no matter how many bells and whistles an aircraft has, fewer buyers will invest in it if it doesn't hold its value as well as its competitors do. Indeed, manufacturer discounting is a major potential peril to residual values.

But how is this reluctance to discount playing out in today's coronavirus-stunted market, where new business aircraft sales are expected to be down 30 percent in 2020 from last year's totals, according to JetNet IQ founder and president Rolland Vincent; and Textron, Bombardier, and Gulfstream are furloughing thousands of employees?

For now, manufacturers appear to be holding the line on pricing, Vincent and others say. Buyers aren't cancelling orders, either, though some are deferring delivery dates from 2020 to 2021, or even to 2022. However, as in the preowned markets in times of distress, opportunist buyers are trolling the manufacturers' waters in search of a strike. "Are there sharks in the water?" asks Vincent rhetorically. "They'll always be there when there's the smell of blood."

If it's not actually blood, it's certainly red ink. Last year, an average of 50 new aircraft per month entered service, according to the consulting group AircraftPost. Through the first five months of 2020, the average was 31 aircraft per month. Few expect the flow of red will be staunched soon.

"Repeat buyers will wait for some of the economic uncertainty to subside before risking capital," consultant Brian Foley wrote of new jet sales prospects in a July report.

Meanwhile, on the preowned side of the fence, owners have also shown a determination to display pricing discipline in the face of COVID-19's strong downward pressure on inevitably declining values. [See "Buying and Selling Aircraft in a Pandemic" on page 18.—Ed.].

But what the broad metrics about declines don't show is that pricing varies widely by model. AircraftPost recently provided some often-elusive apples-to-apples value comparisons between the second quarters of 2019 and 2020 that underscore the

amplitude range: a 2014 model Phenom 300 dropped just 4.5 percent (from \$6.6 million to \$6.3 million) over that period while a 2014 Gulfstream G550 lost 35 percent (from \$33 million to \$21.5 million). Maybe the Phenom buyer this year was particularly motivated, and the G550 seller was eager to conclude the deal and transition into a new G600. It doesn't matter. Those figures become the new standards for preowned pricing and residual values until the next transaction.

Meanwhile, according to AircraftPost, the value of a 2014 Citation XLS+ declined 12 percent over the same period; a 2015 Challenger 350 lost 13 percent; a 2010 Gulfstream G450 went down 18 percent; and a 2008 Dassault Falcon 2000 EASY dropped 22 percent.

A couple of caveats to keep in mind about manufacturer resistance to discounting: this policy is often partially suspended come the fourth quarter of the year, as manufacturers aim to boost their annual sales numbers; and some airframers are known to be more willing and aggressive in such discounting than others, an eagerness often correlating to the numbers of aircraft the company produces. Even with current production cuts, Vincent predicts, manufacturers will have "some reservoir" of unsold aircraft—so-called white tails—as the end of 2020 approaches. If you're on the fence about choosing between a preowned or new jet, that could be the perfect opportunity to test the manufacturer waters for yourself. **BJT**



James Wynbrandt
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FBOs spread their wings for the on-demand crowd

These ground-service facilities have improved dramatically in recent years. Here's why—and how to find the best ones.

by James Wynbrandt

Some seasoned charter customers prefer to drive directly up to the airplane outbound and be met by car planeside at their destination, assuming security rules allow this. Many others, though, arrive and depart via FBOs, or fixed-base operations. If you're in this latter group, you'll want to make sure your flights are bookended by top-notch FBOs. These airport facilities provide amenities for pilots and fuel and services for aircraft but also many amenities for business jet passengers.

The archaic moniker doesn't begin to explain what they offer. "Fixed-base operator" is popularly dated to America's Air Commerce Act of 1926, a time when aircraft used open fields as their ports, and transient services provided fuel and maintenance. The Act brought airports under federal regulation, and as they spread and field work dried up, many former transient operators established fixed facilities at the bases.

No contemporary charter customer averse to oil stains would want to pass through one of those early centers. But thanks to a wave of investment over the past decade, many FBOs are now as synonymous with luxury as private jets. The new Million Air terminal at New York's Westchester County Airport includes a room-size golf simulator and a complimentary, barista-staffed Starbucks. At Desert Jet's terminal in Palm Springs [California]/Thermal, you can drive into an enclosed, air-conditioned porte cochere, where you can leave your car to be detailed while you're away.

Large business aviation hubs may offer several FBOs. The New York metro area's Teterboro and Los Angeles's Van Nuys each have half a dozen. (Signature Flight Support, the world's largest FBO chain, operates three of the Teterboro facilities and two at Van Nuys.)

You might want to use a particular FBO for any number of reasons. If you're an aircraft owner who employs charter for supplemental lift,



ADOBE STOCK



CURT EPSTEIN

Million Air, Westchester

you might prefer to use your management company’s FBO. Or maybe your golf game is a little rusty, so you want to depart from the Million Air facility with the golf simulator.

Charter providers will generally accommodate requests for using a particular facility, but your choice could impact the price of the flight. That’s because many operators have agreements with chains, networks, and independent FBOs that provide for discounted ground handling, fuel, and other services.

A good charter provider ensures that service levels at its selected facilities are on par with those delivered onboard. But customers who wish to choose for themselves have several ways to help them size up options.

The International Standard for Business Aircraft Handlers (IS-BAH)—developed earlier this decade by the International Business Aviation Council and the National Air Transportation Association—is a voluntary ground-handling accreditation. It requires, among other mandates, that an FBO have a Safety Management System. Any IS-BAH-certified facility is likely paying close attention to customer service, as well.

The Paragon Network comprises independent and small-chain FBOs worldwide that meet a common five-star standard for facilities and services; operating like one large FBO chain, the more than 50 locations also facilitate travel between affiliated FBOs. The more than 70 FBOs across 25 countries in the



Sugar Land Regional

World Fuel Services–sponsored Air Elite network provide “Diamond Service” while offering the local expertise and regional flair of its audited and independently owned members, the group says.

Additionally, **BJT** sister publication *Aviation International News* publishes an annual, in-depth survey covering some 4,500 FBOs worldwide, tabulating responses from pilots, flight attendants, dispatchers, and qualified subscribers. It ranks each location on five factors—line service, passenger amenities, pilot amenities, facilities, and customer-service representatives—and these scores are combined to create an overall rating. (FBOs overwhelmingly receive similar rankings across the five categories; rarely will a location’s rating in one category greatly eclipse or fall short of its average rating, according to *AIN* senior editor Curt Epstein, who reports on the survey.)

As the *AIN* poll reveals, you don’t have to be a big chain to deliver top-notch service. Standalones including Pentastar Aviation in Michigan, Fargo Jet Center in North Dakota, and Epps Aviation in Atlanta consistently earn top recognition in the annual rankings. Meanwhile, survey results suggest that FBOs have



Pentastar Aviation

steadily improved over the last decade. In the 2009 poll, which employed a 10-point system, only one FBO—Sugar Land Regional in Texas—broke the nine-point barrier (9.09), the equivalent of 4.55 on today’s five-point scale. That happens to be the minimum score it took to make it into the top 20 percent of FBOs in the 2019 survey.

The change reflects the consolidation and expansion of the FBO field since the mid 1980s. That change has been particularly pronounced lately, as FBOs have become a darling of private investment firms, and airports, seeking their own competitive advantages, have become more demanding in the services they want leaseholders to provide. Several recent purchases have been funded by private equity, helping to build out the reach of Jet Linx, Modern Aviation, Ross Aviation, and others, notes Stephen Dennis, CEO of the Aviation Resource Group. With the increased demand, *AIN*’s Epstein says, some FBO buyers today “are paying price and earnings multiples that in many cases are more than double the valuation models that the industry has long favored.”

BJT



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Hawker 4000

This super-midsize business jet can be yours for less than \$2 million.
But there are reasons for that low price.

by Mark Huber

Airplanes are more than just collections of parts, airborne conveyances, or style statements. Every aircraft tells a story of its time and place, and of the organization that spawned it. Sometimes it is a tale of toil and triumph backed by vision and persistence, a risk that is rewarded with marketplace accolades and happy customers. And then there are times when the whole process is polluted by hype, drowned by cost-shaving compromises, dismembered by endless delays, insulted by hubris, and ultimately, killed by disappointment. Airplanes so developed are monuments to managerial incompetence. Airplanes like this do a depreciation death spiral. Airplanes like this get pushed outside hangars while their owners



pray for damaging hailstorms and hurricanes to trigger insurance payouts. The Hawker 4000 is an airplane like this.

Fractional companies canceled early large orders for the model as development dragged on for 14 years. Meanwhile, parent Raytheon Aircraft foundered and was eventually acquired with loads of leverage by an investment banking consortium. It renamed the company Hawker-Beechcraft in 2006, a halcyon time for the corporate jet business that would abruptly end a couple of years later with the worldwide economic crash. By the time the 4000 finally made its way to customers in 2008, competitive products from Bombardier and Gulfstream had substantial head starts and had been flying for years.

In addition, early-serial-number 4000s were full of expensive bugs, and solutions were often slow in coming. By the time Hawker-Beechcraft filed for bankruptcy in 2012, production had come to a halt with just 73 built. Like the ill-fated Beechcraft Starship before it, the 4000 had achieved membership in the billion-dollar burn-through club, with results decidedly short of expectations. The successful bidder for HawkerBeechcraft's parts and pieces, Textron Aviation, declined to resurrect the 4000's corpse. Instead, it decided to offer a new, mostly metal version called the Cessna Citation Longitude. The market has responded as expected: for a 2009 Hawker 4000 that sold new for \$23 million, you'd be lucky today to get \$3.8 million—and a little more than half that figure would be more likely.

It was an ignominious end for an aircraft that once held much promise. Christened the Horizon when first announced in 1996, the 4000 was an alleged game-changer in the then-nascent super-midsize corporate jet market.

Raytheon Aircraft—educated by the spectacular \$1 billion egg it had laid with its futuristic, all-composite Beechcraft Starship twin-engine turboprop a decade earlier—had devised a new way to build a mostly composite business jet. The manufacturer used a giant automatic fiber-placement machine called Viper to precision wind and mate the 4000's carbon fiber fuselage to a pair of aluminum wings.

The composite fuselage cut weight, fabrication, assembly, and labor time; is five times stronger than aluminum; is impervious to corrosion; and yields more cabin space. The carbon fiber fuselage enables a low cabin pressure altitude—just 6,000 feet at the aircraft's maximum cruising altitude. The possibility for rigidity-induced cabin noise is mitigated by special iso-



lators that dampen vibration and yield a cabin that's quieter than most luxury sedans of the day.

The stand-up, flat-floor cabin features seating for eight or nine passengers in either double- or single-club configuration plus a half club opposite a three-place berthing divan. A forward cabin galley, two forward closets, and a rear cabin lavatory with walk-in baggage compartment with external access complete the layout. The 100-cubic-foot baggage compartment can be accessed when the aircraft is flying below 41,000 feet. Both the lavatory and the baggage compartment are generously sized for an aircraft in this category. You can actually stand up and move around in the lav, which features a potable water system, gravity-fed flushing toilet with external servicing, and a wash basin. A belted lav seat was an available option. Early customers criticized the toilet for having inadequate capacity.



The 4000 was the first business jet designed around Honeywell's Primus Epic integrated electronic flight and cabin-management system. The display screens and other expensive electrical components, including the heated windshield, were prone to failure due to recurring problems with the aircraft's power distribution assemblies. There were also landing-gear issues. The aircraft features some fly-by-wire controls,



USED AIRCRAFT REVIEW

including those for the rudder and spoilers. However, in a cost-cutting move, Raytheon decided not to equip the 4000 with forward-edge wing slats, and their absence hurts the jet's runway performance. It's not a pavement hog on par with a G200, but the 4000 still needs 5,088 feet of runway to take off at its maximum takeoff weight of 37,500 pounds. The maximum range is 3,393 nautical miles—respectable compared with that of most other aircraft of similar class and age.

HawkerBeechcraft offered a fix for most of the 4000's deficiencies in 2010. However, parts for these upgrades—and 4000 parts in general—are hard to come by and generally need to be made to order by Textron Aviation. This makes dispatch reliability somewhat problematic, according to Paul St. Lucia, who used to manage a charter fleet of 4000s that once numbered 16—the world's largest. At one time, St. Lucia says, that fleet was down to three flyable aircraft due to parts issues, and he knows

operators who have bought used 4000s for parts.

The parts problem has made the aircraft's future uncertain, according to Woody Cottner at Global Aviation Technologies in Wichita, Kansas. Cottner's firm has been a leading third-party service provider for the 4000s that are still flying, but Cottner says that lately his company has seen fewer of them as values of used ships and interest in them wanes.

St. Lucia disagrees with Cottner's assessment, pointing out that other limited-production Hawkers with challenging maintenance and parts issues, such as the Model 1000, remain in service. The problem with the fleet now, St. Lucia maintains, is that many operators who bought 4000s on the cheap, after HawkerBeechcraft cratered and the model's resale values collapsed, didn't fully understand the ongoing financial requirements associated with maintaining the aircraft.

Perhaps. Or maybe they're just waiting for a hurricane. **BJT**

Beechcraft Hawker 4000 at a Glance

Price (new)	\$22.9 million
Passengers (typical)	8
Top cruising speed	489 ktas
Range*	3,177 nm
Cabin	Height: 6.0 ft
	Width: 6.5 ft
	Length: 25.0 ft

**maximum IFR range at long-range cruise with four passenger seats occupied*
Source: Conklin & de Decker

Visit BJTonline.com for a searchable aircraft guide that contains detailed performance, specifications, and expense data for this and all other popular business aircraft.

Mark Huber (mhuber@bjtonline.com), an aviation industry veteran, has reviewed aircraft for **BJT** since 2005.





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Treating your ‘get-there-itis’

It’s one of business aviation’s most dangerous conditions, but there are ways to prevent it.

by James Wynbrandt



Shortly after I arrived in Los Angeles last January for Heli-Expo, the world’s largest rotorcraft trade show, news flashed that Kobe Bryant was among the fatalities in a helicopter crash 50 miles away. At the Anaheim Convention Center, promotional tee shirts reading “Flight not going well?” on the front, and “Just land the damn helicopter!” on the back—part of event-sponsor Helicopter Association International’s “Land and Live” safety campaign—assumed new, heart-wrenching significance.

In the trade show’s opening keynote, FAA Administrator Stephen Dickson prefaced his prepared remarks by telling attendees, “Whatever the investigations ultimately determine, all of us in this room know that all too often helicopter accidents turn out to have been preventable.”

The same is true of fixed-wing accidents, and business aviation consumers must take an active role in understanding and mitigating the risks well before heading to the airport for a flight. That’s especially important in preventing plan-continuation bias—colloquially known in aviation as “get-there-itis”—from metastasizing into an accident.

Plan-continuation bias refers to the tendency to move ahead with a preset itinerary despite changing conditions, and its slippery slope is lubricated by pressures that are at the heart of business aviation’s appeal: it promises to get you somewhere on your schedule. You invest a lot to ensure you have that capability, and providers have an excellent track

record of delivering. Passengers, pilots, the charter operator or management company—all want to complete the mission.

Operational trip levers should be in place to stop flights from leaving the ground in unsafe situations. But it’s a rare day when a well-equipped business aircraft is precluded from taking off. Proceeding in questionable or unsafe conditions is where continuation bias kicks in, with potentially fatal consequences. What procedures does your lift provider have in place to make sure that won’t happen? And how does the provider know that those procedures are being followed?

You need to determine the answers. A sound safety program that counters plan-continuation bias will mitigate the full range of factors that most affect risk levels: standard procedures; pilot training and currency; the aircraft; and most critically, the flight provider’s safety culture.

Safety (not simply a lack of accidents) requires “a community where there’s no pressure to go and where there won’t be any punitive outcomes if a pilot says no” to a flight, notes Bryan Burns, president of the Air Charter Safety Foundation. “It’s a top-to-bottom culture, and internal decision-making happens way before the flight departs.”

But, he adds, “We’re always concerned about who’s really making the final go-or-no-go call. In many cases, a user may have influence over the operator; the [customer’s] position and high profile

does weigh on the decision-making process.”

Though safety is universally acknowledged to be the foundation of every aviation operation, investigations of many preventable accidents reveal that it is sometimes given lip service, at best. If you shop for access by price, you’re probably willing to fly on an aircraft with a worn interior or a platform from the previous century, but you’re likely not factoring a reduced safety margin into your savings. Yet safety costs money, and that’s an expense that is—or is not—represented somewhere in the price.

Alarmed at charter accident rates (*see box*) and causes in recent years, the National Transportation Safety Board has put improving Part 135 operations on its list of most-wanted safety-related goals, and its unheeded recommendations to the FAA can help guide your safety evaluation. The NTSB wants every charter operator to have a safety management system (SMS), flight-data-monitoring capability, and controlled-flight-into-terrain-avoidance equipment. Most charter and Part 91 operators lack all of this.

The FAA requires Part 121 operators (scheduled air carriers) to have a formal SMS. These programs elevate safety to the same priority level as the company’s core business processes. The European Union Aviation Safety Agency currently mandates them for Part 135 (charter) operators, and many expect the FAA to ultimately follow suit. But a Part 121 SMS can run hundreds of pages, and no standard condensed version for private aviation exists.

The National Business Aviation Association

believes an SMS should be “scalable,” and thus adaptable to a wide range of operators, says Doug Carr, the organization’s vice president of regulatory and international affairs. “But what is the minimum set of requirements for SMS? We can’t answer.”

Nonetheless, the NBAA has an 18-page Light Business Aircraft Airplane Flight Operations Manual Template, which any operator can use to create an SMS geared to its operations. The document can also serve as a good outline of safety issues that passengers should be aware of.

Meanwhile, a growing number of organizations are appointing “safety officers,” says Mark Millam, a Flight Safety Foundation vice president. But he notes that no standard accreditation program for business aviation safety officers exists. The FSF and the NBAA are exploring development of such a program covering both Part 91 (non-commercial) and Part 135 operations.

In the meantime, “Do your homework and ask the right questions,” urges Burns, who suggests a few for charter customers. For example, ask for the operator’s FAA DO85, a document listing the company’s aircraft approved for private jet charter services. Ask whether the operator has had any accidents or reportable incidents, or FAA enforcement or letters of correction in recent years.

If the answer is yes, get the details. Ask about the company’s hull and liability insurance, and keep in mind that underwriters don’t write nine-figure policies—the range major operators often carry—without checking on the insured company’s operations, to reduce the insurer’s own risk of a big payout.

If you own an aircraft, you likely already have this mitigation expertise readily available. Major insurers offer free consultation services as well as discounts on additional safety services and coverage—for example, USAIG Safety Services and Global Aerospace’s SM4 Safety Program.

Unfortunately, “a lot of [policyholders] don’t take them up on it,” says Stuart Hope, founder of private aviation insurance specialist Hope Aviation Insurance. “[Most] just keep on trucking and don’t bother.”

Not every operator wants, needs, or can afford an industry-recognized safety accreditation, but their standards can suggest adoptable guidelines that can mitigate get-there-itis in any operation.

Requirements for Wyvern Wingman Standard operators, for example, include mandating that their pilots utilize a company-sanctioned Flight Risk Assessment Tool or similar method “to quantify the safety risks related to the flight for go/no-go decision

making,” says Wyvern Consulting CEO Sonnie Bates. “Specific risks, such as marginal weather, air-traffic-control congestion, and terrain are all typical considerations in professionally designed Flight Risk Assessment Tools.”

If you travel on an aircraft your company operates, ask the flight-department director, chief pilot, or other rep about operating procedures, dispatch decisions, crew training, and other flight-safety issues. Does the aircraft fly to destinations that can be challenging because of terrain, weather, or other factors? Does the flight department have buy-in from senior management on safety standards? The conversation could ease your mind, as many flight departments take a proactive approach to safety.

If you own an aircraft, what conversation have you had with your pilots about operational limits? What pressures might they feel? How challenging are your operations?

If you charter, lease, or use a jet card, don’t leave safety vetting responsibilities to your security team. “People who perform executive protection may look at an airport where you’re taking off to see whether securing the facility is a problem,” says Steven Amitay, executive director of the National Association of Security Companies. “But I don’t think many security professionals are qualified to determine whether it’s safe getting in a helicopter on a windy day.”

Owner/pilots already have access to a wealth of information and advice on setting self-imposed minimums that may be above standard requirements. But have you committed them to writing in a procedures document so they mean something when it counts, and have you communicated them to those you fly with? Your passengers may be reluctant to ask safety-related questions—especially if they’re employees of your company. If they were to ask about weather minimums, fuel requirements, contingency plans, and how you monitor your fatigue level when you all climb onboard for the trip home after a long day, would the answers satisfy you, were the positions reversed?

Ask questions like these when selecting your provider or management company, establishing a flight department, or tapping corporate lift privileges, and you can be comfortable knowing the processes are in place to keep pressures and biases from compromising your safety. Due diligence may be out of sync with today’s one-click access ethos, but if you use business aviation, you should perform this evaluation as if your life depended on it.

BJT



Safety Programs Any Operator Can Employ

Two acronyms you may encounter are ASAP (Aviation Safety Action Program) and FOQA (flight operational quality assurance).

ASAP, a formal program involving the operator and the FAA, encourages voluntary employee reporting of safety issues—even those involving violations of Federal Aviation Regulations—in the interest of sharing critical safety information. It basically removes punitive enforcement actions to incentivize reporting.

FOQA is a digital program that provides detailed aircraft operational data and analysis tools that can detect safety issues. These programs are available to any operator. If your charter provider, management company, or flight department has a flight-data-monitoring program, you have the answer to how procedural compliance is verified—just confirm that the data is being properly analyzed and that identified deficiencies are being corrected.—J.W.



Recent Fatality Statistics

Per 100,000 flight hours, fatality rates in 2018 were 0.156 for Part 135 (charter) and 1.029 for general aviation. By contrast, fatalities for U.S. airliners were 0.011 per 100,000 flights that year after a multiyear run of zeros. (The average domestic flight was 996 miles, or about three hours.)—J.W.



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BOOK OF LISTS


Welcome to **BJT**'s 9th annual collection of facts, opinions, and trivia about travel, restaurants, aviation, and more. Visit **BJT**online.com for a version of this feature that includes links to related websites.

11 Quirky Roadside Attractions

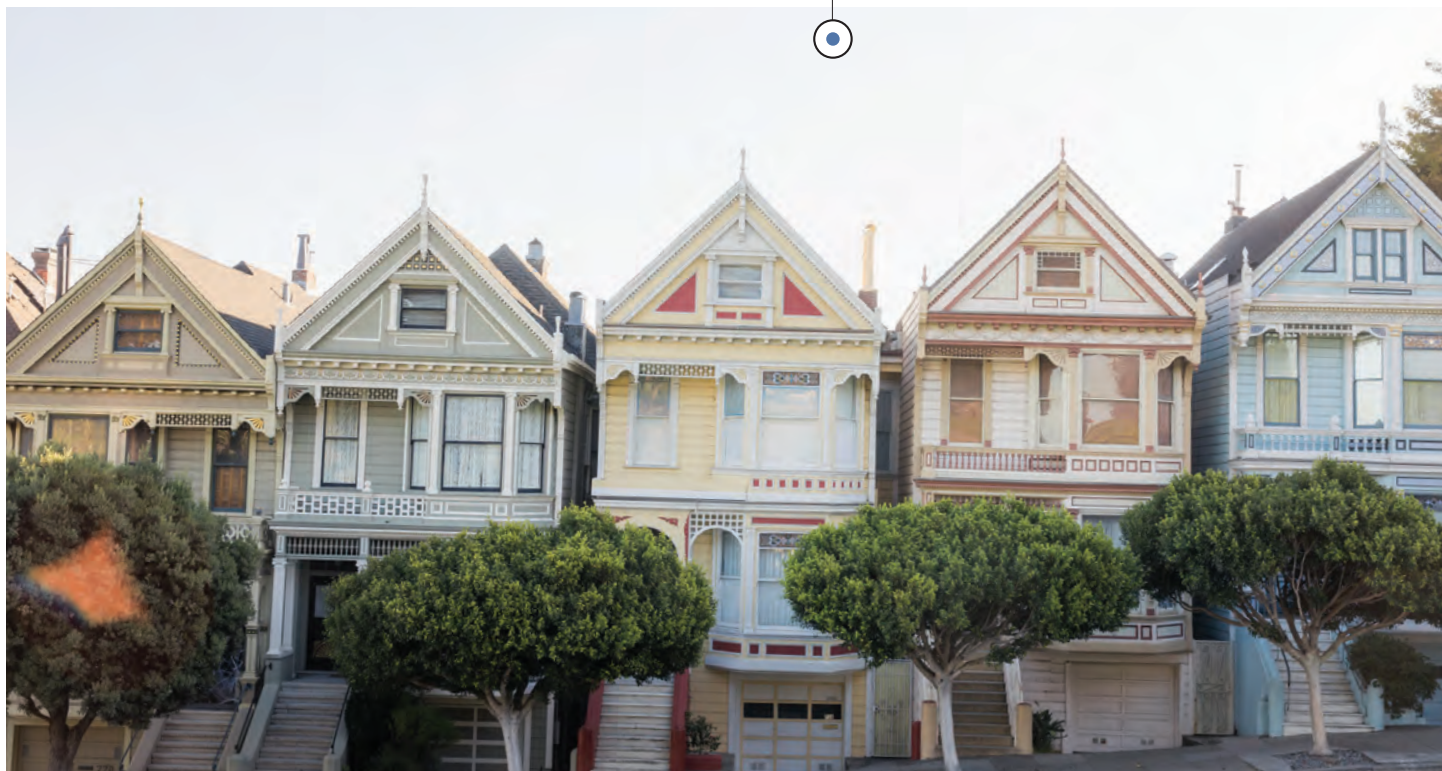
- 1. Louisville Slugger Big Bat**, Louisville, Kentucky. A 120-foot replica of Babe Ruth's baseball bat enhances the front of the Louisville Slugger Museum and Factory.
- 2. Cadillac Ranch**, Amarillo, Texas. Spray-painted upside-down Cadillacs are planted along Highway 40.
- 3. World's Largest Buffalo**, Jamestown, North Dakota. This 26-foot-tall, 46-foot-long metal and cement statue weighs 60 tons—the equivalent of 60 large buffalo.
- 4. Flintstones Bedrock City**, Williams, Arizona. This recreation features Fred Flintstone's stone car and diner, Wilma's laundry, and Barney's grocery.
- 5. Big Josh**, Joshua Tree, California. A giant bearded fiberglass cowboy greets visitors on their way to Joshua Tree National Park.
- 6. Carhenge**, Alliance, Nebraska. Vintage American automobiles are painted gray and arranged to look like England's Stonehenge.
- 7. Paul Bunyan**, Bangor, Maine. A 31-foot-tall statue celebrates the birthplace of the lumber industry and Paul Bunyan.
- 8. Paul Bunyan**, Akeley, Minnesota. You can perch for a selfie in the mighty palm of this Bunyan statue, the world's largest.
- 9. Superman Square**, Metropolis, Illinois. You won't need X-ray vision to see this 15-foot-tall statue of the superhero.
- 10. Catoosa Blue Whale**, Catoosa, Oklahoma. Drive along Route 66 until you find a large cement whale afloat in a small pond, and then walk through its belly.
- 11. Betsy, World's Largest Lobster**, Islamorada, Florida. Big Betsy, a symbol of Florida Keys wildlife, welcomes motorists on A1A.

—Debi Lander

10 of Travel Writer Margie Goldsmith's Favorite U.S. Cities

- 
- 1. San Francisco.** Drop-dead views, delicious food, soothing foghorns.
 - 2. New York.** Theatre, museums, nightlife, restaurants galore.
 - 3. Austin, Texas.** Funky charm, nonstop music, yummy food trucks.
 - 4. New Orleans.** An endless party of music, parades, and Southern cookin'.
 - 5. Scottsdale, Arizona.** Gorgeous desert, outstanding museums, foodie heaven.
 - 6. Chicago.** River cruises, unique architecture, deep-dish pizza.
 - 7. Charleston, South Carolina.** Great walking city, plantations, Southern charm.
 - 8. Durham, North Carolina.** Endless barbecue, gorgeous gardens, Duke University.
 - 9. Boulder, Colorado.** Magnificent hiking and biking trails, friendliest people.
 - 10. Clarksdale, Mississippi.** Funkiest birthplace of the blues with live music nightly.

—Margie Goldsmith



9 Cabin-worthy Wines

You can lose an estimated 10 percent of your sense of taste aboard pressurized aircraft, due to low humidity and cabin altitude, a key consideration when selecting wine for a flight. These expert* picks meet the challenge.

- 1. 2015 Chateau Garraud Lalande de Pomerol** (\$30). Dense and meaty on the palate, this dark garnet Bordeaux is open on the nose with black cherries and well-integrated oak flavors, and a long, warm finish. (JD)
- 2. 2017 Ridge Pagani Ranch Zinfandel** (\$37). Off-the-charts flavor intensity and depth, with striking perfume, voluptuous fruit, and magnificent balance. (AD)
- 3. 2016 Snowden Cabernet Sauvignon The Ranch** (\$50). Powerful and beautifully structured, this is a wine with gravitas, character, and balance. (AD)
- 4. 2014 Baigorri de Garage (Rioja)** (\$56). The cellar's signature wine is an homage to "garagistes" who create a new-style rioja from longstanding traditions, featuring grapes from its oldest vineyards, some over 100 years old. (JD)
- 5. Château Pape Clément** (\$120). Striking flavors of raspberry, chocolate, and leather are extracted at a higher altitude, where this Bordeaux's concentrated flavor and aroma profile perform best. (VWC)
- 6. 2016 Raymond Cabernet Sauvignon Generations** (\$135). Full-bodied richness, a sensational sense of opulence with no weight, ripe tannins, and incredible bouquet intermixed with spice and earthy minerality infuse this Cab. (AD)
- 7. 2017 Domaine Trouillet Pouilly Fuisse Coeur de Pouilly** (\$45). This wood-aged white wine from select parcels is textured and lined with minerality, while ripe yellow fruits are very present and developing well. (JD)
- 8. Gaja Rossj Bass Chardonnay** (\$120). Its combination of taste and smell, foundation of good acidity, and fresh and lingering finish work well in a pressurized cabin to create a rich flavor profile. (VWC)
- 9. Ruinart Champagnes** (\$70 and up). Sparkling wines contain 30 percent more aromas when the bubbles are released at a high altitude, and Ruinart Champagnes are elegant, pure, and infused with aromatic flavors. (VWC)

*Air Culinaire's John Detloff (JD), Sokolin's Aaron Diodato (AD), VistaJet Wine Club (VWC)

—James Wynbrandt



10 European Composer Residences Worth a Visit

- 1. Beethoven-Haus**, Bonn, Germany. It's now a museum that contains his last piano.
- 2. Cartuja**, Valldemossa, Majorca, Spain. The monastery where Frederic Chopin lived briefly with George Sand.
- 3. Elgar Birthplace Museum**, Worcester, England. The cottage where Edward Elgar was born showcases his music manuscripts, letters, and possessions.
- 4. Trolldhaugen Museum**, Bergen, Norway. Edvard Grieg's beautiful house and composing hut.
- 5. The Liszt Museum**, Budapest, Hungary. Franz Liszt's apartment near the Hungarian State Opera.
- 6. Composing Hut of Gustav Mahler**, Maiernigg, Austria. A small museum includes sheet music, letters, and a library.
- 7. Mozarthaus**, Vienna. The so-called "Figaro house" is where Mozart and Haydn played together.
- 8. Ainola**, Jarvenpaa, Finland. Jean Sibelius's residence for 53 years is now a museum.
- 9. Villa Verdi**, Piacenza, Italy. Giuseppe Verdi's home—on the via Verdi!
- 10. Richard Wagner Museum**, Bayreuth, Germany. The 19th century composer is buried in the backyard.

—Jeff Wieand

10 Best Beach Towns

- 1. Laguna Beach, California.** Scenically spectacular and blessed with flower-covered clifftops, serpentine canyons, dramatic rock arches, and hidden coves, this laidback Orange County surfer town has lured artists and beachcombers for more than a century.
- 2. Miami Beach, Florida.** Set on a skinny barrier island across Biscayne Bay from Miami proper, Miami Beach enjoys the world's richest trove of art deco and midcentury resort architecture, all convenient to one of the planet's finest white-sand urban beaches.
- 3. Positano, Italy.** At once a chic global resort town and a charming fishing village, Positano is a jewel of the Amalfi Coast, rising steeply from the popular, pebbly beach like a bowl of splendidly colored hotels and villas.
- 4. Sitges, Spain.** This coastal town southwest of Barcelona appeared on the global tourism map 50 years ago as a creative, countercultural hotspot and today draws crowds to its annual film festival, boutique-lined lanes, and beachfront dining terraces.
- 5. Villefranche-sur-Mer, France.** Set along a stretch of the Cote d'Azur that can seem overbuilt in places, this compact, pastel fishing village—with its line of cafes on the seafront and kids jumping from rocks—oozes character, like a scene from an earthy postwar film.
- 6. La Jolla, California.** Arguably the most European-like Southern California beach town, this ritzy San Diego enclave is noted for its glass-fronted restaurants that overlook a stunning coastline of coves, caves, kayakers, and seals sunning themselves on the sand.
- 7. Carmel, California.** Heavily wooded residential streets rise and fall in this arty, community-minded city where Ocean Avenue, the gallery- and eatery-lined “Main Street,” terminates in a glorious, dune-laden beach with startling views of Pebble Beach and the Monterey Peninsula.
- 8. Zihuatanejo, Mexico.** Water jetpackers and waterskiers enliven the protected and picturesque bay that pulls in and out of Zihua's hotel-lined crescent beach and the edge of its rustic colonial square—a cute, casual spot for authentic guacamole, tacos, and beer.
- 9. Provincetown, Massachusetts.** No other town in the U.S. can lay claim to the special alchemy of Cape Cod's eccentric P-town, where pedestrians, cars, and bikes throng Commercial Street in a colorful parade of diverse humanity that lasts all day and into the music-filled night.
- 10. Bar Harbor, Maine.** Mt. Desert Island's immaculate seaside town, which boasts the best of New England and the best of Americana, offers fantastic local lobster, just-picked blueberries, and handmade confections—plus an old-timey view of tall-mast ships.

—Drew Limsky

8 Greatest WWII Allied Fighter Planes

- 1. Grumman F6F “Hellcat.”** Shot down over 5,000 enemy aircraft.
- 2. Hawker Hurricane Mk II.** Deployed against German tanks in North Africa.
- 3. P-38 Lightning.** Two-engine U.S. fighter with twin booms.
- 4. P-47 Thunderbolt H.** Also refitted as a bomber.
- 5. P51D Mustang.** Great U.S. bomber escort at end of war.
- 6. Supermarine Spitfire.** The plane that won the Battle of Britain.
- 7. Vought F4U Corsair.** Japanese called it “Whistling Death.”
- 8. Yakovlev Yak-3.** Small, light, excellent Russian fighter.

—Jeff Wieand





8 Best San Francisco Streets

- 1. Macondray Lane.** Cited by *Tales of the City* author Armistead Maupin as the inspiration for “Barbary Lane,” this leafy pedestrian walkway, accessible via wooden staircases off Taylor Street, epitomizes the charm of the Russian Hill residential neighborhood.
- 2. Lombard Street.** The famous one-block stretch between Leavenworth and Hyde streets, originally planned to smooth out a steep Russian Hill grade, is known for its eight hairpin turns that twist, improbably and whimsically, past the living room windows of homeowners.
- 3. Castro Street.** Anchoring the Castro neighborhood, one of the world’s most famous gay destinations, this street delights visitors of all persuasions with its one-of-a-kind shops, colorfully painted Victorians, and a nearly century-old movie house.
- 4. Steiner Street.** Lined with beautiful homes (including the turreted affair featured in the film *Mrs. Doubtfire*), Steiner Street owes its fame to its much-photographed “painted ladies”: a row of brightly hued Victorian houses on the edge of Alamo Square.
- 5. Columbus Avenue.** This broad street in North Beach—San Francisco’s Little Italy—is both iconic (for its incomparable view of the Transamerica Pyramid) and quaintly human-scale (replete with coffeehouses, Italian restaurants, and the landmark City Lights Bookstore).
- 6. Grant Avenue.** The ornate green Dragon Gate (at Bush Street) marks the entrance to San Francisco’s Chinatown, and what is said to be the city’s oldest street is lined with red lanterns, dim sum joints, shop after shop of crafts, and storefronts offering traditional Chinese medicine.
- 7. 24th Street.** Attractive to both homeowners and visitors for its warm, sunny microclimate, the Noe Valley neighborhood is an upscale fantasy stretch of fashionable boutiques, bakeries, cheese shops, and home décor.
- 8. California Street.** Descending this long and commanding street’s mighty hills, which lead to the Bay Bridge, you’ll get a sense of the city’s architectural grandeur and topography.

—Drew Limsky

6 Captivating Statues

- 1. The Mustangs of Las Colinas,** Irving, Texas. Robert Glen’s herd of bronze horses create an astounding impression of movement as they appear to run through a river.
- 2. Halo,** Sydney, Australia. Jennifer Turpin and Michaelie Crawford conceived this kinetic sculpture—a large yellow ring attached to an arm that pivots on a pole whose speed and direction the wind determines.
- 3. Nelson Mandela,** Howick, South Africa. When viewed from one particular angle, 50 thin steel columns of this clever sculpture by Marco Cianfanelli and Jeremy Rose line up to create a portrait of South Africa’s former president.
- 4. Rain Man,** Florence, Italy. Jean-Michel Folon’s bronze sculpture of a man holding an umbrella handle features a fountain of water that creates the dome of the umbrella and the rain.
- 5. Ali and Nino,** Batumi, Georgia. Tamara Kvesitadz’s eight-meter-tall figures of a woman and man move on their own orbits and merge briefly before separating again.
- 6. Another Place,** Crosby Beach, Sefton, U.K. One hundred iron figures, cast from sculptor Antony Gormley’s body, stand scattered at various depths and distances across a three-kilometer stretch of beach.

—Narina Exelby

15 Often-Heard Yiddish Words

- 1. bissel/bissela.** A little bit.
- 2. bubkis** (bup-kiss). Nothing at all.
- 3. chutzpah** (khoots-pah). Nerve, brazen gall.
- 4. gonif** (gah-niff). A thief, a dishonest person.
- 5. kibitz.** Unwelcome advice, especially during a card game.
- 6. mavin** (may-vin). An expert, connoisseur.
- 7. megillah.** Overly complicated and boring.
- 8. mensch.** An upright, decent person.
- 9. meshuga** (meh-shu-gah). Crazy.
- 10. naches** (nokh-ess). Proud pleasure or joy.
- 11. nosh.** A tidbit (n), to have a bite (v).
- 12. schmaltz.** Overwrought, sentimental.
- 13. shtup.** To have sexual intercourse with.
- 14. schlep.** To drag along.
- 15. tsuris** (tsoo-riss). Troubles, woe, suffering.

—Joe Sharkey



5 Restaurants Recommended by Michelin-rated Chefs

1. **Quintonil**, Mexico City. “The cuisine pays homage to traditional Mexican cooking, ingredients, and techniques while modernizing and exploring in a thoughtful, delicious way.” —Kyle Connaughton, SingleThread Farms, Healdsburg, California
 2. **Central**, Lima, Peru. “You can’t find chef Virgilio and his team’s discoveries anywhere else.” —Namee Shinobu, L’Effervescence, Tokyo
 3. **Restaurant Simon Taxacher**, Tyrol, Austria. “Simon Taxacher’s French Mediterranean cooking with regional influences exudes individuality and courage.” —Juan Amador, Restaurant Amador, Vienna
 4. **Toqué!**, Quebec, Canada. “Toqué! produce amazing pork, cheese, vegetables, and foraged wild bushes.” —Daniel Boulud, Daniel, New York
 5. **Raymond’s**, St. John’s, Newfoundland, Canada. “Everything they make is unique to the region.” —Nicole Krasinski, The Progress and State Bird Provisions, San Francisco
- Gemma Z. Price



8 Evocative Southeast Asian Colonial-era Hotels That You Can Still Visit

1. **Mandarin Oriental**, Bangkok, Thailand. The Author’s Wing is the only remaining part of the original hotel, which opened in 1876.
2. **Hotel Continental Saigon**, Vietnam. Built in 1880, it is said to be the oldest hotel in the country.
3. **Raffles**, Singapore. Established by the esteemed Sarkies brothers as a 10-room hotel in 1887, this newly refurbished 117-suite property is arguably the most iconic colonial-era hotel in the region.
4. **Eastern and Oriental Hotel**, Georgetown, Malaysia. This is an amalgamation of the famous Sarkies brothers’ first two hotels, which were established in 1884 and 1889.
5. **The Strand**, Yangon, Myanmar. This was one of the most luxurious hotels in the British Empire when it opened in 1901.
6. **Sofitel Legend Metropole Hanoi**, Vietnam. This elegant French colonial-style establishment, which opened in 1901, is where Graham Greene wrote *The Quiet American* and Somerset Maugham wrote *The Gentleman in the Parlour*.
7. **Hotel Majapahit**, Surabaya, East Java. Founded in 1910 as Hotel Oranje, this elegant hotel has become a historic landmark.
8. **Hotel Majestic**, Kuala Lumpur, Malaysia. Built in 1932, this establishment offers a delightful combination of neo-classical and art deco styles.

—Narina Exelby



7 Unique Aircraft Conversions

- 1. HK-3133X Boeing 727 to vacation retreat,** Quepos, Costa Rica. Overlooking the Pacific from its jungle hillside perch, the former Columbian Avianca airliner is now a two-bedroom suite at Hotel Costa Verde, its interior finished in locally sourced hardwoods.
- 2. Boeing 307 Stratoliner to houseboat,** Lakeland, Florida. Sporting an executive interior by industrial-design pioneer Raymond Loewy, Howard Hughes's Stratoliner was converted into a houseboat in the 1970s (dubbed "the Cosmic Muffin" by singer Jimmy Buffett) and donated to the Florida Air Museum in 2016.
- 3. RNZAF NZ3556 Douglas DC-3/C-47B-Dk to café,** Mangaweka, New Zealand. Gear down, feet above the roadside, the former Royal New Zealand Air Force and National Airways Corporation transport, retired in 1981, is now the landmark Cookie Time Café whose exterior is painted in a chocolate-chip-cookie motif.
- 4. Boeing 747-212B to budget hotel,** Stockholm, Sweden. Last flown by Transjet, a now-bankrupt airline, the reconfigured transport offers 33 rooms at Arlanda Airport, including a cockpit suite and small quarters in each of the four engine nacelles.
- 5. Boeing 747 to showplace residence,** Malibu, California. Architect David Hertz retrieved one of Pan Am's first 747s from a boneyard to build a client's 5,000-square-foot luxury home, entirely roofed with the aircraft's wings and horizontal stabilizer.
- 6. Iterflug Ilyushin Il-18 to hotel suite,** Teuge, the Netherlands. This ex-East German airline transport was first operated by the government to ferry specially bred DDR German shepherds and is now a luxury hotel suite, complete with Jacuzzi and infrared sauna, at Teuge International Airport.
- 7. Lockheed L-1039 Super Constellation to cocktail lounge,** Pennel, Pennsylvania. This Connie took a retirement job as cocktail lounge for the popular Constellation Restaurant until the late 1990s, when it was donated to the Air Mobility Command Museum at Dover Air Force Base, where it is displayed in Military Air Transport Service livery.

—James Wynbrandt



7 Unusual Wine-tasting Experiences

- 1. Sottomarino Winery,** Treasure Island, San Francisco. The wine-tasting room is a World War II submarine-like training "vessel."
- 2. Franschoek Wine Tram,** Franschoek, South Africa. Eight hop-on, hop-off routes link various vineyards in South Africa's spectacular Franschoek Wine Valley.
- 3. Les Caves Du Louvre,** Paris. The 18th century wine cellars once used by King Louis XV's sommelier are open to the public for tours and wine tastings.
- 4. Marisa Cuomo Winery.** Tours offer the opportunity to visit some of the dramatic, steep vineyards that overlook hidden coves along Italy's Amalfi Coast.
- 5. Wine Tourism Spain.** A five-day self-guided walking route (with wine tastings) takes you through the pretty villages and vineyards of northern Spain's Rioja region.
- 6. Esona Boutique Wine Estate,** Robertson Valley, South Africa. Some tastings are held in underground concrete storage tanks that were once lined with beeswax to prevent the sweet wine from leaking out.
- 7. Viña Santacruz,** Colchagua, Chile. Take a short cable-car ride over the vineyards and up to a museum that delves into the influences ancient cultures have on winemaking.

—Narina Exelby

5 Places to Go Glamping

- 1. Under Canvas Grand Canyon,** Valle, Arizona. Enjoy stunning desert skies—night and day—among the piñons and junipers, 25 miles from the famous South Rim.
- 2. Treebones Resort,** Big Sur, California. Watch the sun set over the Pacific from the redwood deck of your Mongolian-style yurt, overlooking the spectacular Big Sur Coast.
- 3. Collective Vail Retreats,** Wolcott, Colorado. Safari-style tents, 20 miles from Vail, are equipped with king beds, electricity, attached private bathrooms, and decks.
- 4. Sandy Pines,** Kennebunkport, Maine. Choose from a wildly imaginative collection of luxury air-conditioned tents.
- 5. The Resort at Paws Up,** Greenough, Montana. "Nature served on a silver platter" is how this operator fancies its extensive year-round family schedule of river rafting and fly fishing on the beautiful Big Blackfoot River.

—Thomas R. Pero



9 U.S. Restaurants with Top Ratings from Both Michelin and Fodor's

1. **Alinea***, Chicago. The Windy City's highest-rated restaurant features modern American cuisine and a seasonally driven tasting menu of 18 to 22 courses.
2. **Atelier Crenn**, San Francisco. This establishment presents contemporary French cuisine and a menu that describes its multicourse meals through expressive poetry.
3. **Benu***, San Francisco. This carbon-neutral restaurant features a fixed menu of seafood and vegetables, plus a few meat courses.
4. **The Restaurant at Meadowood**, St. Helena, California. This Napa Valley establishment serves American cuisine in a formal dining room as well as poolside and picnic service in beautiful natural surroundings.
5. **The French Laundry**, Yountville, California. Located in a stone and timber building that was constructed as a saloon in 1900, this Napa Valley restaurant offers a menu of classic French cuisine that changes daily.
6. **SingleThread Farm Restaurant***, Healdsburg, California. In addition to the restaurant, which has an 11-course tasting menu, the Sonoma Valley property includes an award-winning inn.
7. **Eleven Madison Park***, New York. Located in the heart of Manhattan overlooking Madison Square Park, this restaurant offers an eight- to 10-course menu in its main dining room and an abbreviated meal in the bar.
8. **Le Bernardin***, New York. This French seafood restaurant and lounge presents elegant meals, including Ossetra caviar, Dungeness crab, lobster tail, and black bass.
9. **Per Se***, New York. This Big Apple interpretation of the French Laundry (see No. 5) features three tasting menus daily: five- and nine-course chef's menus and a nine-course vegetable menu.

**also top-rated by AAA*

—Marilyn Jones

5 Classic Cocktails That You Can Drink in the Places Where They Were Created

1. **Singapore sling**. The famous Long Bar at Singapore's Raffles hotel is where bartender Ngiam Tong Boon created this drink.
2. **Bloody Mary**. Ferdinand Petiot first made this cocktail at Harry's New York Bar in Paris in 1921.
3. **Mai tai**. Trader Vic's in San Francisco is the home of the original version of this rum, curacao, and fruit juice concoction.
4. **Sidecar**. The Ritz Paris claims to have given birth to this brandy-based cocktail in the early 1920s.
5. **Black Russian**. In 1949 Gustave Tops created this drink at the Hotel Metropole in Brussels, Belgium.

—Narina Exelby





8 Classic U.S. Train Rides

- 1. Adirondack Scenic Railroad.** Originally the Mohawk & Malone Railway (built in 1892), this New York line runs between Utica and Lake Placid through the restored forests and picturesque waterways of Adirondack State Park.
- 2. Alaska Railroad Coastal Classic.** This train departs Anchorage, winds along Turnagain Arm where the soaring glacial mountains of the Chugach Range plunge into the Pacific, and ends its journey at Seward and the Kenai Fjords.
- 3. Cape Cod Central Railroad.** This 27-mile ride from Hyannis, Massachusetts, to the Cape Cod Canal takes you through the historic colonial towns of Barnstable and Sandwich, with views of cranberry bogs, sand dunes, and salt marshes.
- 4. Cass Scenic Railroad.** Take in West Virginia's colorful autumn foliage on converted old logging flat cars on the same rail line that once hauled timber to the Cass lumber mill.
- 5. Cumbres & Toltec Scenic Railroad.** From New Mexico to Colorado's old silver mining region, this steam railroad is America's longest (64 miles) and highest (10,015 feet) and includes the parlor car featured in *Butch Cassidy and the Sundance Kid*.
- 6. Durango & Silverton Narrow Gauge Railroad.** This historic train—which appeared in the 1956 film *Around the World in 80 Days*—travels past breathtaking cliffs overlooking southern Colorado's rushing Animas River.
- 7. Grand Canyon Railway.** Arrive at the spectacular South Rim of Grand Canyon National Park in Arizona in antique rail cars pulled by the "French Fry Express," a 1923 locomotive fueled by recycled cooking oil.
- 8. Great Smoky Mountains Railroad.** This scenic journey begins at the historic depot at Bryson City, North Carolina, and runs 53 miles through beautiful Appalachian forest greenery and along trout streams.

—Thomas R. Pero

4 Inhospitable Destinations

- 1. Dome Argus, Antarctica.** At 4,000 meters high, this is Antarctica's coldest point with temperatures dropping to -136°F .
- 2. Furnace Creek, California.** This village holds world records for air and ground-surface temperatures: 134°F in 1913 and 201°F in 1972, respectively.
- 3. Challenger Deep, Pacific Ocean.** At 10,994 meters beneath the surface, this is the deepest part of Earth's oceans, with a pressure of 15,000 pounds per square inch.
- 4. North Sentinel Island, India.** The indigenous tribe here, which rejects any contact with outside civilization, shoots first and asks questions never of all wannabe visitors.

—Chris Allsop

5 Bestselling Video Games of All Time



- 1. Minecraft** (Mojang), 180 million copies. The game, which debuted in 2001, takes players through a blocky 3D world.
- 2. Grand Theft Auto V** (Rockstar Games), 120 million copies. Released in 2013, this single-player game follows three criminals and their attempts at auto theft.
- 3. Wii Sports** (Nintendo), 82 million copies. This sports video game was released in 2006.
- 4. PlayerUnknown's Battlegrounds** (PUBG), 60 million copies. This online multiplayer battle game debuted in 2017.
- 5. Super Mario Bros.** (Nintendo), 50 million copies. Released in 1985, this arcade game follows the antics of Mario and Luigi in the Mushroom Kingdom.

—Marilyn Jones

12 Great Camping Products

1. Thuraya X5-Touch satellite phone. This Android touchscreen phone, which sells for \$1,299 (plus data plan and accessories), works without cellular service.

2. Hilleberg Anaris ridge tent. This two-person, warm-weather \$595 shelter has linked inner and outer tents that pitch easily with trekking poles.

3. GoFish Cam underwater camera. This wireless \$150 device captures the action when you're fishing, snorkeling, or diving.

4. CampStove 2 Bundle CN. Packaged with a kettle pot and attachable grill, this \$230 camping stove also charges your cellphone.

5. Blaze 60 backpack. This \$269 backpack comes in three sizes, carries up to 50 pounds, and weighs just three pounds.

6. Mock One compact portable hammock. This folding \$150 hammock features a freestanding frame, carrying wrap, and sunshade.

7. Luminiser thermoelectric camping lamp. Forget propane tanks or batteries: this 15-ounce lantern converts heat into electricity.

8. BioLife headlamp. This ultralight, rechargeable product, which provides 100 lumens and four lighting modes, is perfect for running as well as camping.

9. Morrison Outdoors Little Mo sleeping bag. Designed for children aged six months to two years, this \$85 bag has high-loft synthetic insulation and weighs about one pound.

10. Sportsman Industries' Pocket Chainsaw. Slice through branches in under 10 seconds with this three-foot chainsaw, which comes with a magnesium fire starter.

11. EarthKind Stay Away Mosquitoes. This Deet-free insect repellent is water-resistant, lasts 14 hours, and is available in full- and travel-size bottles.

12. Pathwater water bottle. This reusable, recyclable, and lightweight aluminum water bottle offers an earth-friendly alternative to plastic containers.

—Margie Goldsmith



5. Lewis Ginter Botanical Garden, Richmond, Virginia. Fifty acres of themed gardens, including a Rose Garden and a Children's Garden, plus a conservatory.

6. Marie Selby Botanical Gardens, Sarasota, Florida. Two thousand plants, including orchids, bromeliads, gesneriads, and tropical flowers, as well as the world's most diverse collection of epiphytes.

7. Brookgreen Gardens, Murrells Inlet, South Carolina. Flowers, sculptures, and a zoo fill nearly 10,000 acres near Myrtle Beach.

8. Portland Japanese Garden, Portland, Oregon. One of America's most tranquil and authentic Japanese gardens with ponds, sand and stone gardens, and a tea garden.

9. San Francisco Botanical Garden, San Francisco. This living museum within Golden Gate Park showcases almost 9,000 kinds of plants from around the world.

10. Longwood Gardens, Kennett Square, Pennsylvania. Features 4,600 types of plants and trees on 1,100 interior and exterior acres.

11. U.S. Botanic Garden, Washington, D.C. Celebrating its 200th anniversary in 2020, this is the oldest continually operating public garden in the U.S.

12. Descanso Gardens, La Canada Flintridge, California. Featuring 160 acres of gardens, woodlands and chaparral, this Los Angeles-area property has one of the largest concentrations of camellia plants in the Western Hemisphere.

13. Brooklyn Botanic Garden, Brooklyn, New York. Founded in 1910, it attracts nearly a million visitors annually with its 14,000 species of plants.

—Margie Goldsmith

13 Best American Botanical Gardens

1. New York Botanical Garden, Bronx, New York. The largest in any city, this 250-acre, 500-garden wonder has one million plants, 30,000 trees, and a Victorian-era glasshouse.

2. Gibbs Gardens, Ball Ground, Georgia. Twenty magnificent gardens plus a magical forest, ponds, and dramatic waterfalls, spread over 220 acres.

3. Minnesota Landscape Arboretum, Chaska, Minnesota. The 1,200-acre property in a Minneapolis/St. Paul suburb offers display gardens, apple orchards, a Japanese garden, a maze, and miles of trails.

4. Desert Botanical Garden, Phoenix. Thousands of arid-land plants from around the world fill 140 acres.



5 of New York City's Best Little-Known Restaurants

1. **Beauty and Essex.** Exquisite American cuisine hidden at the back of a Lower East Side pawn shop.
2. **Il Divo.** This elegant Upper East Side gem has a 1920s feel with excellent, authentic Italian food.
3. **La Bergamote.** Cozy French café in Hell's Kitchen serving delicious simple meals and pastries.
4. **Hangawi.** Take off your shoes at this Midtown East romantic Korean vegetarian sanctuary.
5. **888 Café and Bar.** This sizzling new hotspot opposite Carnegie Hall serves delectable seafood and steaks.

—Margie Goldsmith

5 Airplanes Other than Beechcrafts, Cessnas, and Learjets That Were Built in Wichita, Kansas

1. **Laird Swallow.** This two-seat biplane, which debuted in the early 1920s, was the first mass-produced commercial airplane in the U.S.
2. **Culver Cadet.** This two-passenger-cabin airplane, designed by Albert Mooney, served as a target drone for the U.S. Army Air Corps and Navy in 1940 and 1941.
3. **Travel Air 2000.** Travel Air Manufacturing Co.—which Walter Beech, Lloyd Stearman, and Clyde Cessna founded in 1925—produced dozens of models in its four-year history, including this popular two-seat biplane.
4. **Stearman Kaydet.** This two-seat biplane was what brought Boeing to Wichita when it acquired Stearman Aircraft Co. in 1934.
5. **Boeing B-52 Stratofortress.** Boeing's Wichita division served as a second source of production for variants of this venerable Air Force jet bomber.

—Jerry Siebenmark

13 Best American Hotels for Live Music

1. **Overton Hotel,** Lubbock, Texas. Local musicians deliver country, blues, and alternative music five nights a week.
2. **Hutton Hotel,** Nashville, Tennessee. Nightly acoustic, soul, and electro-pop, plus songwriting studios and in-room Fender guitars on demand.
3. **Skirvin Hilton Hotel,** Oklahoma City, Oklahoma. Every other Friday, the historic hotel's restaurant turns into a swinging jazz club with world-class performers.
4. **Bristol Hotel,** Bristol, Virginia. Bluegrass acts perform in the restaurant and rooftop bar.
5. **The Foundry,** Asheville, North Carolina. Each Thursday evening, swing dancers flock to the lobby to dance to the hotel's orchestra.
6. **Hotel Zachary,** Chicago. At the bar every weekend, soulful singers belt it out right across from Wrigley Field.
7. **Bobby Hotel,** Nashville, Tennessee. Every evening, the restaurant at this hip hideaway offers country, indie, acoustic, or pop music.
8. **The Guesthouse at Graceland,** Memphis, Tennessee. In this hotel next to Elvis's home, performances take place in the lobby and 464-seat theater.
9. **The Langham Hotel,** Chicago. Classical performances make the weekend signature afternoon high tea experience even more of a pleasure.
10. **Grand Hotel Mackinac,** Mackinac Island, Michigan. Music all day every day, including a harpist at afternoon tea and dinner and the hotel's orchestra in the evening.
11. **The Elizabeth Hotel,** Fort Collins, Colorado. Two venues offer budding musicians, jammers, and big-name acts the opportunity to play jazz four times a week.
12. **W Hotel,** Seattle. At the bar on Fridays, local musicians play everything from alternative to classic rock.
13. **Lone Star Court,** Austin, Texas. Kick off your boots in this motor-court hotel, offering music acts four times a week—with a Texas twist, of course.

—Margie Goldsmith





6 “Old South” Plantation Homes You Can Visit

1. **Belle Meade Plantation**, Nashville, Tennessee. This 19th century mansion and former thoroughbred stud farm, to which champion racehorses Seabiscuit and Secretariat trace their lineage, offers themed tours, including the new “Bourbon at Belle Meade.”
2. **Boone Hall Plantation and Gardens**, Mt. Pleasant, South Carolina. Revered for its moss-draped Avenue of Oaks, grand Colonial-style manor and live presentation of the Gullah cultural heritage, Boone Hall dates to 1681 and is still a working farm.
3. **Houmas House Estate and Gardens**, Darrow, Louisiana. This former sugar plantation features a Greek Revival mansion situated among lush gardens and live oaks, and its expansive grounds include an inn, several restaurants, and the newly opened Great River Road Museum.
4. **Laura Plantation**, Vacherie, Louisiana. Louisiana’s best Creole heritage site offers guided tours of the French-country-style “Big House,” herb gardens, and slave quarters, with a profound look at life on the 1800s sugar plantation.
5. **Monmouth Historic Inn and Gardens**, Natchez, Mississippi. Once owned by cotton planter and Mississippi Governor John Quitman, the former “White House of Mississippi” is full of Civil War history and now is an inn featuring antebellum-era antiques and 26 picturesque acres to roam.
6. **Nottoway Plantation**, White Castle, Louisiana. Exquisite architecture in the Greek and Italianate style defines the South’s largest antebellum mansion, completed in 1859 on a sprawling sugarcane estate, now a posh resort near Baton Rouge.

—Ann Yungmeyer

5 Luxury Train Rides Outside the U.S. with Unbeatable Views

1. **Rocky Mountaineer**. Glass-dome coaches allow guests almost uninterrupted views of the majestic Canadian Rocky Mountains.
2. **The Ghan**. The train offers dramatic vistas of Australia’s vast Outback as it glides more than 1,200 miles across the continent, between Adelaide and Darwin.
3. **Golden Eagle Trans-Siberian Express**. Covering about 5,700 miles from Moscow to Vladivostok, the journey affords ever-changing views of the great Siberian steppe.
4. **The Belmond Royal Scotsman**. Its route twists and turns around the beautiful, wild rolling hills of Scotland.
5. **Rovos Rail**. A 15-day journey from Cape Town to Dar es Salaam traverses some of Southern Africa’s most classic landscapes.

—Narina Exelby

The latest in

CABIN FURNISHINGS

by Gemma Z. Price

Designers are offering everything from heated bathroom floors and oversized galleys to gyms and meditation spaces.

The trend continues toward expansive aircraft interiors that offer flexible zoning as well as comforts and functionality that mirror the home and office.

Bombardier's Global 7500, for example, won a Red Dot Design Award for a cabin scheme that incorporates a largest-in-class galley with exposed appliances for a home-kitchen feel and the industry's first dedicated stateroom with a fixed bed.

An Airbus Corporate Jets A350XWB project—

completed by Italy-based Pininfarina in partnership with AMAC Aerospace and delivered last year—features a central open space sculpted by a flowing band that leads to a clutch of sofas, a place for dining or meetings, and a chaise-lounge-furnished area. “The space was conceived to foster interaction among people using it,” says Marco Becucci, a senior architect at Pininfarina.

Design concepts increasingly emphasize customizable open areas. Lufthansa Technik's as-yet-unrealized SkyRetreat, unveiled last September,

encompasses three zones: a variable-sized utility area at the rear; an observation deck that extends the cabin into the aircraft's cockpit; and an open space that allows for communal lounging or the creation of private spaces.

Paris-based Pierrejean Vision's “Stop, let's breathe” open interiors manifesto treats the cabin as a “never-ending lounge,” anchored throughout its length by a double-helix-inspired, adjustable modular sofa equipped with small sliding tables, lamps, stowage, and shiatsu massage functionality. Inflatable flooring sections will double as pop-up seating. Within the open space, clients can choose the location of their galley, fixed stateroom, and spa shower (within areas certifiable for passenger accommodations); once installed, other “islands”—a conference room, dining corner, kids' rooms, meditation space—are freely located and can be customized to the purpose of each trip.

“The concept is like a white sheet of paper: draw, write, create your own environment, and make each flight a new story, your own story,” says the studio's chairman, Jacques Pierrejean.

Designers are helping to make passengers' adjustment to a new destination, climate, and time zone easier





Pininfarina



Embraer



Lufthansa

by lowering cabin pressures; offering more control over zonal heating, air conditioning, and humidity; and delivering larger windows with smart shades for customizable natural light. Bombardier has made windows in its Global 7500 fully 80 percent bigger than windows in comparably sized aircraft. Greenpoint Technologies' head of design, Annika Wicklund, is experimenting with various window groupings and shades of window tint, aiming to move beyond the traditional supplier-provided double VIP window with single ledge, which frames two windows together per passenger setting.

Gyms and spaces for yoga and meditation will soon be offered as standard on some bizliners. Last year at the European Business Aviation Conference & Exhibition (EBACE), U.K.-based Winch Design showed its Yoga Concept for the ACJneo or BBJ MAX, which features bamboo silk carpets, cork flooring, and vegan leathers. Pierrejean, meanwhile, is working with doctors to develop an on-board gym.

There's been a big uptick in the use of natural materials and tones, and of nature- and ecological-informed concepts, generally. Thinly planed stone veneers—which can be heated from beneath when

used as flooring—give the impression of luxurious granite or marble without the weight. Soft goods are trending in neutral colors, especially creams and grays, although Jacques Pierrejean says that he anticipates a shift toward more green and blue tones.

Lufthansa Technik's SkyRetreat concept features a minimalistic approach based on natural materials for a yacht-inspired "barefoot retreat" feel, while its Red Dot Award-winning Nature's Touch concept for narrow-body aircraft, presented at the Asian Business Aviation Conference & Exhibition in 2019, combines Confucianist and modern philosophy with Chinese aesthetic motifs.

"Textiles and subtle stripes simulating bamboo wood grain are complemented by natural materials such as marble, leather, wool, and silk," explains Lufthansa Technik's Wieland Timm. "The exuberant diversification of colors and textures expresses the vitality of nature."

Embraer's Praeterra concept for the Praetor 600, shortlisted for an International Yacht & Aviation Award, focuses on materials sourced from sustainable new growth, upcycling, and components intended to have a second life. Seat

coverings are crafted from bamboo and cotton composite, with wool and recycled materials from old employee uniforms. The team recycled ocean plastics to create a lens from which a "tree of life" inlay is illuminated on the aft bulkhead.

Interior lines and finishes are also trending toward the organic. Arched doorways and curved side ledges and armrests contribute to a soothing visual and spatial experience, as does hidden stowage, which keeps personal devices, other technology, and associated clutter out of sight.

Comlux's latest ACJ320neo delivery features slow-close and nesting lids and zero-vibration drawer slides. Gulfstream's G700, meanwhile, incorporates an autonomous table that deploys in 20 seconds, converting club and table seating to a six-place conference and dining space.

"Drawers that slide more easily, cabin doors that open and close in a more streamlined manner, device stowage systems that fold silently into side ledges, and tables that silently raise and lower are all in demand," says Shannon Gill, managing director of MSB Aerospace, which supplies customized, precision-engineered hi-lo tables for large aircraft.

Carbon-fiber veneers have filtered into business jet design from the automotive field, and composite veneers remain popular because of their weight-saving capability and uniformity in application and repair. Brian Barnett, at Collins Aerospace, says the composite veneers account for 40 percent of his business.

There's a trend back to all-natural materials for surfaces, too. This year, Barnett is offering clients a bundle from a 10,000-pound sumptuous bronzed-tone walnut burl from California's Sutter Mill, certified as the largest burl of its kind in the world. Other popular textures include matte and satin lacquers, matte-effect finishes on wood veneers, brushed metal fixtures, and metal effects.

Collins Aerospace, meanwhile, offers a metallic paint that can be layered over weight-saving, high-density foam or wood to look like an inlaid metal strip or to show grain. And Embraer's Praeterra



Greenpoint Technologies

concept includes surfaces made of composite recycled aluminum, copper, and nickel detailed via the Japanese mokume gane process (which translates to “wood grain metal”)

Business jet seats have seen big changes, with designers taking inspiration from residential, automotive, and hospitality seating to create designs that are more fluid, both in aesthetics and functionality.

Bombardier’s patented Nuage seat and chaise are set on fully floating bases for precision tracking and swiveling without visible floor rails. Flat, the chaise can accommodate three people; and it follows the contours of the body for lounging and sleeping.

Italian aircraft interior specialist Iacobucci HF Aerospace is integrating a chair by Pierrejean Vision—which features independently adjustable lumbar and shoulder-support architecture—into its portfolio.

Décor and soft furnishings also reference the at-home experience.

“More monuments with the illusion of freestanding furniture, carpets that are intricately cut to give the appearance of layered rugs, or paintings and decoration [are] directly incorporated into the fixed elements of the cabin,” says Grischa Schmidt, senior director of Jet Aviation’s interior design studio.

While deployment of composite surface covering historically focused on its lightweight, soundproofing qualities, there’s been a trend toward decorative use. New Orleans–based MSB Aerospace’s sound-dampening, high-density foam panel can be covered in materials of the owners’



Gulfstream

choice with bespoke patterns and text. Deconel, a foam-backed covering handmade in Texas, can be painted, embossed/debossed, 3D sculpted, beaded, embroidered, and inlaid. It also allows the integration of other materials, such as linen or hair-on cowhides, that would otherwise fail burn testing.

Galley design has always been tailored to clients’ cultural, religious, and service preferences—for instance, whether they engage a large staff or prefer one or two crewmembers and whether they wish to make their own food and drinks. The latest business jet dining fit-outs go further to extend clients’ on-ground lifestyles and are adaptable for conviviality when cooking, as well as for formal and informal dining.

Gulfstream’s G700 “ultragalley” has more than 10 feet of counter space, the most in the industry, to accommodate personal chefs, catering, and principals who enjoy cooking for friends and family

and want to plug in their own certified equipment.

Completion centers say demand for inserts to safely stow and display bespoke ceramics, china, glassware, and flatware has risen exponentially, as has interest in cocktail lounges. Winch Design has delivered full-service bars, complete with fridges, custom glass and backlit-bottle displays, stools, onyx bar tops, integrated backlit ice buckets, and TV screens, as well as inconspicuous credenzas that rise at the touch of a button to reveal favorite malt whiskies and custom glassware.

Business jet bathrooms are also starting to look like those in homes and hotels.

Gulfstream’s G700 master-bath option includes a stand-up shower with shower wand and a large bench. The master lavatory in Greenpoint Technologies’ BBJ 777X Lotus concept features adjustable oversized shower heads, heated floors, towel warmers, black marble vanities with curved vessel sinks and monitors embedded in the mirrors, and an accent wall with organic greenery.

While a bathtub remains out of the question, Jacques Pierrejean is experimenting with the use of pressured water jets within a waterproofed cubicle to create a spa-style massage experience. He’s also hoping to install up to three showers on a prospective Airbus A350 commission.

“Bathrooms are moving from being purely functional spaces to being part of the overall lifestyle and wellness concept of the interior,” says designer Greig Jolly of Winch Design. **BJT**



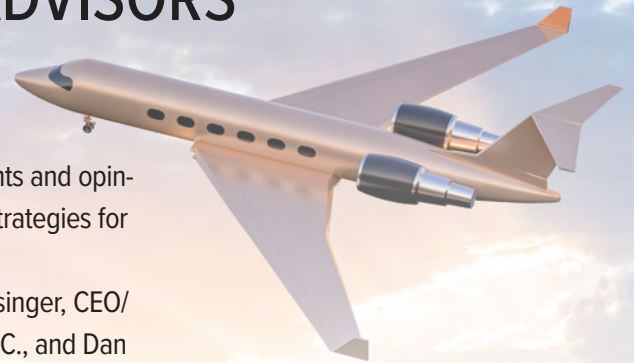
Winch Design

Gemma Z. Price (gprice@bjtonline.com), a frequent **BJT** contributor, has written for *Time*, *Condé Nast Traveler*, the *Wall Street Journal*, and many other publications.

October 6, 2020 • 1:30pm Eastern

SEPARATING FACT FROM FICTION

A BUSINESS AVIATION UPDATE FROM TRUSTED ADVISORS



Industry leaders on the front line of business aviation share their candid insights and opinions on the real state of the market, what we can expect through 2021, and strategies for managing during a crisis while targeting new business opportunities.

Matt Thurber, AIN's Editor-in-Chief, moderates this discussion with Jay Mesinger, CEO/President of Mesinger Jet Sales; Keith G. Swirsky, Esq., President, GKG Law, P.C., and Dan Drohan, Chairman/CEO, Solairus Aviation.



Dan Drohan,
Chairman/CEO, Solairus Aviation



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The latest in
**CABIN
TECH**

by Mark Huber

Upgraded connectivity equipment, heating and lighting enhancements, more sophisticated moving maps, and expanded entertainment options are all showing up in business jet cabins. Here's a look at some of the most auspicious products and technologies that have recently become available or are likely to be introduced soon.

SATELLITES THAT IMPROVE CONNECTIVITY

Companies are lining up to launch as many as 60,000 new-generation low-earth-orbit (LEO) satellites, which will provide global internet and communications coverage with far less signal delay than current satellites.

The new satellites will also result in lower costs than existing LEO systems like the popular Iridium, because they're more compact. New LEO satellites from OneWeb—whose backers include Sir Richard Branson—weigh just 320 pounds each, for example, about one fifth as much as currently orbiting Iridium satellites. Per-pound launch costs are expected to decrease from the present \$1,300 to just \$500, according to SpaceX founder Elon Musk.

Dozens of new-generation LEO satellites already are in orbit, and networks linking them

could be at least partially activated by 2021 and fully operational by 2022. The technology has attracted heavy hitters such as SpaceX's Starlink, Amazon, China's Aerospace Science and Industry Corporation, and the aforementioned OneWeb.

However, the economic viability of LEO technology was called into question when OneWeb filed for bankruptcy in March after launching 74 satellites. The company had hoped to put as many as 48,000 satellites in orbit and it has obtained some funding to continue development. Meanwhile, the U.S. Department of Defense, seeing the potential of LEO technology, has indicated that it may provide financial assistance to emerging LEO companies.

The low orbit necessitates the frequent handoff of signals between satellites to provide seamless coverage and demands more satellites. At least one provider plans to address the handoff problem with automatic switching via lasers. But to satisfy the

anticipated demand, companies will have to launch about eight times as many satellites as have been placed in Earth orbit since 1960.

Constellations of the latest LEO satellites promise fiber-optic-network-like speed at much lower cost. Tests on initial new-generation LEO satellites developed by Airbus have shown they can deliver speeds of over 400 megabits per second, latency of just 40 milliseconds, and seamless beam and satellite handovers—even over previously blacked-out regions such as the Arctic. For business aircraft, the main advantages concern antenna size, speed, and coverage area.

Manufacturers are developing aircraft antenna systems that can receive signals from these new LEO satellites. Satcom Direct, in partnership with Germany's QEST, is working on an electronically steered, fuselage-mounted phased-array antenna that will deliver high-speed connectivity for aircraft as small as light jets via the upcoming



Many companies are launching low-earth-orbit satellites, which offer improved airborne connectivity.

LEO constellations. Also working with QEST, the company recently unveiled SD Plane Simple, a tail-mounted satcom antenna for midsize to large business jets using Ku-band and Ka-band satellite systems that employ the same network-agnostic line-replaceable units and wiring.

Honeywell's Aspire 150 is designed to work with LEO satellites, including Iridium Next, via an embedded router to provide high-speed connectivity to midsize business aircraft and helicopters. Matched with Honeywell's optional Forge software—which can manage bandwidth, service, and usage—the equipment can allow operators to save up to \$100,000 per year, according to the company.

READY FOR 5G

Gogo is preparing to add 5G capability to its 4G Avance L5 air-to-ground communications system, which provides coverage over North America. Gogo's 4G network is already three times faster than its 3G network. Avance L5, in service in more than 900 aircraft, offers streaming internet content. Gogo 5G, to be introduced in 2021, incorporates licensed and unlicensed frequencies simultaneously—a feature that speeds up performance and increases redundancy. Gogo 5G will perform 10 times faster than

Avance L5



3G networks while adding more data throughput capacity. Avance L5 provides dual-band 802.11ac Wi-Fi and other features, all from a single box.

THE 'ONE BOX' SOLUTION

Interactive Mobility has launched the Flymingo "one box" streaming service. Passengers can access media and flight information directly from a local cloud on personal devices via one of three methods: Flymingo Box, a small server that deploys the streaming service; Flymingo Next, an embedded server; and Flymingo Connect, which features a portal integrated into existing infrastructure. Interactive says its solution is a practical alternative to systems that display over dedicated built-in screens and other devices. It also offers customers more flexibility and choices.

Flymingo



FEELING HOT, HOT, HOT

Aircraft cabins have traditionally had hot and cold spots. Now Germany's Lufthansa Technik has a solution it calls HeatNow, a system of "heater layers" that defeats cold spots. The HeatNow pad—which can be installed onto almost any floor panel, galley, or seating area—consists of a heater layer and two additional layers for protection. Connected

to 115V AC, the electro-conductive coating acts as a resistor and warms up. The temperature can be regulated on different levels, providing an even and homogeneous heated area.

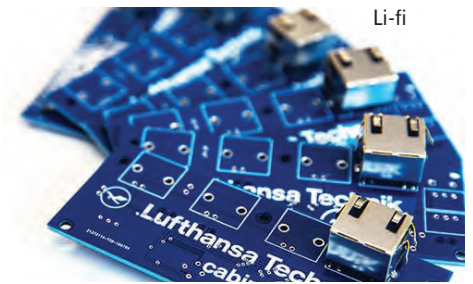


HeatNow

LIGHT IT UP

Leading aviation companies, including Airbus and Lufthansa Technik, are exploring the possibility of incorporating "li-fi" into aircraft cabins. Li-fi transmits data at very high speeds via "smart" LED lights that change intensity without interfering with radio signals. The data cannot pass through walls, which means that the technology is as secure as it is fast: up to five gigabits per second when used with RGB accent lighting. Conceivably, this will allow high-speed data streaming from a central databus to each lighting fixture on the aircraft, which would in turn connect to a passenger's personal device.

Li-fi



ALL THE WORLD'S A BIGGER 'STAGE'

Collins Aerospace's Stage on-demand, in-flight streaming service provides customers with a library of thousands of entertainment choices delivered wirelessly to their personal devices, including television shows, movies, sports feeds, and music. Now, a new wired option interfaces with the company's Venue cabin-management service to display choices on bulkhead monitors and individual seat displays and is available as an option on new aircraft. The company said that offering wireless and wired alternatives gives customers more flexibility.

ARE WE THERE YET?

Collins's Airshow ASXI high-definition moving maps provide terrain data and satellite and high-focus maps that display more points of interest than similar products. They also give passengers the ability to see the flight as it appears on the pilot's head-up cockpit display. The HD-SDI output connection provides smooth compatibility with HD and 4K monitors. Passengers have precise location information layered with data that includes flight stats and world clocks. The system can be combined with the Airshow mobile and HGML 5 browser application.



MOBILE WI-FI FOR HELICOPTERS

The vexing problem of connecting helicopters to 3G/4G networks appears to have been solved. The European Union Aviation Safety Agency (EASA) has approved Germany-based ESG's 3G/4G mobile communications and cabin Wi-Fi for Airbus EC135 and EC635 helicopters. The approval covers installation of a cabin Wi-Fi hotspot with 3G/4G cellular modem and outside antennas.

ESG software installed on a Wi-Fi router on the helicopter enables secure internet access that can be customized to accommodate many applications, including protected transmission of police data, real-time communication of sensitive patient information for medevac operations, secure private communications, and infotainment in helicopter shuttles. ESG said the EASA approval "allows for a comparatively fast transfer to other helicopter types." **BJT**

Mark Huber (mhuber@bjtonline.com), an aviation industry veteran, has reviewed aircraft for **BJT** since 2005.

INNOVATIVE PRODUCTS ADDRESS COVID CONCERNS

The COVID-19 pandemic has increased the importance of cabin technology designed to combat pathogens.

Aviation Clean Air has teamed with International Aero Engineering to create a portable, ground-use-only ionization purification system to disinfect aircraft interiors. Building on ACA's airborne system, the portable unit purifies air and surfaces by flooding the aircraft with electronically created, pathogen-killing ions. The unit—which draws power from a standard 110-volt outlet—can disinfect a cabin in under two hours.

Laboratory tests have shown that the technology employed by both ACA's airborne and ground units neutralizes COVID-19 in conditions that replicate aircraft interiors. The tests have also demonstrated that neutralization begins immediately and that up to 99.4 percent of the virus is "inactivated" within 30 minutes.

Unlike the ground unit, ACA's airborne ionization purification system operates through an aircraft's existing environmental-control equipment. The purification system not only kills pathogens in the air and on surfaces but also eliminates odors.

Both the ground and air systems use proprietary technology. They employ an electric charge to create a high concentration of positive and negative ions that travel through the air and seek out and attach to particles that then become larger and can be eliminated more rapidly. Positive and negative ions also have microbicidal effects on pathogens, ultimately reducing the infectivity of the virus. The ACA systems are maintenance-free and, unlike traditional bipolar ionization systems, do not produce harmful ozone as a byproduct.

Dimer's GermFalcon ultraviolet-light aircraft sanitizing system, meanwhile, will be marketed by aerospace-component giant Honeywell as the Honeywell UV Cabin System. Germicidal ultraviolet has been proven to eliminate viruses, including those that cause coronavirus, Ebola, and influenza.

The GermFalcon system is packed into a machine that's about as big as a beverage cart and can treat an aircraft the size of a narrow-body airliner in under 10 minutes for an estimated cost of less than \$10. The machine hosts a series of extendable UV-light arms that sweep over cabin surfaces.

Another new product, this one from GE Aviation, also addresses COVID-19 concerns. Called Health Application ID, it screens employees and passengers and clears objects on aircraft as disinfected. Passengers can use the system to view the cleaning history of their airplanes.

The technology, which is currently being demonstrated to potential customers, enables users to set test-result protocols and check compliance with new COVID-19 medical screening guidelines for employees and passengers. Test results and other information are encrypted. The system creates a protocol to embed passenger identity information and medical screening results into the boarding process in "a highly secure environment," according to GE.

—M.H.



New Trends in Aircraft Interiors

AIN Editor-in-Chief Matt Thurber moderates an in-depth discussion on the latest trends in business aircraft interiors and lighting design. Featuring Shervin Rezaie, General Manager, Aircraft Lighting International, and Veta C. Traxler, Paint & Interior Designer, West Star Aviation, this webinar will help owners and operators planning interior refurbishments make aesthetic choices for upcoming upgrades.



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Melbourne, Florida. Also: São Paulo, Brazil; Farnborough, England; Beijing; Dubai, United Arab Emirates; Singapore.

Manufactures and completes Phenom, Legacy, Praetor, and Lineage jets.

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(greenpnt.com, 425-828-2777)
Bothell, Washington.
*Completion and refurbishment, focus on airliner
executive/VIP conversion.*

Gulfstream Service Centers

(gulfstream.com/product-support/service-cen-
ters, 800-810-4853)
Appleton, Wisconsin. Also: Savannah, Georgia;
Dallas; Long Beach, California; Brunswick,
Georgia; Westfield, Massachusetts; Farnborough,
England.
Completion and refurbishment.

Haeco (Taeco) Aircraft Engineering

(haeco.com/en/home, +86 592-573-7296)
Xiamen, China.
Independent completion and refurbishment.

Hangar R

(hangar-r.com, 469-865-2110)
Grand Prairie, Texas.
Completion and refurbishment.

Heli-One

(heli-one.ca, 604-276-7500)
Richmond, Canada. Also: Jasionka, Poland; Sola,
Norway.
Helicopter completion and refurbishment.

Helicopter Specialties

(helicopterspecialties.net, 608-758-1701)
Janesville, Wisconsin.
Helicopter completion and refurbishment.

Helispec

(334-527-0020)
Brantley, Alabama.
Helicopter completion and refurbishment.

Heritage Aviation

(heritagemetalfabrication.com, 972-988-8000)
Arlington, Texas.
Helicopter completion and refurbishment.

Hillaero Modification Center

(hillaero.com, 402-474-5074)
Lincoln, Nebraska.
Completion and refurbishment.

Iacobucci HF Aerospace

(ihfelectronics.com, +39 0775 392531)
Ferentino, Italy.
Seats, other interior components.

Innotech Aviation

(innotechaviation.com, 514-636-7070)
Dorval, Canada.
Completion and refurbishment.

Interior Development Group

(idgjets.com, 770-234-9142)
Chamblee, Georgia.
Refurbishment.

International Jet Interiors

(intljet.com, 631-737-5900)
Ronkonkoma, New York.
Refurbishment.

JCB Aero

(jcbaero.com, +33 5 62 07 7171)
Auch, France.
Completion and refurbishment.

Jim Miller Aircraft Painting

(jmaircraftpainting.com, 830-278-3375)
Uvalde, Texas.
Exterior paint.

KD Aviation/Reese

(kdaviation.com, 609-259-4200)
Robbinsville, New Jersey.
Paint shop.

Kvand Aircraft Interiors

(kvand.com, +7 495 749 43 37)
Moscow.
Completion and refurbishment.

Legacy Aviation Services

(legacy-aviation.com, 405-350-2100)
Yukon, Oklahoma.
Refurbishment.

LifePort

(lifeport.com, 360-225-1212)
Woodland, Washington.
Helicopter completion and refurbishment.

Lufthansa Bombardier Aviation Services

(lbas.de, +49 30 8875 4600)
Schönefeld, Germany.
Completion, refurbishment, and MRO.

Mecaer Aviation Group

(mag-incorporated.com, 267-341-0130)
Philadelphia.
Completion and refurbishment.

Metro Aviation

(metroaviation.com, 318-698-5200)
Shreveport, Louisiana.
Helicopter completion and refurbishment.

Metrojet

(metrojet.com, +852 2523 6407)
Hong Kong.
Maintenance.

MNG Jet

(mngjet.com, +90 212-999-3000)
Istanbul, Turkey.
Helicopter completion and refurbishment.

New United Goderich

(newunitedgoderich.com, 519-228-6052)
Huron Park, Canada.
Refurbishment.

Ormond Aircraft

(ormondaircraft.com, 386-672-4022)
Ormond Beach, Florida.
Refurbishment.

Penta Aviation Services

(penta-aviation.com, 604-273-4649)
Richmond, Canada.
Refurbishment.

Pentastar Aviation

(pentastaraviation.com, 800-662-9612)
Waterford Township, Michigan.

SPECIAL SECTION: CABIN FURNISHINGS AND TECHNOLOGY

PrivateSky Aviation Services

(privatesky.net, 239-225-6100)

Fort Myers, Florida.

Refurbishment.

PRO Aircraft Interiors

(proaircraftinteriors.com, 954-786-0908)

Pompano Beach, Florida.

Refurbishment.

Pro Star Aviation

(prostaraviation.com, 603-627-7827)

Londonderry, New Hampshire.

Maintenance and repairs.

Ranger Aviation

(rangeraviation.com, 325-949-3773)

San Angelo, Texas.

Refurbishment.

RAS

(rascompletions.co.uk, +44 1959 576 747)

England.

Refurbishment.

Richmor Aviation

(richmor.com, 800-359-2299)

Hudson, New York.

Refurbishment.

Robinson Aircraft Interiors

(robinsonair.com, 469-635-5050)

Fort Worth.

Refurbishment.

Rose Aircraft Service

(roseaircraft.com, 800-392-2551)

Mena, Arkansas.

Rose Aircraft Service

Rotorcraft Services Group

(rotorcraftservices.com, 817-625-0192)

Fort Worth.

Helicopter refurbishment.

RUAG Aviation

(ruag.com, +41 31 376 64 50)

Bern, Switzerland.

Completion and refurbishment.

Sabena Technics

(sabenatechnics.com, +33 1 56 54 42 30)

Paris.

Independent completions and refurbishment.

Sabreliner

(sabrelineraviation.com, 573-883-3729)

Ste. Genevieve, Missouri.

Refurbishment.

Sierra Completions

(sierracompletions.com, 303-347-7440)

Centennial, Colorado.

Serves VVIPs and does design, completion, and modification of aircraft.

Sikorsky

(sikorsky.com, 800-496-4337)

Stamford, Connecticut.

Helicopter completion and refurbishment.

Southstar Aircraft Interiors

(southstarinteriors.com, 830-278-4108)

Uvalde, Texas.

Refurbishment.

SR Technics

(srtechnics.com, +41 58 688 66 66)

Zürich, Switzerland.

Independent completion and refurbishment.

ST Aerospace

(staero.aero, +65 6287 1111)

Singapore.

Completion and refurbishment.

Stambaugh Aviation

(stambaughaviation.com, 912-265-7244)

Brunswick, Georgia.

Completion and refurbishment, single- and twin-aisle conversions.

StandardAero

(standardaero.com, 480-377-3100)

Scottsdale, Arizona. Also: about a dozen other

North American locations and Netherlands,

Singapore, and Australia.

Refurbishment, maintenance, avionics.

Starling Aerospace Interiors

(fly-sai.com, +44 1372 378079)

Leatherhead, England.

Completion and refurbishment.

Stevens Aerospace

(stevensaerospace.com, 800-359-7838)

Greenville, South Carolina. Also: Dayton, Ohio;

Nashville, Tennessee.

Summit Aviation

(summit-aviation.com, 302-834-5400)

Middletown, Delaware.

Refurbishment.

SureFlight

(sureflight.com, 484-718-3136)

Coatesville, Pennsylvania.

Refurbishment.

Talco Aviation

(talco.aero, 210-319-4371)

San Antonio.

Refurbishment.

Textron Aviation

(txtav.com, 316-517-8270)

Wichita, Kansas. Also: multiple other North American locations.

Completion and refurbishment.

Western Jet Aviation

(westernjetaviation.com, 818-785-2250)

Van Nuys, California.

Maintenance and repairs.

Trimec Aviation

(trimecaviation.com, 817-626-1376)

Fort Worth.

Refurbishment. West Star Aviation

(weststaraviation.com, 800-922-2421)

East Alton, Illinois. Also: Grand Junction,

Colorado; Chattanooga, Tennessee; Perryville,

Missouri; Aspen, Colorado; Wheeling, Illinois;

Englewood, Colorado; Scottsdale, Arizona;

Conroe, Texas; Minneapolis.

Western Aircraft

(westair.com, 800-333-3442)

Boise, Idaho.

Maintenance.

Yingling Aviation

(yinglingaviation.com, 316-943-3246)

Wichita, Kansas.

Refurbishment, maintenance, avionics.

Though this directory includes companies that BJT deems noteworthy, a listing here does not represent an endorsement by the magazine. Visit BJTonline.com for an expanded interactive directory that covers a wide variety of business aviation manufacturers and service providers.

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Now's the time to **kayak** off the Maine coast

The weather is idyllic—and so are more than 200 island campsites.

by Thomas R. Pero

Winter is too icy and frigid, spring too gray and rainy. But August and September—ah, this is the time to visit the rugged, rocky seacoast of Maine. Precipitation is the lowest of the year, typically just shy of three inches a month, and afternoon temperatures average a near-perfect 76 degrees Fahrenheit.

And at night the clear, dark sky, removed from the perpetual artificial glow of the megalopolis sprawl to the south, is a bright riot of stars. Among the best places to lie back and take in this spectacle is from one of the hundreds of islands that dot the enchanting coastline.

Many of these islands are privately owned. Yet they are accessible to the public, courtesy of the generosity of the owners, many absentee, in a partnership of extraordinary stewardship with a not-for-profit organization called the Maine Island Trail Association.

The group formed during the 1980s and launched by identifying some 30 public islands available for day and overnight stays. By working with landowners and emphasizing the respectful principle of “leave no trace,” the association has since expanded the list to more than 200 island campsites,

from Smuttynose Island off Portsmouth, New Hampshire, to Cobscook Bay, 375 miles north on the Canadian border. The rustic campsites are available to boaters on a first-come, first-served basis. (A detailed nautical map is obtainable from the association.)

The most exciting way to get to these islands is to paddle out in a sea kayak. Experienced kayaker Alicia Heyburn recommends “dressing for the temperature of the water,” not the air. In the Gulf of Maine, summertime waters run a brisk 50 degrees.

Heyburn knows her stuff. She is a registered Maine guide and regional stewardship manager for the Maine Island Trail Association. (Maine is the only state that requires professional kayak guides to be licensed; to become accredited, guides must go through a rigorous program on and off the water.) Her checklist starts with safety: practicing how to climb back in your kayak if you capsize. A properly sized personal flotation device is vital. Don't forget a spare paddle, sunglasses, and drinking water.

Sea kayaks are essentially slightly larger versions of the kayaks used to run





freshwater rivers. They are constructed of high-impact molded plastic and are 16 to 20 feet long, often with two cockpits. The width or beam can be up to 36 inches for added stability.

“We call them ‘beamy’—they’re extremely stable,” says Glenn Tucker, who runs Coastal Kayaking Tours out of Bar Harbor, the gateway to Acadia National Park, which covers approximately half of the spectacular Mount Desert Island. He has been kayaking Maine waters for 23 years.

“In a kayak, you get a unique perspective, even compared with sitting in other boats,” Tucker notes. “It’s like you’re right in the water.” There’s a good chance you’ll see seals, eagles, porpoises, and all kinds of seabirds.

If you’re not quite ready for an offshore overnight adventure, Tucker’s half-day tours through the Porcupine Islands off Bar Harbor may be just the thing to ease into the sea-kayaking experience. And after paddling, you can enjoy Bar Harbor, the quintessential New England coastal village. There, you can settle into one of the town’s many little restaurant for a dinner of steamed clams and boiled lobster, followed by homemade pie with wild Maine blueberries. **BJT**

A Bit of History

Acadia National Park is capped by 1,529-foot Cadillac Mountain, named for Antoine de la Mothe Cadillac, who was granted the granite dome in 1688 by King Louis XIV of France. It’s the highest point on the eastern U. S. coastline, from which intrepid dawn hikers are the first to see the sun rise like an orange orb out of the Atlantic Ocean.

For two to three million years, massive ice fields, in some places two miles thick, covered much of North America. The last glaciers receding from the Maine coast, 9,000 to 12,000 years ago, exposed the gorgeous pink-granite cliffs and boulders that kayakers paddle by today.—*T.R.P.*

Thomas R. Pero

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Let's all **speak truth** about business aviation

by Mark Phelps

A traveling salesman who is out of work and behind on his bills hears a knock at the door. He opens it to find a man on the front porch who says, "I'm here to get you back on your feet." The salesman's hopes are dashed, however, when he finds that the man is a tow-truck driver there to repossess his car.

The story may be amusing, but as anyone who relies on a vehicle for work knows, its loss would pose a major hardship. Dare we say the same about a company and its business aircraft?

When we start to rebuild our economy after the coronavirus tidal wave finally begins to ebb, business aviation will once again face a long-time challenge. In periods of financial distress, the company airplane (or fractional share, jet card, or charter account) is often an early casualty on the corporate budget and the last to find its way back. Just as often, however, it's the mere appearance of excess rather than the bottom-line reality that drives the decision. And as business aviation users, we are partly to blame for bowing to those skewed optics.

I remember reading about a company in Florida that sold its light jet during one of the recent financial crises. In its public statement, the company noted that the airplane was responsible for measurable revenue far beyond its cost; it admitted that it made the decision to sell so as not to appear to be fiscally irresponsible. Rather than publicly correcting the false impression that a business aircraft is just a luxury perk for its top executives, all too often a company will duck, absorb the hit to its profits from losing the

services of business aviation, and carry on. Each time that happens, the stereotype gets that much more firmly entrenched.

Time after time, business aviation users make the same mistake, running for cover in times of financial downturn and waiting for the barrage to blow over. We just seem to assume that no one who doesn't use corporate aircraft has the capability to appreciate their true value, so there's no point in fighting back against the image of gold-plated "luxury" jets.

Maybe the car analogy can help. But you need to stick to comparing personal cars and trucks directly used for business purposes with turbine aircraft. It's safe to assume that, starting with turboprop singles, the majority of general aviation aircraft are used—at least partially—in business applications.

This is a good place to consider the grain of truth behind the public perception. Yes, there are expensive turbine aircraft that serve purely as personal transportation for 0.01-percenters. But they are the exception rather than the rule. And it's worth noting that, for publicly traded companies, personal use of corporate aircraft is strictly regulated—it has to be reported as compensation for tax purposes. While it would be naïve to believe these rules are never broken or stretched, it is nevertheless important to acknowledge that those who do the breaking and stretching are, in fact, violating the law. And in the vast majority of circumstances, business aircraft are just that—aircraft used as a tool to benefit the business.

The National Business Aviation Association and other trade groups are always on the lookout for misleading reports on the industry, and they

do a good job of responding. But we all need to pitch in to spread the word.

So, challenge the critics with this: would they ask an on-the-road salesperson, retail-chain district manager, cleaning-service worker, or home inspector to give up their company car or van when times get hard? Should we expect them to make do with public transportation? That might be just an inconvenience in a city, but what would it be like if those professionals who served the suburbs or more rural areas lost their vehicle and had to wait for a bus or a train, get off at the closest stop, and then walk an hour or more to their destination? They'd be out of business in a hurry, and their customers would be without the service.

If you use business aviation, you understand how this analogy fits. Yes, it's true that business aircraft are more comfortable than the airlines, just as an SUV is more comfortable than a city bus. But that's secondary to the mission, just as having comfortable furniture and tasteful decor in your office complex is secondary to the main function of the building. The main benefit—and mission—of a pure business aircraft is productivity and return on investment.

We measure and confirm that return every day. Few flight departments would last long if they didn't. So why can't we make the same case in public? **BJT**



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